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Birds

THE
BIRDS OF AFRICA,

COMPRISING ALL THE SPECIES WHICH OCCUR

IN THE

ETHIOPIAN REGION.

BY

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Linurgus concolor.

Amblyospiza concolor, Bocage, Journ. Lisb. 1888, pp. 229, 232 *St. Thomas Isl.*; Sharpe, Cat. B.M. xiii. p. 670 (1890); Shelley, B. Afr. I. No. 458 (1896).

Neospiza concolor, Salvad. Acc. R. Sc. Torino, 1903, p. 26; Bocage, Journ. Lisb. 1904, p. 80 *St. Thomas Isl.*; Reichen. Vög. Afr. iii. p. 278 (1904).

Adult. Very similar in colouring to *L. rufibrunneus*, but a much larger bird. Entire plumage rufous brown, with ill-defined blackish centres to the feathers of the forehead, crown, hind neck and mantle; wings and tail, with the exception of the edges of the feathers, darker brown; under surface of the quills silvery brown, slightly paler on the inner margins; under wing-coverts rufous brown like the entire under parts. "Iris pale brown; bill dusky brown, with the under mandible whitish; feet brown." Total length 8 inches, culmen 0.90, wing 4.2, tail 1.9, tarsus 1.0. ♂, 9. 90. Rio Quija (F. Newton).

The Great Brown Short-tailed Finch is confined to the Island of St. Thomas.

The species was discovered by Mr. F. Newton, who informs us that it is known to the natives of the island as the "Enjolo." On the east coast he procured two specimens at the Rio Quija, which runs through the large forest at Angolares, and he observed it on the west coast at St. Miguel.

I overlooked the affinities of this bird when I published my third volume of the "Birds of Africa," presuming that it had been rightly assigned to the genus *Amblyospiza*, where it remained until Count Salvadori pointed out that it is a true Finch, and proposed to make it the type of a new genus *Neospiza* (Acc. R. Sc. Torino, 1903, p. 26).

This species appears to me not to be generically distinct from *Linurgus rufibrunneus*, Gray, and *Phæospiza thomensis*, Bocage, both of which I have referred to the genus *Linurgus*, Reichenbach.

It comes into my key (B. Afr. III., p. 172): "a. Plumage nearly uniform tawny brown, darker above than below." Add. a¹. Larger, wing over 4 inches. *concolor*. b¹. Wing under 3.5 inches, *rufibrunneus* and *thomensis*.

Section III. FRINGILLÆ (continued.)*

Family II. PLOCEIDÆ.

Bill strong and Finch-like, with the culmen extending back in a wedge between the sides of the frontal feathers; edges of the mandibles smooth, excepting in *Pyrenestes*. Nasal aperture rounded and impinged upon by the frontal feathers. Wings of ten primaries, the first a bastard-primary. Tail of twelve feathers, variable in form, and sometimes differ in the sexes according to the season. Tarsi and toes moderately strong, and the claws curved and sharply pointed.

The name of Weaver-bird has been given to the members of this family on account of their peculiar habit of weaving together the materials with which they construct their solid and often beautiful nests. When on reeds or in trees they are often suspended in colonies, and the entrance passage is frequently formed like a sleeve, varying from a few inches in length up to about five feet. Others will construct in company a single substantial roof for the protection of a whole colony.

The family is confined to the tropical portion of the Old World. Some 250 species (more than two-thirds) inhabit the Ethiopian region, and only about ten of these range beyond its boundary.

The members of this family may be readily distinguished from all the other Ethiopian Finches, not only by the well-marked first primary being shorter than all the others, but also by the bare culmen extending back so as to divide the feathers of the forehead into two portions.

With regard to the English names, I have endeavoured to make them useful by restricting certain ones to well-marked divisions.

* Vol. III., p. 140.

The Viduinæ include the Combasous (*Hypochera*), Whydahs (*Vidua*, *Coliuspasser* and *Urobrachya*), Bishop-birds (*Pyromelana* and *Anomalospiza*), and the Dioches (*Quelea*).

The Estrildinæ include the Ribbon Waxbills (*Amadina*), Social Waxbills (*Philetairus*), Negro Finches (*Nigrita*), Silver-bills (*Uroloncha*), Mannikins (*Ortygospiza*, *Spermestes* and *Nesocharis*), Cordon-blues (*Uræginthus*), Waxbills (*Estrilda*, *Coccygia* and *Chlorestrida*), Twin-spots (*Hypargus*), Fire-finches (*Lagonosticta*), Pytelias (*Pytelia*), Crimson-wings (*Cryptospiza*), and the Notch-billed Waxbills (*Pyrenestes*).

The Ploceinæ include the Blue-billed Weavers (*Spermospiza*), Grosbeak-Weavers (*Amblyospiza*), White-headed Weavers (*Dinemellia*), Buffalo-Weavers (*Textor*), Sparrow Weavers (*Plocepasser*), Anaplectes (*Anaplectes*), Malimbos (*Malimbus*), Black Weavers (*Melanopteryx*), Dark-backed Weavers (*Sycobrotus*), Black-winged Weavers (*Heterhyphantes*), Spectacled Weavers (*Hyphanturgus*), Slender-billed Weavers (*Sitagra*), Masked Weavers (*Hyphantornis*, *Pachyphantes* and *Othyphantes*), Golden Weavers (*Xanthophilus*), and the Fodies (*Foudia*).

KEY TO THE SUBFAMILIES.

- a. Bastard-primary very small, narrow and finely pointed, not reaching beyond the end of the primary coverts.
- a¹. Mantle striped in some stages of plumage; hind claw longer and more slender; generally with some of the inner feathers of the wing lanceolate; tail-feathers often obtusely pointed. The plumage of the males after the autumn moult usually resembles that of the females; but after the spring moult generally differs entirely *Viduinæ*.

- b¹. Mantle never striped; hind claw shorter and stouter; none of the inner feathers of the wing lanceolate; tail-feathers never obtusely pointed. Plumage very similar in both sexes at all times of the year . . . *Estrildinæ*.
- b. Bastard-primary larger, broader and not sharply pointed; tail always square or rounded *Ploceinæ*.

Subfamily I. VIDUINÆ.

Bill stout, shorter than the head and varying in colour according to the season. Wing with a bastard-primary which is very small, narrow and sharply pointed. Young birds, females, and adult males after the autumn moult have the tail square or rounded, and the plumage very Lark-like in colouring; the males for the breeding season (*Quelea* excepted) assume a totally different and more beautiful plumage, and often the shape and size of the tail greatly alter. The species mostly breed on or near the ground in marshy places, and construct an oval, domed nest of grass.

The fifty-three known species of this subfamily are all confined to Tropical and South Africa.

This subfamily is particularly subject to a law of Nature, very little understood, by which its members are liable to vary somewhat in colouring. For instance: to this law is due the variation in the colour of the bill in members of the genus *Hypochera*; the presence or absence of black feathers on the chin in *Vidua serena*; the scarlet or pale yellow colouring of the collar in *Coliuspasser ardens*; the variable amount of yellow on the flanks of *Pyromelana ladoensis*; the black on the head and throat of *Quelea quelea* and *Q. æthiopica*, this disappearing entirely in some specimens, when they assume the plumage described as *Q. russi*.

These variations probably depend to some extent upon the constitution of the individual bird being affected by the change in the flora and insect fauna of the large area over which they are distributed.

KEY TO THE GENERA.

- a.* Adult male and female totally dissimilar in their breeding plumage.
- a*¹. In full plumaged males: back never mottled; head, neck and breast not mostly yellow. Bill less stout.
- a*². No frill on the neck; no bright red nor yellow on the plumage.
- a*³. Tail entirely square; plumage black with a coloured gloss *Hypochera.*
- b*³. Four centre tail-feathers extremely long in full plumaged males *Vidua.*
- b*². A frill round the neck, and (with the exception of *C. concolor*) some bright red or yellow in the plumage.
- c*³. Tail longer than the wing and graduated *Coliuspasser.*
- d*³. Tail shorter than the wing.
- a*⁴. Tail distinctly rounded; full plumaged males with the head, neck, body and tail black; the lesser wing-coverts red, orange or yellow *Urobrachya.*
- b*⁴. Tail nearly square; red or yellow not confined to the wings *Pyromelana.*
- b*¹. Back always mottled with blackish centres to the feathers; head, neck and breast mostly bright yellow in full plumaged males; bill stouter *Anomalospiza.*
- b.* Adult male and female somewhat similar in plumage at all seasons; back always striped *Quelea.*

Genus I. HYPOCHERA.

Bill white or reddish, short, as broad as deep at the nostrils, the tip pointed; culmen curved, somewhat swollen and rounded. Nostrils basal, the apertures round and almost entirely hidden by the frontal plumes. Primaries: 1 very small, not longer than the culmen; 2, 3, 4 and 5 longest and nearly equal; shortest quill falling short of tip of wing by the length of the tarsus. Tail square, the inner pair of feathers slightly the shortest (the latter character distinguishing it from all the other genera

of this subfamily). Tarsi and feet reddish, moderate in size; claws fairly long and curved.

Type.

Hypochera, Bp. Consp. i. p. 450 (1850) . . . *H. chalybeata*.

The genus is confined to Tropical and South Africa, and comprises five closely-allied forms. Of these, two inhabit Northern Tropical Africa and may be readily distinguished from the more southern forms by the blacker colouring of the quills and tail, and of the under surface of the wings. The longitude of Grand Basam (3° 30' W. long.) forms apparently the boundary between the ranges of *H. chalybeata* and *H. ultramarina*.

The ranges of the three more southern forms are extremely badly defined.

KEY TO THE SPECIES.

- a.* Wings and tail dark sepia brown; less white on under surface of the wings.
- a*¹. Gloss on head and body more blue, distinctly shaded with green *chalybeata*. /
- b*¹. Gloss on head and body more lilac with no green shade. *ultramarina*. /
- b.* Wings and tail paler brown; more white on the under surface of the wings.
- c*¹. Gloss on head and body more violet, with no greenish blue shade.
- a*². Gloss slightly brighter and more violet . . . *funerea*. /
- b*². Gloss slightly duller and blacker . . . *nigerrima*. /
- d*¹. Gloss on head and body of a more greenish blue shade *amauropteryx*. /

Hypochera chalybeata.

Fringilla chalybeata, P. L. S. Müll. S. N. Suppl. p. 166 (1776).

Hypochera chalybeata, Reichen. Vög. Afr. iii. p. 213 (1904).

Fringilla nitens, Gm. S. N. ii. p. 909 (1788).

Hypochera aenea, Hartl. J. f. O. 1854, p. 115 *Senegambia*; Sharpe, Cat. B. M. xiii. p. 308 (1890); Butler, Foreign Finches in Captivity, p. 274, pl. 47 (1894); Shelley, B. Afr. I. No. 305 (1896).

Le Comba-Sou, Vieill. Ois. Chant. p. 44, pl. 21 (1805).

Male in breeding plumage. Black strongly glossed with greenish blue; outer half of the median and greater coverts, quills and tail sepia brown with some imperfect narrow buff edges to the primaries and centre tail-feathers; inner lining of the wing sepia brown with broad brownish buff inner edges to the quills; axillaries and about half of the under wing-coverts white; flanks with a few somewhat hidden white feathers. "Iris brown; bill and legs reddish" (Hartlaub). Total length 4.4 inches, culmen 0.35, wing 2.45, tail 1.5, tarsus 0.55. Dakah (Laglaize).

Adult female. Upper parts brown, mottled with dark centres to the feathers of the upper back, scapulars and lesser wing-coverts; remainder of the wings and the tail dark brown, with very narrow pale edges to the feathers; under wing-coverts white, shading into pale brown at the bend of the wing; centre of crown brownish buff with the sides blackish brown; sides of head buff, shading into brown on the ear-coverts, the upper part of which is darker and forms an ill-defined band; under parts light brown fading into white on the centre of the breast, abdomen and under tail-coverts "Iris brown, bill horny white, tarsi and feet rosy pink" (Butler). Wing 2.35. Senegambia.

Adult male in winter. Very similar in plumage to the female.

The Green Combasou ranges from Senegal to Grand Basam.

From Senegambia came the type of *H. xenea* which is in the Bremen Museum, and in the British Museum there are seven other specimens from that country, including one from Dakar on Cape Verde and one from Sedhiu near Casamanse. Mr. J. S. Budgett, while at the Gambia, found the species common near Quinela. On Bulama, one of the islands of the Bissagos group (11° 30' N. lat.) Sig. Fea procured two full plumaged specimens in July and three in half moult in June and October.

According to Mr. A. G. Butler, these birds often retain the breeding plumage for years in confinement; one of his did not change it for five years, and then at the time when the others were assuming the black plumage. They lay, he observes, three to five eggs, obtusely pointed and pure white.

The most eastern range recorded for the species is Grand Basam, where Arséne procured an immature specimen.

Hypochera ultramarina.

Fringilla ultramarina, Gm. S. N. ii. p. 927 (1788) *Abyssinia*.

Hypochera ultramarina, Sharpe, Cat. B. M. xiii. p. 309 (1890); Shelley, B. Afr. I. No. 306 (1896); Reichen. Vög. Afr. iii. p. 213 (1904).

Differs from *H. chalybeata* only in the gloss on the plumage of the males being violet shaded blue, with no green.

The Ultramarine Combasou ranges from the Gold Coast to the Niger and eastward over Northern Tropical Africa to as far north at 23° N. lat.

Hartlaub refers a specimen in the Bremen Museum from the Gold Coast to this form, which can hardly be regarded as more than a subspecies of *H. chalybeata*. In Togoland it has been obtained by Mr. Büttner at Bismarckburg and by Lieut. Thierry at Mangu. In the British Museum there are specimens from Abeokuta and from Rabba on the Niger. Dr. Hartert refers the specimen he procured at Loko to *H. ultramarina*, and one obtained by Wilson at Yelwa, in the Borgu province of Central Nigeria, he makes the type of a new species, *H. wilsoni*. In Equatorial Africa specimens have been collected by Emin at Lado and Rimo; the former Dr. Hartert refers to *H. ultramarina* and the latter to *H. ænea*. Mr. Oscar Neumann refers a specimen shot in Uganda in May to *H. purpurascens*, and one from Kavirondo, killed in February, to *H. ultramarina*. To this latter form Dr. Bowdler Sharpe refers all Fischer's specimens, and those obtained by Mr. Jackson at Kikumbuliu in December, and at Njemps in July, which had the bill whitish horn colour and the legs pink, and remarks that they agree with the series in the British Museum from Abyssinia and the White Nile.

In Somaliland the genus has been met with by M. Revoil. In Southern Abyssinia Lord Lovat shot a full plumaged male at the Kassim River, January 18, 1899, and according to his notes the bill and legs were pale coral. Quite black examples

of this bird were rare, only one or two being seen among large flocks. Mr. Pease obtained a male in full plumage at Adis Ababa, January 15. It had the bill pinkish white and the legs orange red. In Shoa Dr. Ragazzi procured a male at Farré, July 30, and two females at the Hawash River, August 7. The male was of a glossy blue-black, with the bill pale flesh colour; the females had the bill red and the feet pale flesh colour.

Mr. A. L. Butler has kindly sent me from Khartoum two males, both of which were breeding; one, shot April 16, is in the complete glossy blue black plumage; the other, on November 8, is in the brown livery, with the exception of two glossy black feathers, freshly assumed, and it shows no other sign of moulting. "These birds," he writes, "were sometimes very tame, but less so than *Lagonosticta brunneiceps*, with which they are frequently associated. They were abundant along the White Nile from Khartoum to Kawa from August to March, when they were in their full plumage. This leaves them only four months to go through two complete moults. Do they change after assuming the blue plumage once? I certainly saw only brown birds at Gedaref in May, 1901, but both of those I shot were hens."

I have already mentioned the fact that cage-birds have been known to retain the glossy black plumage for as many as five consecutive years, so we may presume they do the same in the wild state. There is another interesting point in Mr. Butler's observations: "The young birds are apparently fit to breed before they have assumed the black plumage for the first time."

According to Heuglin, they are resident and abundant in Nubia, frequenting the native villages in company with *Lagonosticta brunneiceps*. They are lively little birds, which enter the houses in search of food and water. The males moult into their bright breeding plumage towards the commencement of the rainy season. They prefer to frequent the clay huts

of the Nubians to the straw-thatched houses of the Soudanese and usually more than one pair live about the same farm-building. The song is not remarkable and the call-note is a very sharp harsh chirp. The nest, according to Brehm, is built indifferently on trees or in the roofs of houses or holes in walls, and much resembles that of our House-Sparrow, and is constructed of straw, rags, cotton, feathers and so on, lined with hair and shreds. Occasionally they will take possession of a deserted Swallow's nest or a hole in a tree.

The eggs are three to five in a clutch, of a bluish white colour, and measure 0.6×0.44 .

Hypochera funerea.

Fringilla funerea, De Tarrag. Rev. Zool. 1847, p. 180 *Natal*.

Hypochera funerea, Sharpe, Cat. B. M. xiii. p. 310 (1890); Shelley, B. Afr. I. No. 309 (1896); Reichen. Vög. Afr. iii. p. 215 (1904).

Hypochera funerea purpurascens (non Reichen.) Neum. J. f. O. 1900, p. 285 *Uganda*.

Hypochera wilsoni, Hartert Nov. Zool. 1901, pp. 342, 343, *Yelwa*.

Similar to *H. ultramarina*, but differing in the quills and tail being of a paler brown and in having more white on the under surface of the wing; no greenish blue gloss on the plumage.

The Mourning Combasou ranges from the Niger through Central Africa to Natal.

In the British Museum there is a specimen procured by Mr. Robin at Abeokuta, which has been referred to this form, but as it was along time in spirits, this determination may not be correct, so I prefer to regard the type of *H. wilsoni* from Yelwa in Central Nigeria as coming from the most northern known range for this species. The genus *Hypochera* has not been recorded from Western Africa between the Niger and the Congo, nor to the south of Damaraland. The present species is, however, generally distributed over Central Africa to as far south as Natal and Zululand, specimens having been

collected at Bukoba (Stuhlmann), Kampala (Neumann), Mamboio (Kirk), Karema (Böhm), Magnua (Fülleborn), and at many places in Nyasaland; the type came from Natal, and the Messrs. Woodwards obtained specimens at Eschowe in Zululand.

From Nyasaland there is a good series in the British Museum obtained at Zomba, Lake Shirwa, Dedza, Fort Lister, Namiwawa and Malosa, in full plumage in April, July, September and December, and according to Mr. Alfred Sharpe the bird is known to the natives as the "Mlimba."

Hypochera nigerrima.

Hypochera nigerrima, Sharpe, P. Z. S. 1871, p. 133 *Galungo-alto*; id. Cat. B. M. xiii. p. 311 (1890); Shelley, B. Afr. I. No. 310 (1896); Reichen. Vög. Afr. iii. p. 216 (1904).

Hypochera funerea nigerrima, Stark, Faun. S. Afr. B. i. p. 154 (1900).

Hypochera purpurascens, Reichen. J. f. O. 1883, p. 221 *Usegua, Lindi*; Shelley, B. Afr. I. No. 308 (1896).

Similar to *H. funerea*, but distinguished by the gloss on the full plumaged males being duller and blacker.

The Black Combasou ranges from the Congo into the Lake Ngami district and eastward to Lindi and the Usegua country.

This form has been procured at Kassongo (Bohndorff), Galungo-alto (Hamilton), Kahata (Anchieta), Nukana, to the north of Lake Ngami (Fleck), Mauser, on the Zambesi (Alexander), Zomba and Fort Lister (Whyte), Undis (Fülleborn), Lindi and Usegua (Fischer).

On the Zambesi as well as in Nyasaland and the Usegua country both this form and *H. funerea* have been obtained, and the ranges of both are comprised in that of *H. amauropteryx*, which detracts somewhat from the specific value of the shade of the gloss on the plumage, by which character only can they be distinguished.

Hypochera amauropteryx.

- Hypochera amauropteryx*, Sharpe, Cat. B. M. xiii. p. 309 (1890); Shelley, B. Afr. I. No. 311 (1896); Reichen. Vög. Afr. iii. p. 215.
Hypochera funerea amauropteryx, Stark, Faun. S. Afr. B. i. p. 154 (1900).
Hypochera ultramarina orientalis, Reichen. Vög. D. O. Afr. p. 188 (1894)
Pare, Arusha, Nguruman, Karema, Kageyi, Bukoba.

Similar to *H. funerea* and *H. nigerrima*, but distinguished by the gloss on the full plumaged males being of a greenish blue shade.

The Brown-winged Combasou ranges from the Congo southward through Ondonga into the Transvaal and over central and eastern South Tropical Africa.

On the western side of the continent it has been obtained at Kossango (Bohndorff), Malandji in Angola (Schütt), Gambos and Humpata (Kellen), Ondonga (Andersson).

The most southern range yet recorded for this form is the Transvaal, where the type was obtained by Mr. Barratt at Rustenburg, and from the same place a similar bird was procured on January 5 by Mr. W. Lucas, who notes: "Bill dark pink, tarsi and feet yellowish." Layard mentions the bill as being red, and according to Stark all the South African forms have the bill white and the feet red.

Besides the specimens already noticed, I have examined one procured by Gueinzus at Mosambique, one of Bradshaw's from north of the Limpopo, two of Sir John Kirk's from Tete, and one from South Angoniland close to Nyasa Lake. Dr. Reichenow gives the names of thirteen localities where it has been procured in German East Africa, also Kikumbuliu and Njemps (Jackson) and Kikuyu (Doherty) in our British Protectorate.

In the Uniamwesi country Speke found them common in the villages, feeding like Sparrows. At Kitui in Ukamba, according to Hildebrandt, their native name is "Tchorelli."

Genus II. VIDUA.

In the males only, a great change takes place by the spring moult, the four centre tail-feathers becoming very much elongated, while the brown mottled colouring is replaced by a more becoming unspotted plumage. Bill often red, rather stout and shorter than the head; culmen curved; nasal aperture rounded and covered by the frontal feathers. Primaries: 3, 4 and 5 the longest, 2 about equal to 6. Tail shorter than the wing and nearly square, excepting in males in breeding plumage. Tarsi and feet fairly slender, with the claws rather long and curved. The nestlings are uniform brown.

Type.

- Vidua, Cuv. Leçons Anat. Comp. i. Tabl. 2 (1800) . . . *V. serena.*
- Videstrela, Lafresn. Rev. et Mag. Zool. 1850, p. 325 ? *V. regia.*
- Steganura, Reichenb. Syst. Av. pl. 76, fig. 3 (1850) . . . *V. paradisea.*
- Viduella, Reichenb. Singv. p. 59 (1863) *V. superciliosa.*
- Tetrænura, Reichenb. t. c. p. 61 *V. regia.*
- Linura, Reichen. Orn. Centralbl. 1882, p. 91 *V. fischeri.*

The five known species of this genus are confined to Tropical and South Africa. It is unnecessary to break up such a well-marked genus into four, which can be done solely upon the form of the elongated tail-feathers assumed by the males for the courting season.

I call the members of this genus Whydahs, they being as well known by that name as by that of Widows, and the former name has priority, having been used by Latham in 1783. Whydah is the name of a town on the coast of West Africa in 2° E. long.

KEY TO THE SPECIES.

- a. Four centre tail-feathers very much elongated *Males in breeding plumage.*
- a¹. Bill red; elongated tail-feathers narrow.
- a². Elongated tail-feathers black.
- a³. Elongated tail-feathers of moderate breadth throughout their length.
- a⁴. Entire plumage glossy greenish black *hypocherina.*
- b⁴. Underparts white *serena.*

- b*³. Elongated tail-feathers very narrow ;
 under parts buff. *regia*. p. 23
*b*². Elongated tail-feathers buff *fischeri*. p. 23
*b*¹. Bill black; elongated tail-feathers very
 broad *paradisea*. p. 25
b. Four centre tail-feathers not elongated *Males in winter, females*
and young birds.
*c*¹. Some black on sides of head; sides of
 crown black.
*c*². Centre of crown nearly white; bill dusky
 horn colour; larger, wing about 3 inches *paradisea*. p. 25.
*d*². Centre of crown pale rufous; bill red;
 smaller, wing about 2·5.
*c*³. More white on under parts *hypocherina*.
*d*³. Less white on under parts *serena*.
*d*¹. No black on sides of head.
*e*². Upper parts strongly mottled *Adults*.
*e*³. Sides of crown mottled with brown *regia*.
*f*³. Crown rufous shaded brown, streaked
 on the hinder half with black *fischeri*.
*f*². Upper parts uniform brown or irregularly
 mottled *Young of all species.*

Vidua hypocherina.

Vidua hypocherina, J. E. Verr. Rev. et Mag. Zool. 1856, p. 260, pl. 16
Paris Mus.; Sharpe, Cat. B. M. xiii. p. 208 (1890); Shelley, B.
 Afr. I. No. 313 (1896); Reichen. Vög. Afr. iii. p. 216 (1904).

Vidua splendens, Reichen. Orn. Centralbl. 1879, p. 180; id. J. f. O. 1879,
 p. 326 *Kibaradja*; Forbes, P. Z. S. 1880, p. 457, pl. 47, figs. 1, 3.

Male in breeding plumage. Head, neck, body and scapulars glossy
 blue black, slightly shaded with green towards the upper tail-coverts; tail
 with the four elongated feathers black glossed with green, and the remain-
 ing feathers dark brown, with white edges, broadest on their inner webs;
 wing dark brown, with broad, glossy, greenish blue edges to the inner
 feathers, and narrow buff edges to the primaries; under wing-coverts and a
 broad portion of the inner webs of the quills white. "Iris dusky brown;
 bill and legs dusky" (Hawker); "bill and feet bright coral red" (W. A.
 Forbes). Total length 10·7 inches, culmen 0·35, wing 2·6, tail 8·5, tarsus
 0·6. Ugogo (Kirk).

Adult female. Centre of crown rufous buff, flanked on each side by a
 broad black band from the nostrils to the nape; a broad white eyebrow
 shaded in front and behind with rufous buff like the cheeks and ear-coverts,

the latter surmounted by a black band; hind neck, back and wings mottled brownish black, with broad rufous buff edges to the feathers; edges of some of the median coverts and very narrow pale edges to the primaries white; tail brownish black with white edges to the feathers; under surface white washed with rufous buff on the sides of the crop and body, which latter parts are slightly streaked with brown shaft-stripes. Iris brown, bill and legs pale brown. Total length 4.2 inches, culmen 0.35, wing 2.0, tail 1.8, tarsus 0.55. Lamu (Jackson).

Adult male in winter. Similar in plumage to the female. Lamu (Jackson).

Immature. Differs in plumage from the adult female in being of a more uniform sandy colour, with the dark markings of the head, neck and back imperfectly developed. ♀ 3. 12. 97. Arabsiyo (Hawker).

The Splendid Black Whydah ranges from Ugogo into Somaliland and South Abyssinia.

The most southern range known to me for this species is Ugogo, a country due west of Zanzibar. Here Sir John Kirk procured an adult and an immature bird which are now in the British Museum, where there are also specimens from the plains to the south of the Kilimanjaro Mountain, shot by Mr. H. C. V. Hunter, and another one in full plumage obtained by Mr. Jackson at Lake Jipe, September 27, 1885, out of a large flock of the much commoner *V. serena*. At Ituru they have been found by Mr. Werther. Fischer met with the species at Nguruman near Lake Naiwasha, and procured the type of *V. splendens* at Kibaradja on the Tana River in November. He found these birds in flocks of from ten to thirty in company with *Lagonosticta brunneiceps* and *Vidua serena* feeding on the bare ground, where caravans had halted and left scattered corn behind. In Somaliland Mr. Hawker saw these birds only at Arabsiyo and Hargeisa; at the latter place they joined in flocks with other Finches on the "jowari" stubbles. The most northern known range for this species is Marko, 9° 30' N. lat. 41 E. long., where Mr. Pease obtained a hen bird in December.

The species has not been recorded upon satisfactory

authority from west of 35° E. long. Rochebrune mentions several localities for it in Senegambia, but no one else has recorded it from that part of the continent. The types of the species were given to the Paris Museum in 1852, by Commandant Guislain, and although labelled in that Museum as coming from Gaboon, M. Oustalet rightly doubts the accuracy of the locality; and I may remark that the same supposed Gaboon collection contained many other East African forms, such as *Passer castanopterus*, &c.

The spring and autumn moults take place about March and November, and the colour of the bill and legs also changes. The specimen figured by Forbes was presented to the Zoological Gardens by Mr. Archibald Brown on July 17, 1878, when it was in immature plumage. In that summer it assumed the black dress, and was moulting in the following March when it died.

Vidua serena.

- Emberiza serena*, Linn. S. N. i. p. 312 (1766).
Vidua serena, Reichen. Vög. Afr. iii. p. 217 (1904).
Emberiza vidua, Linn. S. N. i. p. 312 (1766) "India"!
Emberiza principalis, Linn. S. N. i. p. 313 *Angola*.
Vidua principalis, Sharpe, Cat. B. M. xiii. p. 203 (1890); Shelley, B. Afr. I. No. 312 (1896); Whitehead, Ibis, 1903, p. 224 *Orange R.*; Shortridge, Ibis, 1904, p. 178 *Pondoland*; Grant, t. c. p. 256 *Daira Aila*; Bocage, Journ. Lisb. 1904, p. 82 *St. Thomas Isl.*
 ? *Fringilla superciliosa*, Vieill. N. D. xii. p. 216 (1817).
Vidua erythrorhyncha, Swains. B. W. Afr. i. p. 176, pl. 12 (1837) *Senegal*.
Vidua fuliginosa, Licht. Nomencl. p. 49 (1854).
Vidua decora, Hartl. Ibis, 1862, p. 340 *Angola*.
Estrela carmelita, Hartl. Ibis, 1868, p. 46 *Natal*.

Male in breeding plumage. Upper parts jet black with a clear white collar; lower back and broad edges to the tail-coverts ashy white; wing black, with the least and median coverts and edges of inner greater coverts white with a few black shafts; under surface of quills dusky black, with white inner edges to the basal half; under wing-coverts white, mottled with black on the pinion; tail black, the short feathers with white wedge-

shaped marks on the end half of the inner webs, increasing rapidly in size towards the outermost ones; remainder of the head and the neck pure white like the under parts, with the sides of the head in front of the eye and sides of crop black, the latter forming an incomplete collar. Iris brown; bill orange red; tarsi and feet black. Total length 11.5 inches, culmen 0.35, wing 2.8, tail 9, with the short feathers 1.9, tarsus 0.65. ♂, 29. 12. 99. Morandat R. (Delamere).

Adult female. Centre of forehead and crown sandy rufous, with an equally broad band of black on each side from the nostrils to the nape; sides and back of neck, back and lesser wing-coverts rufous buff, with broad black centres to the feathers; tail black, and slightly graduated, with sandy edges to the feathers, and a considerable amount of white on the inner webs, increasing in extent towards the outer ones, which have the entire inner webs white, as well as rather broad white edges to the outer webs; wing brownish black; primary-coverts and primaries uniform; remainder of coverts and the secondaries with rufous buff edges, broadest on the feathers nearest to the back; basal portion of inner edges of quills and the under-coverts white mottled with black on the pinion; eyebrow buff, shading into sandy rufous from the eye to the nape; a broad black band through the eye and a narrow one along the cheeks; remainder of the sides of the head white like the under parts generally; crop and sides of body shaded with sandy rufous; flanks streaked with dusky brown. "Iris brown; bill like pink coral; tarsi and feet black" (Savile Reid). Total length 4.7 inches, culmen 0.35, wing 2.7, tail 2, tarsus 0.6. ♀, 18. 6. 81. Newcastle (Butler).

Male in winter plumage. Similar to the female. Wing 2.9, tail 2.2. ♂, 18. 6. 81. Newcastle (Butler).

Young. Upper parts entirely uniform brown, slightly darker on the wings and tail, the edges of the feathers of which are of a rather more rufous shade; there is no trace of white on the tail; inner margins of quills and the under wing-coverts rufous shaded white; sides of head whitey brown with the front part dusky; entire under parts uniform buff, tinted with ashy brown towards the crop, and with a tawny shade on the breast and under tail-coverts. "Iris dusky, bill horn colour with the base reddish, tarsi and feet dark brown." Total length 4.5 inches, culmen 0.35, wing 2.6, tail 1.9, tarsus 0.6. 28. 1. 81. Rustenburg (W. Lucas).

The White-breasted Whydah inhabits Africa generally south of about 17° N. lat., also the islands of St. Thomas and Fernando Po.

From Senegal Swainson obtained the type of his *V. erythrorhyncha*, which has been nicely figured, and, I may remark, shows a considerable amount of black on the chin, a character

I have generally found most strongly developed in birds from Senegambia and British East Africa.

In Liberia Mr. Büttikofer found the species common on the deserted farm-lands which had become overgrown with grass and bushes; he also met with it frequenting gardens in the centre of villages, and congregating in large flocks after the breeding season. When I was on the Gold Coast with T. E. Buckley we frequently met with these birds in small flocks along the roads near Cape Coast and Accra; but in February and March none of the males had assumed their full breeding plumage, and for that reason possibly we did not find out, as Gordon informs us, that they were looked upon here by the natives as sacred or "Fetish" birds.

On the Island of St. Thomas it is very common, according to Mr. Francis Newton, and Mr. Boyd Alexander has found it on Fernando Po.

Linnæus described the type of his *Emberiza principalis* from Angola, and this name has generally, but wrongly, been given precedence over his *Emberiza serena*. In the same country Mr. Monteiro procured the type of *Vidua decora* which is now in the British Museum. It was described as distinct from *V. erythrorhyncha*, Swainson, on account of its having the chin entirely white.

In Benguela, according to Anchieta, the species is known to the natives by several names: at Quillengues as "Cahengua" and at Quindumbo as "Genge" and "Columbaquindionjiô." It is certainly abundant throughout this country; but from the Cunene River southward to Cape Town it appears to be less common than in any other portion of its range, and is here somewhat replaced by *V. regia*, which is the commonest species of *Vidua* in this large area. In other parts of South Africa, according to Stark, it largely outnumbered its congeners, and in many districts is a very common bird.

Mr. Layard remarks that it is known to the Dutch colonists as "Koning Roodebec," or "King of the Red-bills," and is found in small flocks throughout Cape Colony. He was one of the first to observe that the males assume their remarkable plumage for the breeding season only, after which they moult back into the winter garb, which much resembles that of the female. During the autumn and winter months they often feed in flocks, in company with other Finches, and according to Stark, "in summer they disperse in small parties, each consisting of a single male and from ten to forty or even fifty females."

Mr. T. Ayres writes: "The male of this species has a curious habit of hovering over its mate when she is feeding on the ground, bobbing up and down as you see the May-flies and midgets do on a summer's evening in England. This exercise he generally continues some minutes without resting." Stark observes: "Like the other Weaver-birds, the present species feeds upon small seeds, principally grass seeds, also upon small insects and their eggs. Its ordinary call-note is a sharp chirp, but in spring the male utters a soft warbling song from the top of a bush or tall weed. In Natal this species breeds during the wet season, from November to the end of February or beginning of March. A somewhat openly woven domed nest of fine grass is suspended between the stems of a thick grass tuft a few inches off the ground, the ends of the growing grass being tied together over the nest so as to completely conceal it. The only nest that I have seen contained young birds from three to four in number."

The egg is glossy greyish white, with underlying violet marks and clear black or dark brown elongated surface-marks, evenly distributed. It measures 0.68×0.50 . The type of *Estrelida carmelita*, Hartl., is a young bird of this species, in the uniform brown plumage; it was shot by Mr. T. Ayres on the banks of Little Bushman River, near Maritzburg, in Natal.

In the Transvaal, according to Dr. Rendall, the species is common in the Barberton district and locally known as the "Kaffir Fink." Along the Zambesi, Sir John Kirk records it as "common everywhere, not limited to grass plains, but frequenting woods and coming near houses," and Mr. Boyd Alexander writes: "Breeds in large colonies, suspending their nests from the topmost twigs of tall acacia trees. They keep much to the waste plots of land near villages. The males have a laboured flight, as if they were weighed down by their long tails, which they commence to assume towards the end of October; in a flock the males predominate to a very large extent over the females."

It might appear that in this last sentence the words "males" and "females" have been misplaced in the printing, but possibly at the time he made these notes the females were sitting on their eggs.

In North-east Africa, according to Heuglin, the males during the breeding season may often be seen perched on the crown of a tree, singing. He further remarks that he never met with the species nesting on the ground, as Layard and Ayres did in South Africa, but, in the beginning of the rainy season, found the nest suspended some five or six feet over water; from the end twigs of a bough some three or four leaves were woven together at their ends, forming a bag lined with cotton and hair, with the interior cavity rather deep.

From Central and Eastern Africa, where the species is about equally abundant everywhere, there have been very few notes made of any interest; Fischer remarks that the birds are said by the natives to be polygamous, and he observes that the cocks were generally accompanied by two or three hens, or feeding in flocks in the open country. Dr. Hinde, while he was at Machako's, found flocks of these birds common in the swamps and reed-beds; Mr. Pease met with them, generally near

water, frequenting the high trees and the thick bush. Heuglin records them as ranging northward to between 16° and 17° N. lat., and not ascending the mountains beyond 7,000 feet; he met with them in Takah, Sennar, Kordofan and along the White Nile, singly or in pairs, but in the autumn more usually in family parties, frequenting the higher branches of trees in damp places and forest country, as well as the bushes in the more open districts, also the pasture land, hedges and plantation near habitations. The Hon. N. C. Rothschild and Mr. Wollaston have procured the species as far north as Shendi on the Nile. Mr. A. L. Butler procured a male in full plumage at Fachi Shoya in November, and writes, "A much scarcer bird here than *V. paradisea*."

The time of the two seasonal moults to which these birds are subject appears to vary with the climate; the males assume their beautiful plumage as soon as the rainy season sets in, which is also the commencement of the breeding season and spring of the year, and retain it for about five months; thus in South Africa it lasts from October to March, and north of the Equator from the end of March to the end of July; but these dates do not, I think, hold as a hard and fast rule, possibly owing to the different age and constitution of the birds themselves; but I doubt if any of these males fail to go through the two complete moults during the year.

Vidua regia.

Emberiza regia, Linn. S. N. i. p. 313 (1766) *Africa*.

Vidua regia, Shelley, B. Afr. I. No. 315 (1896).

Tetrænura regia, Sharpe, Cat. B. M. xiii. p. 209 (1890); Reichen. Vög. Afr. iii. p. 221 (1904).

Shaft-tailed Bunting, Lath. Gen. Syn. ii. pt. i. p. 183 (1783).

La Veuve à quatre Brins, Vieill. Ois. Chant. p. 59, pls. 34, 35 (1805).

Male in breeding plumage. Forehead, crown, sides of head in front of the eyes, back of lower neck, back, four elongated tail-feathers, inner

half of the wings, lower flanks and the under tail-coverts, black; remainder of plumage, with the exception of the wings and tail, rufous buff; primaries and outer secondaries dark brown, with very narrow outer edges and broad incomplete white inner edges; under wing-coverts white; four short outer pairs of tail-feathers dark brown, with white terminal patches on the inner webs of the outer three pairs. "Iris dark hazel; bill, legs and claws coral red" (F. Oates). Total length 12.3 inches, culmen 0.35, wing 2.8, tail 9.8, tarsus 0.65. ♂, 13. 2. 75. Omaruru (Andersson).

Adult female. Head and neck buff, with a broad dark brown band on each side of the crown from the nostrils to the nape, formed by the feathers having broad dark brown centres similar to those of the hind neck and mantle; tail short and square, the feathers blackish brown edged with buff, and the three outer pairs fade into that colour towards the ends of their inner webs; wings blackish brown, the coverts broadly edged with brownish buff, and the quills more narrowly so; under wing-coverts white, under surface of quills paler brown than above and with whitish inner margins; throat and sides of body sandy buff, fading into white on the remainder of the breast and the under tail-coverts. Total length 4.3 inches; culmen 0.35; wing 2.7, tail 1.7, tarsus 0.6. ♀, 28. 11. 66. Ondonga (Andersson).

Adult male in winter. Similar in plumage to the female.

Immature. Differs from the adult female in the upper parts being of a much more uniform sandy brown; crown uniform brown, and the sides of the head and back of neck uniform tawny buff.

The Southern Shaft-tailed Whydah inhabits Southern Africa between 15° S. lat. and 31° S. lat., and westward from 30° E. long.

The most northern localities known to me for the species are Huilla in Mossamedes and Tati in Matabeleland; the most southern, Colesberg in Eastern Cape Colony. This is not an unlikely species to have been shipped as a cage-bird to Bissao, where Beauduin obtained a specimen, and this may account for Vieillot and Bonaparte believing it to be a native of West Africa.

In Mossamedes specimens have been collected by Anchieta at Huilla and by Van der Kellen near Humbe in the Upper Cunene district. To the south of the Cunene River the species is resident and more abundant, especially in German South-west Africa. Layard records a specimen shot by Mr. Arnot at

Colesberg, which is the only instance I know of its having been met with in Cape Colony. Mr. Barratt found it distributed over the country from Kimberley to Rustenburg, but considered it to be of rare occurrence in the latter district. According to Stark, who met with the species in Natal only, it is polygamous, each male, in spring, being accompanied by ten or twelve females. At this season the beautiful cocks are very pugnacious, and are constantly fighting and chasing one another, their long tails by no means incommoding their flight, as is the case with *V. serena*. They are, indeed, of much more active habits than are the latter birds. Their call-note is a sharp chirp occasionally uttered, but the cock in moments of excitement indulges in a short and rather feeble song. They feed almost entirely on grass seeds.

Buckley found the species at the Limpopo. Oates collected four specimens at Tati in Matabeleland, in which country Jameson and Ayres saw several chasing each other near Selenia Pan and found them fairly abundant at Kanye, affecting well-wooded country with open patches of grass-land.

Vidua fischeri.

Linura fischeri, Reichen. Orn. Centralb. 1882, p. 91 *Usegua*; Sharpe, Cat. B. M. xiii. p. 210 (1890) *Kilimanjaro*; Reichen. Vög. Afr. iii. p. 222 (1904).

Vidua (Linura) fischeri, Reichen. J. f. O. 1882, pl. 2, fig. 1.

Vidua fischeri, Shelley, B. Afr. I. No. 314 (1896).

Male in breeding plumage. Forehead and crown sandy buff; remainder of the head and the entire neck jet black; mantle, wings and short tail-feathers more dusky black, with some narrow pale brown edges to the feathers; lower back and upper tail-coverts pale brown, with narrow dark centres to most of the feathers; the four narrow elongated tail-feathers sandy buff of the same shade as the crown, breast, thighs and under tail-coverts; flanks slightly streaked with dark brown; under surface of wings black, with some narrow buff edges to the coverts. "Iris brown; bill and legs orange red." Total length 10·1 inches, culmen 0·35, wing 2·6, tail 7·7, tarsus 0·6. ♂, 9. 12. 0. Errer Goata (Pease).

Adult female. Above mottled, blackish brown, with broad buffy brown edges to the feathers; forehead and crown pale rufous, with black stripes on the hinder part and shading into rufous buff on the sides of the head; under parts white, shaded with sandy buff on the base of throat and sides of body; under surface of wings dusky brown, with whitish edges to the coverts. "Bill red; iris and legs light brown." Total length 4.5 inches, wing 2.6, tail 1.8. ♀, 30. 11. 97. Arabsyo (Hawker).

Male in winter. Similar in colouring to the female. ♂, 2. 12. 97. Arabsyo (Hawker).

Fischer's Shaft-tailed Whydah inhabits Eastern Africa from Usegua to Shoa, between 6° S. lat. and 11° N. lat.

The most southern range known for the species is the Usegua country near Mount Kipumbui, where the species has been procured by Fischer, who discovered the type on the highlands of Motiom, which rise to the north-west of Kilimanjaro, and he collected other specimens at Nguruman near Naiwasha Lake. In the British Museum there are two adult males from the Kilimanjaro district, collected by Mr. Jackson and Mr. Hunter. The former naturalist obtaining a good series of six specimens between Ndai and Kinani, April 2, 1894; these he shot out of a small flock at a water-hole in the wilderness. Other flocks of *V. serena* and *V. hypocherina* were also present, but each species kept apart from the others. *V. fischeri* was in full plumage and evidently breeding at this season, and he remarks that the female, as might have been expected, is very similar to the hen of *V. serena*, but has an almost uniform reddish brown head with no lateral black bands, and the soft parts are akin to those of the male: "Bill dull pink, feet pale dusky pink, iris brown. The adult males having the iris brown, the feet bright coral red, and the bill dull coral red."

In Somaliland the species was first obtained by Révoil. Prince Ruspoli shot specimens at a water-hole to the south of the Ogodan district; Dr. Donaldson Smith met with it at

Goura in September, and at Bussaler in November, and Mr. Elliot obtained it at Hillier. Mr. Hawker, on November 30 and December 2, observed it in flocks near the water at Arabsiyo and Gebili; they were then in winter plumage and had congregated in flocks, and were conspicuous only by their red bill. Lord Lovat shot one at Hargeisa in Northern Somaliland, and Mr. Pease found the species in Southern Abyssinia, in the high trees bordering the marshes of the Errer Gota River, and never in any other locality. In Shoa Dr. Ragazzi procured two specimens in full plumage in August. Towards the end of that month the males moult into the winter plumage, which closely resembles that of the females, and the spring moult takes place about March.

Vidua paradisea.

Emberiza paradisea, Linn. S. N. (ed. x.) p. 178 (1758); id. (ed. xii.) i. p. 312 (1766) *Angola*.

Vidua paradisea, Shelley, B. Afr. I. No. 316 (1896).

Steganura paradisea, Sharpe, Cat. B. M. xiii. p. 211 (1890); Reichen.

Vög. Afr. iii. p. 223 (1904); Grant, Ibis, 1904, p. 257 *Tadejemulka*;

Bocage, Journ. Lisb. 1904, p. 82 "*St. Thomas Isl. ?*"; Reichen. Vög.

Afr. iii. p. 223 (1904).

Vidua verreauni, Cass. Pr. Philad. Ac. 1850 (June), p. 56 *Abyssinia*.

Steganura sphenura, Bp. Comsp. i. p. 449 (1850, July) *Abyssinia*.

Vidua paradisea orientalis, Heugl. Orn. N. O. Afr. p. 583 (1870).

Whydah Bird, Lath. Gen. Syn. ii. pt. i. p. 178 (1783).

La Veuve au Collier d'Or, Vieill. Ois. Chant. p. 63, pls. 37, 38 (1805).

Male in breeding plumage. Entire head, throat, back, wings, tail, sides of abdomen and the under tail-coverts black, hinder half of the neck and the breast buff, with the crop and front of chest chestnut; under surface of the quills ashy brown, with the inner edges white like the under wing-coverts, the latter mottled with black at the bend of the wing. "Iris dark brown; bill black; tarsi and feet dusky brown" (T. Ayres). Total length 16 inches, culmen 0.45, wing 3, tail 1.3, tarsus 0.7. ♂, 30. 3. 73. Tati (F. Oates).

Adult female. Head buffy white, with a broad black band on each side of the crown above the eyebrows from the nostrils to the nape; a black patch on the upper and hinder portion of the ear-coverts and a dusky spot on the lower portion; the buff of the crown mottled on the hinder half

with black; back of neck and mantle sandy brown, mottled with black centres to the feathers; lower back and upper tail-coverts uniform ashy brown; wings and tail dark brown, with some pale edges to the feathers; under wing-coverts and inner margins of the quills white, the former mottled with black along the bend of the wing; throat and under surface of body white, shaded with sandy brown on the crop and sides of the body; lower throat and flanks slightly marked with dusky stripes. "Iris dusky brown; bill light dusky brown, lower mandible pale; tarsi and feet pale." Total length 5.25 inches, culmen 0.45, wing 3, tail 2.4, tarsus 0.65. ♀, 28. 11. 82. Rustenburg (T. Ayres).

Immature. Upper parts uniform earthy brown, often mottled with a few black feathers; sides of head, throat and sides of body uniform pale brown fading into white on the centre of the abdomen and the under tail-coverts.

Adult males in winter plumage. Similar to the females.

The Paradise Whydah ranges over Africa generally south of 17° N. lat.

In West Africa specimens have been procured by Laglaise at St. Louis on the mouth of the Senegal River, by Marche at Daranka and Bathurst, and Beaudouin at Casamanse. Between this latter place and Gambaga, a distance of 900 miles, I do not find any record regarding the occurrence of this species, yet it appears to be fairly plentiful in Togoland, where specimens have been collected at Bismarckburg, Krachi and Jendi. On following down the West Coast I again find no record of the species for another 1,500 miles, till we come to Angola: here the type was discovered, and in the British Museum there is a full-plumaged male procured by Toulson at Loanda. To the south of the Quanza River specimens have been collected by Anchieta at Capangombe and Quillingues, and, according to Prof. Barboza du Bocage, it is fairly abundant from Loanda to Mossamedes. The only specimen recorded from St. Thomas Island was probably a cage-bird. Andersson found it not unfrequent at Lake Ngami, but scarce in Damara-land, and Mr. Fleck has procured specimens at Moxowi in the Kalahari district. I cannot trace the species further south in

Western Africa, and it has not been recorded from Cape Colony to the west of Kingwilliamstown, but Mr. Barratt met with it at the Diamond-fields near Kimberley. In Zululand the Messrs. Woodwards procured a series of adult males and two females at Eschowe and two others at the Black Umfolosi River, so that it would appear to be plentiful in that country. According to Stark: "This species, nowhere very abundant in South Africa, is still not rare in some parts of Natal and the Eastern Transvaal, in rather open 'bush-veldt,' localities in which little oases of grass are more or less surrounded by thorny bushes. The handsome cock, in spring and summer, is fond of perching on a prominent bush, from which he takes short undulating flights, returning invariably to the same perch. Occasionally he will hover for a few seconds over the grass in which one of his little brown mates is hidden, for he has many, from ten to fifty or more. At short intervals he utters a flute-like note, and now and then a few bars of his love song. When at rest the long tail-feathers are allowed to hang down, but in flight they are carried horizontally. Like the other Widow-birds, this species feeds almost entirely on grass seeds. The change of plumage, from winter to spring livery, in the males is completed in about six weeks." Mr. T. Ayres remarks: "During the breeding season, when the wonderful tail of the cock bird is fully developed, he will sometimes rise until nearly out of sight, when he suddenly descends with much velocity, and, if approached, makes off with ease and swiftness." He further writes in 1885: "This handsome *Vidua* is becoming much more plentiful amongst the Magaliesbergen than it used to be years back. Then it was scarcely known in the Rustenberg district, where it is now by no means uncommon. This species assumes its nuptial plumage later in the season than most of the family, not being in full dress till the latter end of December."

Sir John Kirk found the species in full plumage, in January and February, frequenting the grassy plains of the Zambesi and Shiré Rivers. In this part of Africa, according to Mr. Boyd Alexander, it is not nearly so common as *V. serena*. In Nyasaland it is known to the natives as the "Namdumbo," and specimens have been collected at Zomba, Fort Lister, Songue, Namaramba, Ntondwe, Chiradzulu, Mpimbi and Chanda. Throughout Eastern Africa it is abundant, and generally to be met with in small flocks of from ten to twenty, consisting of a single male and his many wives, often feeding on the ground in company with other species of small Weavers. In Ugogo, according to Dr. Pruen, their native name is "Tumbwe." In the Teita district Hildebrandt found the cocks in full plumage from February to July, accompanied by many hens and distinguished in the Kikamba language as "Mal-nguru" on account of their long tails. Mr. Jackson met with the species plentifully distributed along the coast and inland from Kilimanjaro to Lake Baringo.

In Somaliland, Fischer procured the species at Barawa, Mr. F. Gillett others at Wachali, and Mr. Hawker found it plentiful at Hargeisa and Arabsiyo.

From Central Africa there are in the British Museum a full-plumaged male obtained in Uganda by Dr. McCarthy Morrogh, and several in winter plumage from Kaka and Ed Duem on the White Nile. Regarding these latter Mr. Hawker, who collected them, remarks that the species was not common and he never saw any with the long tail-feathers; this was in April and May.

Mr. A. L. Butler writes to me from Khartoum: "In June I found them tolerably plentiful in the thorn bushes north of the Rahat River (a tributary of the Blue Nile); the males were all beginning to assume breeding plumage, but none at that date had the long tails. I saw a male in full breeding plumage

at Duem, September 30, and numerous males, with long tails, at Jebel Ain, November 15, and at Kawa on the following day. At this date a few of the males had shed one or two of the long tail-feathers. I also saw males still with their long tails on January 2 and 3, at Fatasha Wells, twenty miles west of Omdurman. I have seen males in full plumage from Western Kordofan, collected by Captain H. N. Dunn in October. They seem here to begin to change into the nuptial plumage in June, have acquired the long-tailed feathers by August or September, and retain them till December or January."

From Abyssinia came the types of *Vidua verreauxi*, *Steganura sphenura* and *Vidua paradisea orientalis*.

In this district, according to Heuglin, it is generally distributed and very common to as far north as Bogosland, but does not range further north than 17° N. lat., nor ascend the highlands above 7,000 feet. He met with them moulting out of the breeding plumage in October, and in large flocks in the autumn.

In the British Museum there are several specimens from Ailet and Koomaylei, including a male shot by General Sturt in March, which is in full breeding plumage.

The egg is grey, so very closely spotted with black that the pale ground-colour is scarcely visible, and measures 0.8 × 0.56.

Genus III. COLIUSPASSER.

This genus is distinguished from all the other *Ploceidæ* by the males assuming, for the breeding season, an elongated graduated tail of very flexible feathers. It resembles *Urobrachya* (its nearest ally) and *Pyromelana* in acquiring, by a spring moult, a frill of rather broad lengthened feathers on the sides and back of the neck. In its other characters, such as the short, narrow and sharply pointed first primary, coupled with the mottled brown plumage of the adult male in winter, it shows its close affinities with the *Viduinæ* only.

	<i>Type.</i>
Coliuspasser, Rüpp. N. Wirb. p. 98, pl. 36, fig. 2 (1835-40)	<i>C. laticaudus.</i>
Penthetria, Cab. Arch. f. Naturg. 1847, p. 331	<i>C. laticaudus.</i>
Coliostruthus, Sundev. Œfv. K. Vet. Ak. Förh. Stockh. 1849, p. 158	<i>C. laticaudus.</i>
Chera, Gray, Gen. B. ii. p. 355 (1849)	<i>C. procne.</i>
Niobe, Reichenb. Singv. p. 61 (1863)	<i>C. ardens.</i>
Penthetriopsis, Sharpe, Cat. B. M. xiii. p. 220 (1890)	<i>C. macroura.</i>
Drepanoplectes, Sharpe, Ibis, 1891, p. 246 .	<i>C. jacksoni.</i>
Diatropura, Oberholser, Pr. Acad. Philad. 1899, p. 215	<i>C. procne.</i>

The genus is confined to Tropical and South Africa, and comprises fourteen species. Its members, as well as those of *Urobrachya*, may be called the Marsh Whydahs. They all frequent marshy districts, construct oval nests mostly of grass, which they generally hide amongst the herbage close to the ground, and lay spotted eggs, three, sometimes four, in number.

It appears to me to be confusing rather than helping science to separate these species into several genera. The oldest name I can find for this group of birds is *Coliuspasser*. Have we a right to set it aside, as has been done by Dr. Sharpe (Cat. B. M. xiii. p. 215, note), or to substitute a more classical name? We are not, in my opinion, justified in doing either.

Out of the eight generic names proposed for members of this genus the three following have been previously used in other branches of zoology: *Penthetria*, Meigen, 1802 (*Diptera*); *Chera*, Hübn. 1816 (*Lepidoptera*); *Niobe*, Aug. 1851 (*Crustacea*).

KEY TO THE SPECIES.

- a. Most of the plumage uniform black *Males in breeding plumage.*
 a¹. Lesser wing-coverts scarlet; under wing-coverts black; wing 4·5 to 5·5.
 a². Smaller; tail shorter *procne.* 7.32
 b². Larger; tail longer *delamerei.* 7.33

- b¹. Lesser wing-coverts never scarlet; wing less than 4.5.
- c². All the wing-coverts black.
 - a³. Back of crown, nape and a collar scarlet *laticaudus*.
 - b³. No red on the head.
 - a⁴. A collar across the lower throat scarlet or yellow *ardens*.
 - b⁴. Entire plumage black *concolor*.
- d². Lesser wing-coverts chestnut or yellow.
 - c³. A large patch of white on the wing.
 - c⁴. Lesser wing-coverts chestnut *eques*.
 - d⁴. Lesser wing-coverts yellow.
 - a⁵. Tail shorter, about 3.4 *albonotatus*.
 - b⁵. Tail longer, about 5.5 *asymmetrurus*.
 - d³. No patch of white on the wing.
 - c⁴. Lesser wing-coverts yellow.
 - c⁵. Smaller; wing not more than 3.5.
 - a⁶. Upper back yellow *macrourus*
 - b⁶. Upper back black; under wing-coverts whitish with the bend of the wing yellow.
 - a⁷. Larger; wing 3.5 *macrocerus*.
 - b⁷. Smaller; wing 3.2 *soror*.
 - d⁵. Larger; wing not less than 3.9.
 - c⁶. Upper wing-coverts, excepting the least series, sandy buff; under wing-coverts mostly black; tail-feathers very narrow *psammacromius*.
 - d⁶. Median coverts yellowish fawn, like the outer under wing-coverts; remainder of under wing-coverts black; tail-feathers broad *hartlaubi*.
 - f⁴. Lesser wing-coverts sandy rufous scarcely darker than the under coverts; tail very long and arched *jacksoni*.
- b. Upper parts mottled—sandy brown with blackish centres to the feathers; a broad buff eyebrow; under parts whitish with the crop and flanks shaded with brown *Adult males in winter, females, and young birds.*
- c¹. Under wing-coverts black.

Emberiza imperialis, Shaw in Miller's Cimel. Phys. iii. p. 7 (1796).

Vidua phœnicoptera, Swains. Class. B. ii. p. 112, fig. 161 (1837).

Male in breeding plumage. Black, with a bluish black gloss on the edges of the feathers of the head, neck and breast; lesser wing-coverts orange scarlet; median coverts buff with somewhat hidden black shafts; greater coverts and the secondaries with buff edges; primaries with the ends paler and terminal buff edges; remainder of the under surface of the wing black. "Iris brown; bill light bluish ash; feet dark brown" (Stark). Total length 20·5 inches, culmen 0·7, wing 5·3, tail 16, tarsus 1·05. ♂, 28. 10. 81.

Natal (E. A. Butler).

Adult female. Upper parts mottled, the feathers all being brownish black with broad pale brown edges, of a slightly more tawny shade on the mantle, and inclining to buff on the greater wing-coverts; inner lining of the wings ashy-brown, with the coverts black. Under parts buff, shaded with brown and with brown shaft-stripes on the middle and lower throat, as well as on the front and sides of the breast. "Iris dark hazel; bill horn brown; tarsi and feet pinkish brown." Total length 6·1 inches, culmen 0·65, wing 3·7, tail 2·5, tarsus 0·95. ♀, 12. 6. 76. Natal (T. E. Buckley).

Male adult in winter plumage. Resembles the female in the form of the tail as well as in the colouring of the head, neck, body and scapulars, but differs in the wing being similar to that of the male in breeding plumage, only with the pale edges of the greater coverts and secondaries broader.

Immature male. Differs from the last phase and resembles the female in the colouring of the wing, with the exception of the lesser wing-coverts, which have broad yellowish edges.

The Kaffir Great-tailed Whydah ranges from Benguela into Eastern South Africa from Cape Colony to the Transvaal.

In Western Africa it is known from Caconda in Benguela, where Anchieta procured two adults and two young males, while at Humpata in Mossammedes, Van der Kellen also obtained a specimen.

To the south of the Cunene River I do not find the species recorded from any locality to the west of 25° E. long.; but Layard informs us that Mr. Arnold sent him several specimens from Colesberg, and according to Mr. Rickard it is common both at Port Elizabeth and East London, and we may add Natal, Zululand, the Orange River Colony and the Transvaal; but according to Mr. T. Ayres it does not approach the Natal

coast within eight or ten miles. Messrs. Butler, Feilden and Reid write : "Called by the Kaffirs 'Saca-bulo,' one of the commonest birds in the upper portion of the colony, but not observed in any great numbers below Howick, or rather Reit Spruit, a few miles lower down on the Pietermaritzburg road.

"They roost in hundreds, or even thousands, in the reedy vleys, flock after flock pouring in from all sides about sunset till the whole place is alive with them. The males begin to assume their summer livery, with its long tail-feathers, as early as August, but some of them are not in full breeding plumage as late as October. They were still in flocks, and apparently not nesting, when we left Newcastle in November. It would seem that the black plumage and long tail are not assumed by the males during their first year (and perhaps their second), for specimens were obtained in the immature or female dress as late as October 26, which could not possibly have subsequently gone through the various stages; and this would receive confirmation from the marked preponderance of the brown tailless birds over the long-tailed males in the various flocks. So great, however, is the preponderance that it can really only be satisfactorily accounted for by assuming the species to be polygamous."

Regarding the habits of this species, Stark writes : "This beautiful Widow Bird, remarkable for the extraordinary size of the tail of the male during the breeding season, is in many parts of Upper Natal, Zululand and the Southern Transvaal a very common summer resident on the borders of the vleis and swamps as well as on the open veldt, wherever there is a sufficient growth of grass to afford it concealment and a shelter for its nest. On bright sunny days the long-tailed males are fond of sitting on the taller heads of grass, or on some prominent bush or weed. They frequently fly from bush to bush with gracefully arched tail, apparently not much incom-

moded by its great size; but in the early morning when the grass is still wet with dew, or after a shower of rain, not a bird will be visible; they are then hiding under the grass, so hampered by their wet and heavy tails as to be unable to rise. At such times numbers are caught by the Zulu boys, who prize the long tail-feathers as head-dresses. In autumn both old and young collect in flocks of thousands and frequently leave the neighbourhood of their breeding place. At this season, until the following spring, they roost in dense reed-beds or among thick bushes. During autumn and winter they feed largely upon grass-seeds, millet and grain, in summer to a considerable extent on various insects. The young are fed on small caterpillars, grubs and termites. As soon as the males begin to assume their long tails in spring the flocks break up, and each male, accompanied by from ten to fifteen females, repairs to some suitable breeding place. As soon as they have fixed on a locality the females separate and each one proceeds to construct a nest in a thick tuft of grass. The cock meanwhile keeps a look-out from some point of vantage and spends most of his time in driving off other cocks who attempt to trespass on the territory occupied by his harem. He takes no part in the construction of any of the nests; should he see a man or beast of prey approaching he flies round with a warning cry, upon which the hens leave their nests, creep under the grass for a short distance, then rise and fly off until the danger is past. The nest is an oval, domed structure, with a side entrance, roughly woven out of fine grass lined with the flowering tops of grass and reeds. It is generally placed a few inches off the ground, in the centre of a tuft of grass, attached by its sides to many grass stalks, the blades and tops of which are bent down and tied together to form an additional concealment and protection. The female sits for fourteen days. The eggs, usually four in number, are small considering the

size of the bird ; they are white or bluish white, closely marked with small spots and dashes of dark brown and slaty grey ; they average 0.9×0.67 ." Mr. T. Ayres remarked that in Natal the males were in full plumage in December and January, and moult into the winter dress in March. According to Mr. H. Bowker, "the tail of the male in the breeding season is not an inconvenience to him ; he never, in fact, seems to enjoy himself so much as during a high wind, in which he shows off to advantage, spreading his tail out like a fan."

Mr. Layard observes : "Riding once between Table Farm and Grahamstown with Dr. Atherstone, I saw what I took to be a black silk neckerchief drifting down to us in a strong wind from a house on a hill some 300 yards from our road. I called the attention of my companion to it, when, with a laugh, he told me it was a male Kafir-fink. The deception was complete ! As he came near I saw he was drifting at a prodigious rate ; his wings flapping round and round like mill-sails, and his tail spread in a compact mass. He appeared quite capable of guiding himself, for he took care never to let me get within shot of him."

Mr. Distant, while at Pretoria, found that the birds had assumed their full plumage in November, and remarks : "Wherever wet places and high reeds are found, the long-tailed Widow-bird (*Chera procne*) may usually be observed pursuing its laborious and difficult flight, heavily handicapped by its seasonally developed tail, and is a good instance where sexual selection is exercised at the expense of protection."

Dr. Rendall writes : "This species is common on the flats round Barberton. To the natives it is the 'Sakubula,' and the large black tail-feathers are used in bunches by the Swazi 'Regiment of Infaans' (or young men) to adorn their head-dresses and shields, with great effect. The natives run the birds down on wet days when the moisture prevents them from

rising after a flight or two, and they are killed with sticks and knobkerries."

Mr. Haagner remarks: "This species is very common in the Transvaal, so far as can be judged from my experience in the Pretoria and Heidelberg districts. It is seen flying about the veldt everywhere, which is not the case with any other species of Weaver, so far as I am aware. The nesting season commences in October and November. The eggs are of a dirty grey-white ground-colour, indiscriminately dotted and blotched with light and purplish brown." The nests he found were always in tufts of long herbage near the ground.

The species apparently does not range further north in Eastern Africa than the Transvaal.

Coliuspasser delamerei.

Chera procne (non Bodd.) Sharpe, Ibis, 1891, p. 244 *Masai*; Jackson, Ibis, 1899, p. 597 *Elmateita L., Mau Ravine*.

Coliuspasser delamerei, Shelley, Bull. B. O. C. xiii. p. 73 (1903).

Diatropura progne delamerei, Reichen. Vög. Afr. iii. p. 145 (1904).

Similar in all its plumages to *C. progne*, but slightly larger, and distinguished by the greater length of the tail in the males in full breeding plumage. "Iris brown; bill pale horn blue; legs dark shrimp brown." Total length 25.5 inches, culmen 0.7, wing 5.5, tail 21.0, tarsus 1.05. ♂, 17. 3. 00. Mt. Kenya (Delamere).

Delamere's Great-tailed Whydah inhabits British East Africa to the east of Victoria Nyanza.

The known range of this wonderful bird, which has a longer tail in proportion to its size than any other wild species is separated from that of its nearest ally, *C. progne*, by over 1,400 miles. This fact drew my attention to the probability of the bird from the Equator being distinct from the South African form, although it shows a great similarity in general appearance. I find, however, that it differs in the same manner as *C. asym-*

metrurus does from *C. albonotatus*, that is, in the length of the tail of the male in full breeding plumage. In this species it varies from 20 to 23 inches; the greatest length of tail I have met with in the South African *C. progne* is 18 inches, but in the specimen described by Stark (Faun. S. Afr. B. i. p. 139) it is recorded at 19.50.

In the British Museum there are five of Lord Delamere's specimens, comprising an adult male almost in winter plumage, but still retaining the elongated feathers of the tail, which are much worn and have faded into brown, also an adult female, likewise in worn plumage; both of these were obtained at Likipia on January 19. Two months later, at Ngari, he shot the full plumaged male I have described as the type and two hens in fresh plumage, so that probably the species has an autumn as well as a spring nesting season. It is apparently not uncommon within its very limited range, for Mr. Jackson has procured many specimens; the first was at the Bogonoto River in Masailand, and during his journey to the coast, after leaving Doreta, he saw a few, mostly hens, in a swamp frequenting the high grass. He afterwards met with them in similar situations to the north of Lake Elmateita and to the east of the Mau Ravine, and the females were always more numerous than the males.

Coliuspasser laticaudus.

Fringilla laticauda, Licht. Verz. Doubl. p. 24 (1823) *Nubia*.

Coliuspasser laticaudus, Shelley, B. Afr. I. No. 219 (1896); Reichen. Vög. Afr. iii. p. 136 (1904).

Penthetria laticauda, Sharpe, Cat. B. M. xiii. p. 218 (1890); Grant, Ibis, 1904, p. 257 *Harrar, Dedgen*.

Coliuspasser torquatus, Rüpp. N. Wirb. Vög. p. 98, pl. 36, fig. 2 (1835-40) *Simien*.

Male in breeding plumage. Jet black, including the under wing-coverts, with sandy buff edges to some of the feathers of the back, wings, tail and

under tail-coverts; hinder two-thirds of the crown, nape, a narrow band on sides of neck and broad collar across the lower throat scarlet; the red feathers fading to yellow or white towards their base, and those of the back of the crown and the nape have narrow black edges. "Iris brown bill and legs black." Total length 10·7 inches, culmen 0·55, wing 3·2, tail 7·2, tarsus 0·9. ♂, 29. 11. 99. Nyrobe (Delamere).

Adult female. Upper parts, as well as the under wing-coverts, mottled brownish black with sandy brown edges to the feathers; a well-marked buff eyebrow; under parts pale sandy brown, fading into buff towards the chin and on the middle of the breast and abdomen; crop and sides of body partially streaked with brownish black. Iris dark brown; bill and legs pale brown. Total length 6·0 inches, culmen 0·55, wing 3·1, tail 2·7, tarsus 0·9. ♀, 21. 2. 99. Jawaha (Lovat).

Male in winter plumage. Similar in colouring to the female; but differs in the wings and tail being blacker, the latter longer, and the under wing-coverts entirely black. "Iris, bill and legs dark brown." ♂, 4. 1. 99. Chelunco (Lovat).

The Red-naped Whydah ranges from the Kilimanjaro Mountain into Abyssinia.

Fischer collected specimens at Komboko to the south-west of Kilimanjaro, in Arusha, at Susua and Lake Naiwasha, and on the mountains of Ukira, and he found a nest, containing three eggs, which was placed in a bush. The eggs were strongly glossed, whitish, with reddish brown and violet grey spots, most numerous at the thick end, and measured 0·66 × 0·48. Mr. Oscar Neumann also procured specimens in the Taveita and Kikuyu countries.

On the south-western slopes of the Kilimanjaro Mountain Mr. Jackson found them fairly plentiful in one place only, where, in May, they were apparently breeding, as they were also doing when he met with them in July on Mount Elgeyo at an elevation of 8,000 to 9,000 feet. He writes: "Only seen in long reeds and bulrushes at the swampy end of the small lake on the top of Elgeyo, evidently breeding. I also found them very plentiful in the long grass near Lake Nahuro. This bird has a curious habit of making a playground for itself. I noticed several in the long grass, and I saw the male

evidently playing, as it darted several times into the air to a height of about four feet, and then darted down again. Their 'playing-ground' is a work of some time, as the grass is all worn away in an irregular circle, with the exception of a small tuft left in the centre with two or three little recesses at the base, which are evidently the result of the birds' play." On the Mau Plateau (8,700 feet) he procured a male in breeding plumage on August 3, and remarks: "Plentiful in boggy hollows, where the grass is long. I saw this bird at its game of jumping up and down."

In Nandi, in April, he shot a male, female and young bird out of a large flock, and writes: "Still in flocks, consisting mostly of males in mottled plumage."

The species has not been recorded from Somaliland, but Lord Lovat shot three specimens at Chelunco, Baroma and Jawaha, within 150 miles west-south-west of Berbera. In Shoa Antinori collected a large series from April to September. Dr. Blanford met with the species on two occasions only in the highlands of Abyssinia near Antalo and Agula, and Heuglin found it in flocks with *C. macrourus* near Adowa and Aksum, in the marshy districts and the cultivated lands near the farms. The type of the species and the type of *C. torquatus*, Rüpp., both came from the North Abyssinian district.

Coliuspasser ardens.

- Fringilla ardens*, Bodd. Tabl. Pl. Enl. p. 39 (1783) *Cape Colony*.
Coliuspasser ardens, Shelley, B. Afr. I. No. 318 (1896); Reichen. Vög. Afr. iii. p. 135 (1904); Shortridge, Ibis, 1904, p. 178 *Pondoland*.
Penthetria ardens, Sharpe, Cat. B. M. xiii. p. 215 (1890).
Emberiza signata, Scop. Del. Faun. et Flor. Insubr. ii. p. 95 (1786).
Emberiza panayensis, Gm. S. N. ii. p. 885 (1788).
Vidua lenocinia, Less. Traité, p. 437 (1831) *Cape Colony*.
Vidua rubritorques, Swains. B. W. Afr. i. p. 174 (1837).
Vidua torquata, Less. Compl. Buff. viii. p. 278 (1837) *Cape*.
Penthetria auricollis, Licht. Nomencl. p. 49 (1854).

Male in breeding plumage. Black, with a broad scarlet collar across the base of the throat, the feathers of which pass into yellow and white at their bases. "Bill, tarsi and feet black; iris brown." Total length 12 inches, culmen 0.6, wing 3, tail 9, tarsus 0.85. ♂, 15. 3. 70. Alice, Cape Colony (Layard).

Adult female. Above mottled, blackish brown with broad pale brown edges to the feathers; a well-marked yellowish white eyebrow and a patch of the same colour beneath the eye; a loreal band and a band behind the eye black; ear-coverts buffish brown; under parts buff, with a slight yellow tinge on the chin and upper throat; lower throat, like the front and sides of the chest, washed with tawny brown, and marked with some slightly darker shaft-stripes; inner lining of the wings dusky ash, slightly paler on the coverts. "Iris brown; bill, tarsi and feet pale brown" (Stark). Total length 4.6 inches, culmen 0.55, wing 2.6, tail 1.8, tarsus 0.75. Pinetown (T. L. Ayres).

Adult male in winter plumage. Similar to the female in the form of the tail and the general plumage; but the dark centres to the feathers of the upper parts blacker, the inner lining of the wing entirely black, and the under tail-coverts having black centres. "Iris dusky brown; bill light horn colour, upper mandible darker; tarsi reddish brown; feet dusky." ♂, 8. 7. 78. Rustenburg (W. Lucas).

The Red-collared Whydah inhabits the eastern half of Africa south of the Equator and ranges into Angola.

The type of *Vidua rubritorques* belongs to this species, and was probably a South African bird, and not captured in Senegambia, from whence Swainson nominally received it, for all the representative specimens I know of from West Africa, from the Congo northward, belong to *C. concolor*. Dr. Cabanis remarks that in Major von Mechow's collection, there were three specimens of *C. concolor* and one of *C. ardens*. The latter and a specimen presented to me by the late Mr. T. T. Thomson, from Loando, are the only examples known to me of this species from any part of the West African subregion, or any place in Africa to the west of 24° E. long. Therefore, I consider *C. concolor* to be specifically distinct from *C. ardens*.

In Dr. Sharpe's edition of Layard's "Birds of South Africa"

occur the following notes: "This is a bird of the eastern portion of South Africa; Mr. Rickard has found them at East London, and we fell in with them at Alice and on the Blink-water. Captain Trevelyan says that it is common near King-williamstown. Mr. T. C. Atmore sent several specimens from Eland's Post, where it was common" and, "Captain Harford's informs us that in Natal they fly in flocks, five or six males with about fifty females. This we also observed when we fell in with them in the swampy grass-lands and fields of Kaffir-corn at Alice. The females usually hid themselves in the sea of herbage, diving to the bottom in a moment, while the males, after occasionally doing battle with each other, or hovering with the peculiar jerking, flapping motion common to this genus, over some of the females concealed in the grass, would betake themselves to some elevated head of corn or rush, and thence survey the field."

According to Stark, in winter they assemble in flocks and mix with other Weaver-birds. "The nests are domed, with a small entrance at the side; carefully woven of fine grass in the centre of a thick tuft of grass, many of the grass-stems being built into the walls of the nest, while others are plaited so as to form an arched bower over it." In Northern Natal, Major Clarke found them in small flocks frequenting the reeds which grow along the banks of rivers.

The habits of all the members of this genus are very much alike. The type of the species and the type of *Vidua torquata* were red-collared specimens from South Africa, from whence also came the types of *Vidua lenocinia* and *Penthetria auricollis*, which had yellow collars. This variation in the colour of the collar is probably due to the constitution of the individual bird, and similar changes from red to yellow on certain parts of the plumage are by no means confined to this species or genus.

Messrs Butler, Feilden and Reid write from Natal: "Generally distributed and fairly common. Some specimens of the male were obtained near Newcastle in November, with the collar orange rather than scarlet, but this is doubtless only an intermediate stage." In Zululand the Messrs. Woodward found flocks of the species in the "Mealie-gardens," and met with a nest "in a clump of tall grass, fastened to the stalks; it was a small domed structure, composed of fine grass, and contained little white speckled eggs."

In the Transvaal and Matabeleland the species is somewhat local but fairly common, according to Stark. Mr. Barratt shot specimens at Potchefstroom, Rustenberg and near Pretoria, and Mr. T. Ayres observed it in the Lydenburg district. In Mashonaland, Mr. Guy Marshall found the species only in large reedy swamps, where, however, it is fairly plentiful, though very wary, and writes: "The male, when showing off, expands the feathers of his curiously-constructed tail vertically, so as to make it appear as deep as possible. Along the Upper Zambesi Mr. Boyd Alexander procured a specimen at Zumba, and Capello and Ivens met with it at Caponda in about 15° S. lat. Sir John Kirk found the species tolerably common in the Shiré Valley, near Chibisa, and specimens have been collected in Nyasaland at Zomba, Mlosa, Milanji and Mpimbi. Böhm obtained the species at Karema, Mauh and Qua-Mpara; Sir John Kirk at Mamboio and in Ugogo; Emin at Mandera in Nguru; Neumann at Pangani; Ansore in Unyoro; Jackson from Mararu in Teita and from Ntebbi in Uganda. On the western side of Victoria Nyanza Dr. Reichenow records it from the island of Uliambiri and from Bukoba, and I cannot trace the range of this species further north or west in this direction, for in the Upper White Nile district towards Lado it appears to be entirely replaced by the West African *C. concolor*.

Coliuspasser concolor.

Vidua concolor, Cass. Proc. Philad. Acad. 1848, p. 66; id. Journ. Philad. Acad. 1849, p. 241, pl. 30, fig. 1.

Coliuspasser concolor, Reichen. Vög. Afr. iii. p. 134 (1904).

Similar to *C. ardens* and differing only in the full plumaged males being entirely black. Total length 10.2 inches, culmen 0.55, wing 2.8, tail 7.2, tarsus 0.85. ♂, Uganda (Jackson).

Cassin's Black Whydah ranges from Senegambia into Angola and Central Africa.

Hartlaub in 1861 mentions a specimen from the Gambia in Verreaux's collection, which is the most northern range known to me for this species. The type was discovered by Afzelius at Sierra Leone, and in Liberia, along the Sulymah River, Demery collected ten specimens. I find no mention of the species from our British possessions of the Gold Coast and Nigeria; but four specimens have been recorded from Togoland and one from Camaroons.

In Central Equatorial Africa the species has been procured by Emin at Meswa; by Dr. Ansorge at Masindi in Unyoro, and by Mr. Jackson in Uganda, on the second and fourth days' march after leaving Kampala for Mount Ruwenzori. One of these latter specimens shows a few red feathers on the throat and may be a hybrid between this species and *C. ardens*, and resembles a specimen obtained by Dr. Fülleborn at Tandalla.

On the Congo River, Bohndorff procured the species at Manyanga, and in Angola specimens have been collected by Furtado d'Antas and by Major von Mechow, but it is apparently replaced by, or meets with, *C. ardens* in the southern portion

of that country, for one out of the four specimens procured by von Mechow, and Shütts's specimen from Malanga, belong to *C. ardens*, as well as one in the British Museum from Loando.

Coliuspasser eques.

Vidua eques, Hartl. P. Z. S. 1863, p. 106, pl. 15 *Tabora*.

Coliuspasser eques, Shelley, B. Afr. I. No. 323 (1896); Reichen. Vög. Afr. iii. p. 141 (1904).

Penthetria eques, Sharpe, Cat. B. M. xiii. p. 220 (1890).

Adult male. Uniform jet black, excepting the wings; lesser wing-coverts chestnut, passing into yellow along the edge of the bend of the wing towards the pinion; median coverts with buffy-brown edges; most of the greater coverts with a considerable portion white, decreasing in extent towards the scapulars, which are uniform black; quills with their basal portion white like the under coverts, the latter slightly tinted with rufous buff; remaining portion of the quills uniform black, or with a few narrow white or buff outer edges to the secondaries. "Iris brown; bill pale slaty blue; legs black." Total length 6.4 inches, culmen 0.55, wing 2.9, tail 3, tarsus 0.8." ♂, 8. 3. 00. Munisu (Delamere).

Adult female. Upper parts mottled, brownish black with broad pale brown edges to the feathers; no white on the wing, which is blackish brown with pale brown edges to the feathers, and the lesser coverts mostly chestnut; under wing-coverts sandy buff, rather darker along the bend of the wing; a broad eyebrow and the under parts generally brownish buff, inclining to white towards the chin and centre of breast. Iris, bill and legs brown. ♀, 2, 5. 96. Machako's (Hinde).

Immature. Like the female. ♂, 15. 2. 01. Roquecha (Pease).

Male in winter plumage. Similar to the female in colouring of head, neck and body; lesser wing-coverts brighter chestnut; and the same amount of white on the wings as in their breeding plumage; dark parts of primaries jet black. ♂, 24. 2. 00. Walamo (Pease).

Speke's White-winged Whydah inhabits East Africa between 7° S. lat. and 10° N., and eastward of 30° E. long.

The type was discovered by Speke at Kazeh, better known as Taboro in the Unyamwesi country. In this district Böhm met with it at Kakoma in February and March, in small

parties consisting of a male accompanied by several females. He also found the males in full plumage at the Ifume River in December. It has been met with by Emin at Mrogoro in Ugogo, and by Fischer at Maurui on the Pangani and at Speke's Gulf.

Mr. Jackson procured specimens in the Kilimanjaro district near Taveta, at Kikumbuliu and Ulu in Ukamba, and at Ndera in the Teita country. These Marsh Whydahs are very partial to long grass in swampy districts, and he mentions them as exceedingly common among the cane-like grass on the banks of the river at Nzoi. At Machako's Dr. Sydney Hinde found them very abundant, usually frequenting the reed-beds; but almost every native village was frequented by at least one pair. Dr. Ansorge has collected specimens as far west as the Holulu River, in which district Mr. Oscar Neumann procured a specimen at Kwa Mtesse in the Singo Province at the north-west corner of Victoria Nyanza, and others during his journey in the Ulu Mountains and at Kwo Kitoto in Kavirondo. In the Kenia district Lord Delamere found the species already in full plumage by the beginning of February; but the specimens procured by Mr. Harrison at Walamo, near Lake Rudolf, in February, and those met with by Mr. Pease at Roquecha in that month, and at Harrar in November, were in the brown winter plumage. The breeding season varies with the climate, the object probably being to secure an adequate supply of the food best suited to the young birds.

Coliuspasser albonotatus.

Vidua albonotata, Cass. Proc. Philad. Acad. 1848, p. 65 *Natal*.

Coliuspasser albonotatus, Shelley, B. Afr. I. No. 321 (1896); Reichen. Vög. Afr. iii. p. 140 (1904).

Penthetria albonotata, Sharpe, Cat. B. M. xiii. p. 219 (1890 pt.) *Natal*, *Transvaal*, *Shiré R.*

Adult male. Uniform jet black excepting the wings; lesser wing-coverts and edges of bend of wing bright pale yellow; median coverts with buffy brown edges; most of the greater coverts with a considerable portion white, decreasing in extent towards the scapulars, which are uniform black; quills with the basal portion white like the under-coverts; the latter slightly tinted with rufous buff; remainder of quills uniform black or with a few narrow pale outer edges to the secondaries. "Iris hazel; bill pale bluish violet; legs black" (F. Oates). Total length 7 inches, culmen 0.5, wing 2.9, tail 3.4, tarsus 0.8. ♂, 20. 12. 77. Weenen (W. Arnold).

Adult female. Upper parts mottled, brownish black with broad pale brown edges to the feathers, no white on the wing, which is blackish brown with pale brown edges to the feathers, and the lesser coverts mostly yellow; under wing-coverts sandy buff, rather darker along the bend of the wing; a broad eyebrow and the under parts generally brownish buff, inclining to white towards the chin and centre of the breast. Iris, bill and legs brown.

Adult male in winter plumage. Very similar to the female, but the lesser wing-coverts brighter yellow, and with the same amount of white on the wing as in their breeding plumage; dark parts of the primaries black. ♂, July. Durban (T. L. Ayres).

The Natal White-winged Whydah ranges from Natal into Ugogo.

The type of the species came from Natal, which is the most western range known for the species. According to Stark, "This very beautiful and rare Widow-bird appears to have much the habits of the *Urobrachya axillaris*. It frequents marshy ground on the borders of rivers, where in summer the male sits on the summit of a tall stem of grass or reed and shows off his glossy black plumage and yellow shoulder-knot, frequently puffing out the neck feathers into a sort of ruff, like the Bishop-bird, while opening and shutting his wings, or occasionally taking a short flight and hovering, like a *Vidua*, with upraised wings, over the grass, where doubtless one of his brown wives is concealed." In the British Museum there are specimens from Umbilo near Durban, Weenen, the Ivuna River in Zululand, one of Wahlberg's from the Transvaal, another of Barratt's from the Winterberg district, one of

Bradshaw's from the Makalaka Country, and several of Frank Oates's from the southern tributaries of the Zambesi.

At Zumbo on the Zambesi, on November 7, Captain Alexander met with "a small flock, consisting entirely of male birds in full winter plumage. They frequented a stony, bush-grown locality near the village, and hardly a day passed without our finding them in the same spot. It is a remarkable-looking Weaver, the bar of white on the wings as it takes to flight at once attracts attention. Beyond Zumbo, on December 24, we observed for the first time a small party of males in full breeding dress. At first it was hard to realise that they belonged to the same species as those we had seen at Zumbo. For one thing, their habits seemed to have altogether changed, as instead of pottering about among bushes and getting up almost at one's feet, they resorted to the extensive marshy reed-beds, and were as wild as Hawks, travelling with a strong flight and as straight as a die for a considerable distance before alighting upon the next group of reed-heads. Their presence in this black velvety plumage came to us all the more as a surprise, since from the time of leaving Zumbo we never came across any individuals in the transitional stage."

During the Livingstone Expedition Sir John Kirk saw the species in a marsh by the Zambesi and brought home a specimen from the Shiré River. In this latter district, towards Lake Nyasa, specimens have been procured by Mr. Alexander Whyte at Mpimbe and Zomba, and by Sir Alfred Sharpe at Dedza in Angoniland; further north, specimens have been collected by Böhm at Katapana, to the west of Lake Moero, by Fischer at Lindi on the coast, and by Emin in the Ugogo country.

The egg is described by Mr. Nehr Korn as of a deep blue, with dull red and violet spots clustered towards the thick end, and measuring 0.8×0.58 .

Coliuspasser asymmetrurus.

Penthetria asymmetrura, Reichen. J. f. O. 1892, p. 126 *Loango, Congo, Angola.*

Coliuspasser asymmetrurus, Shelley, B. Afr. I. No. 322 (1896); Reichen. Vög. Afr. iii. p. 141 (1904).

Penthetria albonotata, Sharpe, Cat. B. M. xiii. p. 219 (1890, pt. *W. Afr.*).

Similar in colouring to *C. albonotatus* in all its stages; but the male in breeding plumage is readily distinguishable by its much longer tail, which varies from 4.5 to 5.5 inches.

The Angola White-winged Whydah is confined to West Africa, where it ranges from Gaboon to the Cunene River.

In the British Museum there are two specimens in winter plumage, from Gaboon, of Du Chaillu's collecting; three males, two in full breeding dress, obtained by Petit at Landana in January, 1876; an adult male from Cambambe in Angola, where Mr. Monteiro found the species not uncommon in the high grass; there are also three full plumaged males from Loanda and the Quanza River.

In Benguela Anchieta has collected specimens at Quisange, Catumbella and Caconda, where, according to his notes, it is known to the natives as the "Dunquequilele." It has also been met with in the upper Cunene district by Van der Kellen. This bird, like *C. delamerei*, can be recognised easily by the greater length of the tail in adult males in full breeding plumage.

Coliuspasser macrourus.

Loxia macroura, Gm. S. N. ii. p. 845 (1788).

Coliuspasser macrourus, Shelley, B. Afr. I. No. 324 (1896); Reichen. Vög. Afr. iii. p. 138 (1904).

Penthetriopsis macrura, Sharpe, Cat. B. M. xiii. p. 220 (1900); Butler, Foreign Finches in Captivity, p. 292, pl. 52 (1894).

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Fringilla flavoptera, Vieill. Ois. Chant. p. 69, pl. 41 (1805).

Fringilla chrysoptera, Vieill. Enc. Méth. iii. p. 964 (1823).

Vidua chrysoptus, Swains. B. W. Afr. i. p. 178 (1837).

Male in breeding plumage. Velvety black, with the mantle, lesser wing-coverts, edges of pinion and bend of the wing bright canary-yellow; some incomplete brownish buff margins to many of the wing-feathers; under wing-coverts sandy buff. "Iris brown; bill bluish black, with the cutting edges and tip of the lower mandible buff; tarsi and feet dark brown." Total length 7.6 inches, culmen 0.55, wing 3.2, tail 4, tarsus 0.95. ♂, 26. 5. 01. Pong (Boyd Alexander).

Adult female. Upper parts mottled dark brown, with broad pale edges to the feathers, very slightly shaded with yellow on the lesser wing-coverts; under surface of wings brown, with pale edges to the coverts and inner webs of the quills; a pale buff eyebrow; sides of head light brown, less mottled than the crown; under parts buff, slightly shaded with brown on the crop and flanks. "Iris brown; upper mandible horny brown; lower mandible and legs paler." Total length 5.3 inches, wing 2.6, tail 2.1, tarsus 0.8. ♀, Lokoja (Forbes).

Immature male. Similar in plumage to the female. ♂, Shonga, (Forbes).

Adult male in winter plumage. Very similar to the female, but differs in the wings being blacker and the lesser coverts bright yellow. ♂, 9. 2. 72. Accra (Shelley).

The Yellow-mantled Whydah ranges southward from Senegambia, the Niam-Niam country, Uganda and the mouth of the Tana River to Angola and the Zambesi River.

Many naturalists have collected specimens at the Gambia, but according to Dr. Rendall the species is not common there. Verreaux obtained it from Casamance, Beaudouin from Bissao. In the Bissagos Islands Fea has collected a large series on Bulama. At Sierra Leone it has been met with by Dr. Clarke, Demery found it at the Sulemah River, Mr. Büttikofer calls it tolerably common in Liberia, and Fraser obtained it at Cape Palmas. It is, in fact, common throughout its range in West Africa to as far south as Angola, frequenting the marshes. In February and March, when I was on the Gold Coast, they were all in the brown winter dress, but as the rainy season sets in the males assume their black plumage,

which here lasts from May to September. In May Mr. Boyd Alexander found many in the full breeding plumage, and others still in the brown dress. He met with them inland to as far as Binduri near Gambaga. In the Niger district Mr. Hartert found them in June and July at Loko, in full plumage, assembling in large flocks with other Finches in the rice and cornfields. Bohndorff procured the species in the Niam-Niam country, Dr. Reichenow and Mr. Sjöstedt in Camaroons, Du Chaillu and Marche in Gaboon, Falkenstein and Petit on the Loango Coast, Sperling, Jameson and Bohndorff on the Lower Congo, and Storms during his Tanganyika expedition. In the British Museum there is one of Mr. Monteiro's specimens from Angola, and in the Lisbon Museum one procured by Welwitsch at Galungo-Alto. The species has not been recorded from further south in Western Africa, but ranges southward to the Zambesi; here Mr. Boyd Alexander shot a hen bird in January, 1899, at Zumbo (31° E. long.). Along the Shiré Valley Sir John Kirk saw large numbers of them on the wide grass-plains, flying from one grass-head to another, always selecting the highest; knowing this, the natives catch them by setting a noose on any grass-head rising above the others. "The breeding plumage," he remarks, "was assumed in December and lasted throughout the wet season. The nest was made of grass, woven among the stalks. In this district Sir Alfred Sharpe procured the species on Dedja, a mountain in Central Angoniland, on the Portuguese frontier, at an altitude of 7,000 feet.

In German East Africa specimens have been collected by Böhm at Ifume and near the Lukumbi River, by Fischer on the southern banks of the Victoria Nyanza, at Speke's Gulf, and he also procured a specimen near Port Melinda, which is the most eastern range known for the species. Between this place and Uganda I do not find it recorded; but in the latter

country it has been met with by Dr. Ansorge, and as Bohndorff found it in the Niam-Niam country it probably inhabits the whole of the Central African Lake region.

The eggs are pale green, or greenish grey spotted with grey, and measure 0.8×0.55 .

Coliuspasser macrocercus.

Fringilla macrocerca, Licht. Verz. Doubl., p. 24 (1823) *Nubia*.

Coliuspasser macrocercus, Shelley, B. Afr. I. No. 325 (1896); Reichen. Vög. Afr. iii. p. 137 (1904).

Penthetriopsis macrocerca, Sharpe, Cat. B. M. xiii. p. 223 (1890).

Coliuspasser flaviscapulatus, Rüpp. N. Wirb. Vög. p. 98 (1835-40) *Abyssinia*.

Male in breeding plumage. Black, with the lesser wing-coverts canary-yellow; some pale brown or whitish edges to many of the other wing-feathers; end portion of the primaries dusky; under wing-coverts buff, with the edge of the bend of the wing bright yellow. "Iris dark steel blue; bill, upper mandible black, lower one brownish grey; feet dark grey." Total length 9 inches, culmen 0.65, wing 3.5, tail 5.0, tarsus 0.95. ♂, 11. 7. 02. S. Abyssinia (Degen).

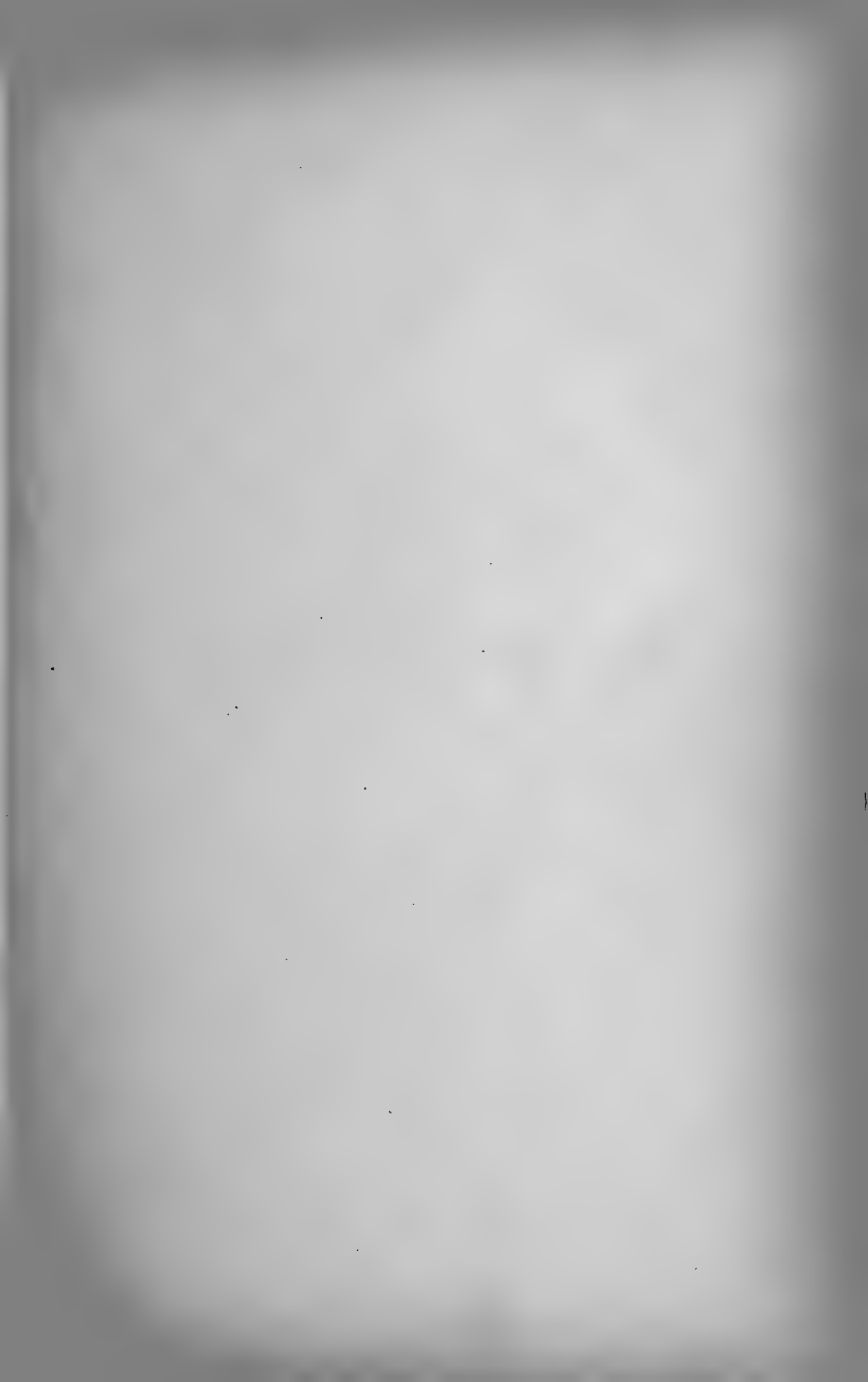
It closely resembles *C. macrourus* in all its other plumages.

Adult female. Wing 3.3, tail 2.4.

Male in winter. Upper mandible reddish brown, lower one lighter; legs brown.

Lichenstein's Yellow-shouldered Whydah inhabits the Abyssinian district.

The most southern range known to me for this species is Baroma (9° N. lat.); here Lord Lovat met with it associating with *C. laticaudus* in flocks. Heuglin found it common in Tigré and near Adowa in large flocks, at elevations between 4,000 and 7,000 feet, and also saw it in the country surrounding Gondar, where Rüppell procured the type of *C. flaviscapulatus*. He records their flight as not powerful, the note as a melancholy pipe, and remarks that "when alarmed" they hide among





1. *Pyromelana ladoensis*.
2. *Coliuspasser soror*.

the reeds which grow abundantly in the marshy districts they naturally frequent.

Coliuspasser soror. (Pl. 29, fig. 2.)

Penthetria soror, Reichen. J. f. O. 1887, p. 70 *Kawanga*.

Coliuspasser soror, Shelley, B. Afr. I. No. 326 (1896); Reichen. Vög. Afr. iii. p. 138 (1904).

Penthetriopsis soror, Sharpe, Cat. B. M. xiii. p. 223 (1890).

Male in breeding plumage. Black with the lesser wing-coverts lemon yellow. "Iris brown; bill with the upper mandible black and the lower one horny blue with a black base." Total length 7.6 inches, culmen 0.55, wing 3.2, tail 4.0, tarsus 0.9. ♂, 24. 6. 90. Kavirondo (Jackson).

Female, immature male and adult male in winter plumage. Similar to those of *C. macrourus*. Bill, upper mandible pale olive brown, lower one whitish horn colour; feet pale fleshy brown with a bluish shade.

Reichenow's Yellow-shouldered Whydah inhabits the country to the east of the northern half of Victoria Nyanza.

This is a small Equatorial representative of *C. macrocerus*, inhabiting the Kavirondo district. The type was procured at Kawanga by Fischer. In the Kavirondo country Mr. Jackson procured a male in February which had begun moulting, another in March almost in complete breeding plumage, two in May and June in the full black plumage, and one at Busoga in November which was commencing the autumn moult. He found them very plentiful in the Kakasuega district along the cart-road to Manicus, but it was not seen by him in the Nandi country.

Coliuspasser psammocromius.

Penthetria psammocromius, Reichen. Orn. Monatsb. 1900, p. 39 *Tandala*.

Coliuspasser psammocromius, Reichen. Vög. Afr. iii. p. 143, pl. , fig. 1, (1904).

Adult male Uniform glossy jet black, with the exception of the wings; lesser wing-coverts bright lemon yellow; median-coverts and entire outer

webs of the greater coverts pale sandy buff and with edges of the same colour on the secondaries; under wing-coverts pale sandy buff, with black inner webs to some of the feathers, and a few next to the primaries entirely black like the remainder of the wings. Total length 10·2 inches, culmen 0·65, wing 4·1, tail 6·0, tarsus 1·1. ♂, 9.02. Livingstonia (McClounie).

Adult female. Very similar to that of *C. macrocerus*, with the same amount of yellow edges on the lesser wing-coverts; but differs in having a large portion of the under wing-coverts black. From *C. progne* it differs in the black of the under wing-coverts not extending to the bend of the wing, and in the second primary reaching nearly to the end of the wing. Total length 6·4 inches, culmen 0·65, wing 3·6, tail 2·6, tarsus 1·05. ♀, 9.02. Livingstonia (McClounie).

Male in winter plumage. Head, neck, body and tail as in the female; and the wings as in the full plumaged male. 9.02. Livingstonia (McClounie).

Fülleborn's Marsh Whydah inhabits the Lake Nyasa district. The type, a male in full plumage, was discovered by Dr. Fülleborn at Tandala in about 9° S. lat. 34° E. long. There are now in the British Museum the three specimens I have described; these were collected by Mr. McClounie in Livingstonia to the south of Lake Nyasa. One of the characters of the species is that the tail-feathers are peculiarly narrow, being scarcely half so broad as in *C. hartlaubi*.

Coliuspasser hartlaubi.

Penthetria hartlaubi, Bocage, Journ. Lisboa, 1879, p. 259 *Caconda*; Cab. J. f. O. 1883, p. 218 *Wakala*; Sharpe, Cat. B. M. xiii. p. 219 (1890).

Coliuspasser hartlaubi, Shelley, B. Afr. I. No. 320 (1896); Reichen. Vög. Afr. iii. p. 142 (1904).

Penthetriopsis humeralis, Sharpe, Bull. B. O. C. xi. p. 59 (1901) *Nandi*. *Coliuspasser hartlaubi humeralis*, Reichen. Vög. Afr. iii. p. 143 (1904).

Male in breeding plumage. Uniform black with the lesser wing-coverts orange yellow; median coverts, edges of the greater coverts and a broad under margin to the bend of the wing rufous buff. Iris brown; bill grey. Total length 10·8 inches, culmen 0·75, wing 4·05, tail 6·0, tarsus 1·1. ♂, 5.93. Galungo (Anchieta).

Hartlaub's Marsh Whydah ranges from Benguela into the Upper White Nile district eastward to Nandi on the Equator, and Kondiland, about 10° S. lat.

Anchieta discovered the type at Caconda, where it was known as the "Quindembere." He has since obtained a specimen at Galungo on the Bengo River in Angola, where its native name is "Xituco," and it feeds on seeds. In the adjoining Machinge country Sesinando Marques procured another specimen, which he informs us was known to the natives as the "Bimba." To the eastward it has been obtained by Dr. Füllebour in Kondiland.

In Equatorial Africa, Emin procured a specimen at Wakala, the type of *Penthetria hartlaubi*, Cab., 1883; Dr. Stuhlmann one at Mengo, and it is known to me by the type of *Penthetriopsis humeralis*, which, according to the label, was shot at Nandi, and not on Mount Elgon, as recorded in the original description. On comparing this specimen with the one I have described from Galungo, it differs only in the tail measuring 4.5 inches, and I cannot admit it to be distinct from *C. hartlaubi* (Bocage).

Coliuspasser jacksoni.

Drepanoplectes jacksoni, Sharpe, Ibis, 1891, p. 246, pl. 5 *Masailand, Kikuyu*; Reichen. Vög. Afr. iii. p. 143 (1904).
Coliipasser jacksoni, Shelley B. Afr. I. No. 327 (1896).

Male in breeding plumage. Head, neck, body and tail entirely black; wings dark brown with pale edges to the feathers, broadest towards the lesser wing-coverts, the least series of which are almost or entirely pale fawn-colour of the same shade as the under wing-coverts. "Iris brown; bill with the base and lower mandible black, remainder of upper mandible pale green." Total length 13 inches, culmen 0.75, wing 3.5, tail 8.8, tarsus 1.1. ♂, 26. 9. 99. Mt. Settima (H. J. Makinder).

Female. Similar in general plumage to that of *C. macrourus*; but differs in the sandy shade of the least wing-coverts, the nearly uniform pale fawn

colour of the under wing-coverts, and the dark stripes on the crop and sides of body. "Iris brown; bill, tarsi and feet pinkish brown." Wing 3.2, tail 2.1. Nairobi (Mackinder).

Immature male. Very similar to the adult female, but with the crop and flanks more striped.

Adult male in winter. Similar to the immature bird, but distinguished by having the least series of wing-coverts pale fawn colour.

Jackson's Whydah inhabits British East Africa to the east of Victoria Nyanza between 3° S. lat. and 1° N. lat.

Mr. Jackson procured the types, a male and female, July 22, 1890, out of flocks frequenting the high grass in Masailand, and they were then in full breeding plumage. In October of the previous year he shot a male in the mottled brown plumage in the Kikuyu country. He next mentions the species as very plentiful in large flocks at Lake Elmateita in April, 1896, also in the Nandi district at an elevation of 6,000 feet, June 2, 1898, and writes: "Now commencing to breed. I found the nests, but only one contained a single egg. The nest is rather a flimsy structure, made of fine dry grass and lined with the seed-heads of fine grass, with an entrance at the side, like the nest of a Willow-Wren. It is placed on the edge of swampy places, but not on the coarse herbage of the swamps, within an inch or two of the ground. The birds bend down the surrounding blades of grass and weave them into the top of the nest, which makes the latter not only more difficult to detect, but also renders it more waterproof. Like *Penthetria laticauda*, the cock-birds make playgrounds for themselves, on which they dance up and down on and off throughout the day, but more vigorously in the early mornings and late evenings. Yesterday evening I watched several within a radius of 100 yards; and a truly ridiculous sight it was to see these pitch-black, curious-shaped objects, bobbing up and down out of the grass. From an ant-heap close by I watched

for a long time four cock-birds within forty yards of me ; and, as the sun was within half an hour of setting and shining brightly at my back, I had a first-rate opportunity of noticing how they assumed their curious attitude, and succeeded in making a fairly accurate drawing of them. The actual position is as follows: The head is thrown back like that of a proud Turkey-cock, the beak being held horizontally. The feet hang downwards ; the tail is held straight up till it touches the ruff at the base of the head and neck, the ends of the feathers falling in a curve downward, with the exception of two tail-feathers which are held outward and downward. While actually rising in the air the half-open wings are worked with a very quick shivering motion, and the feet are also moved up and down very rapidly. The bird springs straight up in the air, sometimes for a few inches and sometimes to the height of two feet, and then drops. The whole of the plumage is much puffed out throughout the performance, which is repeated five or six times, with a short interval for rest. The game would appear to be somewhat fatiguing, as the bird rarely makes more than five or six jumps at a time without a short rest. Only on one occasion was a female present on the playground. They very often assume their curious jumping attitude some little distance before they arrive at their playground. At night they roost in the tall reeds and rushes in the swampy hollows."

While at Machako's Dr. Sydney Hinde remarked: "The males of this species frequently form a playground in the long grass on the plains. The playground made by each bird is circular, about two feet in diameter ; the grass is beaten quite flat inside the ring, except one tuft in the very centre. A flock of these birds playing has a curious effect, as they jump about three feet in the air and drop down again into the circle, each bird jumping from five to ten times in a minute." I may

here add his brief but interesting description of this district: "Machako's Station, on the Uganda road, is situated at the edge of a grassy plain, which stretches for some miles to the westward. The only wood in the neighbourhood consists of single thorn-trees, scattered about at distances of 200 yards. The nearest forest is at Kikuyu, about forty-five miles away. On the east side of the station is a valley, at the bottom of which is a stream about two feet wide and three inches deep. The whole valley is cultivated, and a few patches of rank grass grow in the bed of the stream. On its eastern side the mountains rise abruptly, and some of them are 2,000 feet higher than the station, which is 5,300 feet above the sea-level."

Dr. Anson found the species at Nairobi, and during the Makinder Expedition to Mount Kenia it was met with in flocks of thirty or forty together, and appeared to be common along the western foot of the Mount Settima range. Sir Harry Johnston obtained the species at Lake Baringo, which is the most northern range yet recorded for these Weaver-birds.

In the British Museum there are many specimens collected by Lord Delamere, comprising males in winter plumage from Kikuyu in December, and from Lake Nakuro and Molo River in the early part of January, and full plumaged males in Likipia, January 21. Also several at Ngari Mosser and Elbedjeda on Mount Kenia. Specimens were procured in the breeding plumage by the Makinder Expedition, September 26, and in the winter plumage by Dr. Hinde at M'Gongo, October 20. This shows that the spring and autumn moults take place about January and October.

Genus IV. UROBRACHYA.

Most nearly allied to *Coliuspasser*, but the tail is always rounded and shorter than the wing. Bill brown or hoary grey. Adult males have the lesser wing-coverts scarlet, orange, or golden yellow; under wing-coverts and a portion of the upper wing-coverts rufous; during the breeding season the entire head, neck, body and tail are uniform velvety black, with a ruff of broad elongated feathers surrounding the sides and back of the neck. In winter the adult males assume a mottled brown plumage very similar to that of the females and young birds, but they may be readily distinguished by the bright colouring of the lesser wing-coverts, which is retained throughout the year. Tarsi and feet moderate; claws slender and much curved.

Type.

Urobrachya, Bp. Consp. i. p. 447 (1850) *U. axillaris*.

The genus is confined to Tropical and South Africa. I have given in my key the distinguishing character of nine named forms, but of these *U. affinis* is probably a cage variety of *U. axillaris*. *U. hildebrandti* I cannot look upon as more than a variety of *U. zanzibarica*, and the types of *U. media* are in apparently the young male plumage of *U. phænicea*.

U. zanzibarica, the large-billed form of the red-shouldered group, is confined to Eastern Africa and graduates almost imperceptibly into *U. axillaris* towards 10° S. lat., and into *U. phænicea* about 1° S. lat. *U. mechowi*, more recently named *U. ugandæ*, is the large-billed representative of the orange-shouldered group of which *U. traversii* is the northern form. *U. bocagei*, with its golden yellow lesser wing-coverts, is very distinguishable by the pale basal portion of the primaries showing well in front of the under wing-coverts.

KEY TO THE SPECIES.

- a. No pale base to primaries showing beyond the under wing-coverts.
 - a¹. Smaller, wing not more than 3·5 inches; rufous portion of wings darker.
 - a². Black ends to primary-coverts deeper than broad; greater wing-coverts more black than rufous.
 - a³. Pale portion of wing more cinnamon

- rufous, with the least wing-coverts scarlet *axillaris.* | 6
- b*³. Pale portion of wing more chocolate-rufous, with the least wing-coverts yellow *affinis.* p. 66
- b*². Black ends to primary-coverts smaller; least wing-coverts scarlet.
- c*³. Bill larger.
- a*⁴. Greater wing-coverts more rufous than black *zanzibarica.* p. 66
- b*⁴. Greater wing-coverts more black than rufous *hildebrandti.* p. 66
- d*³. Bill smaller.
- c*⁴. Winter plumage: head, neck and body whiter *phaenicea ad.* p. 65
- d*⁴. Winter plumage: head, neck, and body more rufous *media.* p. 65
- b*¹. Larger, wing not less than 3·5 inches in adults; rufous portion of wing paler sandy cinnamon; least wing-coverts orange.
- c*². Bill and wings larger; wing 3·7 to 3·9 inches *mechowi.* p. 68
- d*². Bill and wings smaller; wing 3·5 to 3·7 inches *traversii.* p. 68
- b*. With pale bases to primaries showing beyond the under wing-coverts; lesser wing-coverts golden yellow *bocagei.* p. 70

Urobrachya axillaris.

var. U. affinis. (Pl. 30, fig. 2.)

Vidua axillaris, Smith, Ill. Zool. S. Afr. Aves. pl. 17 (1838) *Kei B.*

Urobrachya axillaris, Sharpe, Cat. B. M. xiii. p. 224 (1890) Shelley, B. Afr. I. No. 328 (1896); Shortridge, Ibis, 1904, p. 178 *Pondoland*; Reichen. Vög. Afr. iii. p. 129 (1904).

Urobrachya affinis, Cab. Orn. Centrabl. 1881, p. 183 *Hab. (?)*; id. J. f. O. 1882, p. 122.

Male in breeding plumage. Black, with the exception of the following portions of the wing: lesser-coverts crimson-shaded scarlet, inclining to yellow on the base of the feathers; median-coverts, basal half of primary-

coverts, and a variable portion of the edges of the greater-coverts cinnamon. Iris dark brown; bill bluish horn-colour, inclining to white at the tips and edges of the mandibles; tarsi and feet black. Total length 6·3 inches, culmen 0·6, wing 3·4, tail 3·0, tarsus 0·95. ♂, 25. 2. 74. Durban (Shelley).

Var. U. affinis. Differs from the last only in having the lesser wing-coverts golden yellow and the brown on the wing-coverts of a slightly more chocolate shade. Total length 6·5 inches, culmen 0·65, wing 3·4, tail 2·7, tarsus 0·95. Cage-bird, Zoological Gardens.

Adult female. Brown; crown and back pale brown with broad blackish brown centres to the feathers of the forehead, crown and back, less strongly marked on the rump and upper tail-coverts; wings and tail dark brown, with pale brown edges to the feathers, passing into orange on the lesser coverts; sides of head and the under parts generally, brownish buff; a blackish band extending from the gape to the ear-coverts, which latter are shaded with dark brown; flanks with blackish brown shaft-stripes; under wing-coverts cinnamon. Iris brown; bill, tarsi, feet and claws pale brown. Total length 5·5 inches, culmen 0·6, wing 2·85, tail 1·9, tarsus 0·85. ♀, 5. 6. 75. Pinetown (T. L. Ayres).

Adult male in winter plumage. Similar to the female but differing in having the lesser wing-coverts orange scarlet, and the quills and tail-feathers black. ♂, 16. 7. 75. Botha's Hill (T. L. Ayres).

Immature. Similar in plumage to the female, but with less orange red shade on the lesser wing-coverts. ♂ and ♀, Pinetown (T. L. Ayres.)

The Natal Fan-tailed Whydah inhabits Southern Africa east of about 25° E. long. and south of 10° S. lat.

The most western known range for this species is the Kei River in Eastern Cape Colony, where Sir Andrew Smith procured the type. Mr. Rickard has found this Whydah nesting near East London in October and November.

In Natal and throughout South-eastern Africa it is abundant in the more marshy districts. Cols. Butler and Feilden and Capt. Savile Reid met with the species in Natal, and observe: "Extremely common at Richmond Road in December, where it was breeding. The nest is a slight but strong construction of grasses, nearly spherical, with a side entrance, built among the reeds. Eggs bluish green, tinted with olive, with large blotches and a few small spots, some clear dark olive, others

obscured, as if washed over by the ground colour; 0·8 × 0·6.”

The late Dr. Stark gives the following account of the habits of the species: “Like all the members of this genus, they are polygamous in their habits, and in spring the handsome males, looking very brilliant and spruce in their recently acquired plumage of velvety black, with scarlet and orange epaulettes, may be seen flitting over the reeds or grass with a curious ‘flopping’ flight, each one attended and closely followed in all its movements by ten or twelve females, insignificant-looking little brown birds, which nearly always keep close together in a ‘bunch’ a few yards behind their lord and master. About the beginning of November the females separate and commence building their nests. These are never very close together, although they are all within a certain distance that the male seems to look upon as his own exclusive property, and from which he drives other males of his kind, as well as those of the much larger and stronger *Coliopasser procne* who, hampered by their long tails, stand no chance in a fight with their smaller but much more active antagonist. Each female builds and occupies a separate nest. During the time she is sitting, the male stations himself on a tall weed somewhere near the centre of his harem, and keeps a sharp look-out for intruders; occasionally flying round to see how matters are progressing at his various establishments. Should a man or other dangerous enemy approach, he flies to each nest in succession with a warning note, upon which the sitting females leave their nests, creep under the grass for some yards, then rise on the wing to follow him to a distance. The nest, usually built in the centre of a tuft of grass, from eight inches to a foot off the ground, is a beautifully light and airy structure, oval in shape and domed, with a side entrance near the top; it measures about four inches and a half in height, and

three inches in diameter, is constructed of fine grass, with the flowering tops attached, woven in a sort of open network, so that the sides can be seen through, without any additional lining. The sides of the nest are attached to many of the surrounding grass-stalks, the blades and tops of the latter being bent over in the form of a canopy, so as to completely conceal it from above. The eggs, laid towards the end of December, are three in number. They have a highly-polished surface of a clear sea green, marked with large spots and blotches of deep olive brown. They measure 0.80×0.58 .

“These Widow Birds feed largely on insects, including grasshoppers, locusts, mantides, and termites, also upon various seeds, especially small grass-seeds. In winter the old and young birds form good-sized flocks, but never seem to wander far from their breeding station.”

Major Clarke saw a few full plumaged males in damp places near Ingogo; they were shy, restless and pugnacious. It appears to be abundant in the Portuguese territory on both sides of the Zambesi and in Nyasaland: Mr. Cavendish procured two specimens at Mapiuti in winter dress in September, and Dr. Stuhlmann collected thirteen near Quilimane, where, he informs us, it is known to the natives as the “Mribbe.” In Nyasaland the species has been obtained at the Palumbi River and at Kotakota. To the north in German East Africa, it is replaced by *U. zanzibarica*, and in West Africa by *U. bocagei* and *U. mehowi*.

U. affinis, Cab., which I have figured, is, I believe, as Dr. Reichenow has suggested (Vög. Afr. iii. p. 129), a variety of plumage of *U. axillaris* caused by its having lived for some time in captivity. The type is a bird which died in the Berlin Aquarium, and there are two similar specimens in the British Museum, both of which were cage-birds, one in the Zoological

Gardens, London, and the other in the possession of the well-known aviculturist, Mr. J. Abraham.

One can hardly believe that the *U. affinis* and *U. phœnicea* (Reichenow, J. f. O. 1892, p. 45) are alike in plumage, so I would suggest that the former may belong to *U. mechowii*, which Dr. Reichenow has, I think, wrongly referred to *U. bocagei*, a species which, I believe, has never been procured from so far north as the Quanza River.

Urobrachya zanzibarica. (Pl. 30, fig. 1.)

Urobrachya zanzibarica, Shelley, P. Z. S. 1881, p. 516 *Pangani, Usambara, Melinda, Lamu.*

Urobrachya phœnicea (non Heugl.), Sharpe, Cat. B. M. xiii. p. 225 (1890 pt. S. of Equator); Shelley, B. Afr. I. No. 330 (1896 pt. "E."); Reichen. Vög. Afr. iii. p. 130 (1904 pt. German E. Afr.).

Urobrachya hildebrandti, Sharpe, Cat. B. M. xiii. p. 225 (1890) *Mombasa*; Shelley, B. Afr. I. No. 329 (1896).

Urobrachya phœnicea hildebrandti, Reichen. Vög. Afr. iii. p. 132 (1904).

Urobrachya nigronotata, Sharpe, Bull. B. O. C. vii. p. 7 (1897) *Witu.*

Similar to *U. axillaris* in all its stages of plumage, and with the same shade of scarlet on the lesser wing-coverts, but differs in the bill being larger, and in full plumaged males the primary-coverts are mostly cinnamon. In the type the greater series of wing-coverts are almost entirely cinnamon. Total length 6·5 inches, culmen 0·7, wing 3·4, tail 2·7, tarsus 1·0. *Melinda* (Kirk).

The type of *U. hildebrandti* differs only in having the greater wing-coverts almost entirely black; wing 3·35 inches. *Mombasa* (Hildebrandt).

The type of *U. nigronotata* is intermediate between the two last in the colouring of the greater wing-coverts. *Witu* (Jackson).

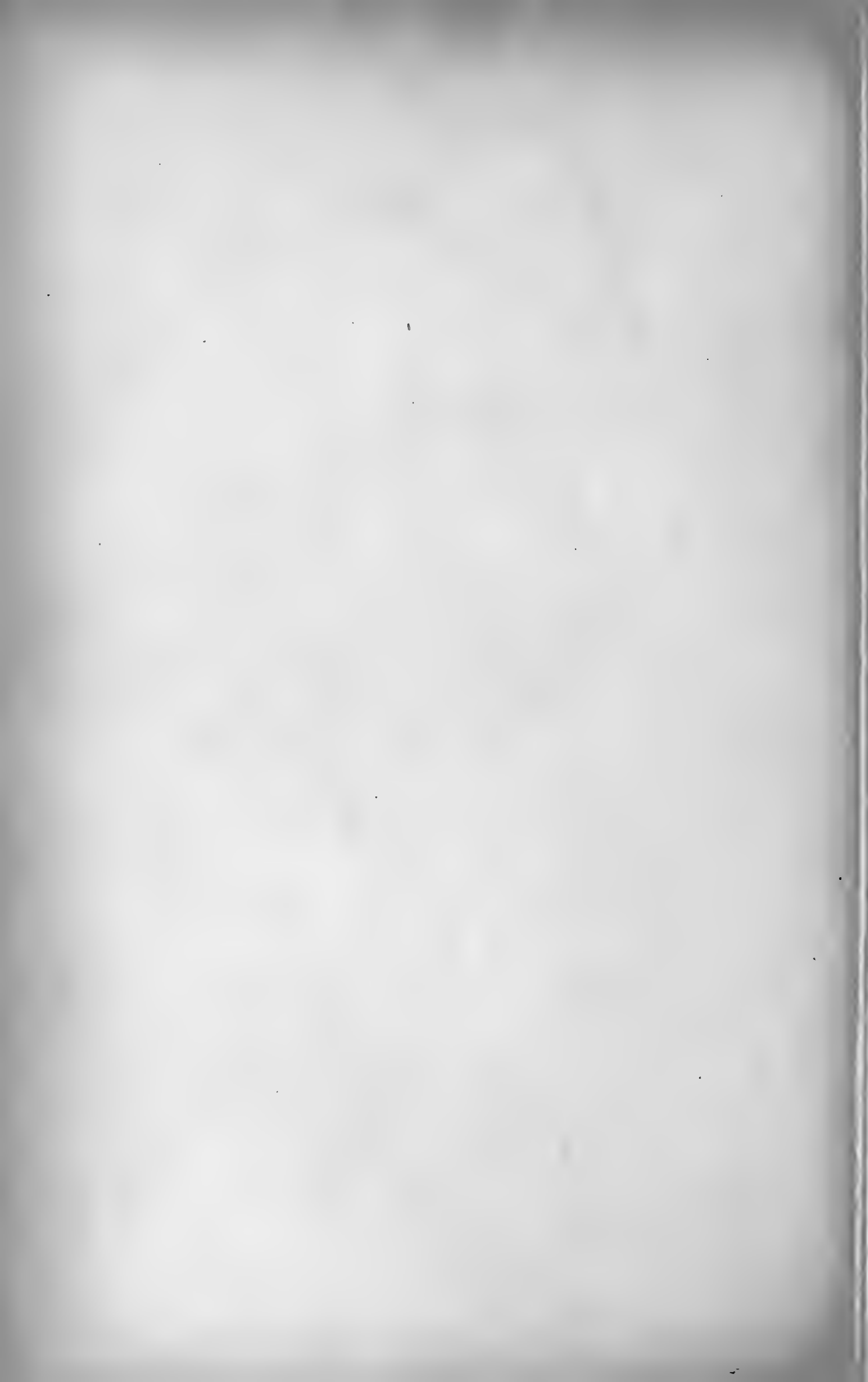
I cannot look upon these specimens as more than varieties of one species.

The Zanzibar Fan-tailed Whydah inhabits East Africa between 1° S. lat. and 10° S. lat.

Owing to the absence, formerly, of any full plumaged examples of *U. phœnicea* in the British Museum, Dr. Sharpe, in 1890, described one of the typical specimens of *U. zanzibarica* as the "adult male" of *U. phœnicea* (Heugl.), and



1. *Urobrachya zanzibarica*.
2. " *affinis*.



Dr. Reichenow (Vög. Afr. iii. pp. 130-133), by following Dr. Sharpe's lead, has confused the synonymy and distribution of these two species.

I doubt if either of the smaller-billed allied forms (*U. axillaris* and *U. phænicea*) have been found in East Africa between 10° and 1° S. lat. To the large-billed form, *U. zanzibarica*, certainly belong all Sir John Kirk's specimens from Pangani, Usambara, Melinda and Lamu, also two specimens from Mombasa, one a typically coloured bird and the other the type of *U. hildebrandti*, three of Bohndorff's from Mtoni, one of Jackson's from Witu (type of *U. nigronotata*), and a specimen procured by him at Yonte in Jubaland, "♂, ad. 1. 9. 02."

All the other specimens I have seen of Mr. Jackson's collecting belong to *U. phænicea*, so that I think we may regard 1° S. lat. as the boundary between *U. zanzibarica* and *U. phænicea*, and to *U. zanzibarica* I should refer so-called *U. phænicea* from south of 1° S. lat. and the whole of *U. phænicea hildebrandti*, Reichenow, which include the specimens collected by Fischer, Hildebrandt, Kirk, Bohndorff, Böhm, Marwitz and Fülleborn.

According to Fischer, the species is known in the Suaheli language as the "Tshongue."

Urobrachya phænicea.

Coliuspasser phæniceus, Heugl. J. f. O. 1862, p. 304; 1863, p. 167
Sobat R.

Urobrachya phænicea, Sharpe, Cat. B. M. xiii. p. 225 (1890 pt.) *White Nile*; Shelley, B. Afr. I. No. 330 (1896); Reichen. Vög. Afr. iii. p. 130 (1904 pt.).

? *Urobrachya media*, Sharpe, Ibis, 1902, p. 118 *W. Ankole*.

Urobrachya phænicea media, Reichen. Vög. Afr. iii. p. 132 (1904).

Urobrachya traversii (non Salvad.), Flower, P. Z. S. 1900, p. 957 *Kaka*.

Male in breeding plumage. Similar to *U. axillaris* in size of bill and colouring, with the exception of the primary-coverts and greater wing-

coverts, which are of the same cinnamon colour as the median-coverts, with the black portion confined to the three innermost greater wing-coverts and the extreme ends of the primary-coverts. "Iris brown; bill pale horn blue; feet slaty black." Total length 6.5 inches, culmen 0.6, wing 3.3, tail 2.7, tarsus 0.5. ♂, 28. 5. 98. Nandi (Jackson).

Adult female. Crown, back of neck, back, wings and tail mostly black, with tawny shaded brownish buff sides to the feathers; lesser wing-coverts with their edges more orange; a broad eyebrow and the sides of the head rufous buff, mottled with black on front of cheeks and hinder half of ear-coverts; underparts tawny-shaded brownish buff; crop, sides of neck and the flanks streaked with rather broad black shaft-stripes. "Iris brown; bill pale brown, the lower mandible whitish horn; feet brown, with a bluish tint." Total length 5.5 inches, culmen 0.6, wing 2.9, tail 2.0, tarsus 0.85. ♀, 28. 5. 98. Nandi (Jackson).

Adult male in winter. Head, neck, body and tail similar in colouring to those of the female; wings as in the full plumaged males, but with broader pale edges to the inner secondaries. ♂, 26. 10. 89. Kisumu (Jackson).

Female, variety. Very similar to the male which has assumed most of its black feathers, but the tail, primaries and the lesser wing-coverts are as in the ordinary female; median wing-coverts black, with broad pale rufous edges; greater wing-coverts entirely jet black; primary-coverts black, with broad rufous buff outer edges. Total length 5.0 inches, culmen 0.6, wing 2.8, tail 2.0, tarsus 0.8. ♀, 23. 6. 98. Nandi (Jackson).

Heuglin's Fan-tailed Whydah replaces *U. zanzibarica* in British East Africa from 1° S. lat. to the White Nile, and possibly ranges further south on the western side of Victoria Nyanza; but is itself replaced in Angola by *U. mechowii*, and in Shoa by *U. traversii*.

The species is apparently abundant throughout the marshy districts to the north of Victoria Nyanza, where Mr. Jackson has collected a large series from Ntebbi, Kampala, Nandi and other places. It has been recorded from Bukome, Itale, Mengo (Stuhlmann), and from Bukoba (Emin), but I have not seen these specimens. In its most western known range Dr. Ansorge procured specimens at the Holulu River, in the Congo Free State, and others in Toru, Uganda and Usoga.

In the Nile district Heuglin discovered the species at the Sobat River, and remarked that these birds were generally

in noisy parties of from six to ten, frequenting the heads of the high grass. They have a melancholy flute-like note. The moults take place in July and November. The species has also been procured by him at Port Rek, by Antinori in the Kidsh country, and by Emin at Babira, Bora and Lado. Mr. Hawker met with these Whydahs at Fashoda and Kaka in flocks, frequenting the recently burnt ground near the river and the swamps; and in April and May the males were all in the brown winter plumage. Capt. Stanley Flower also mentions seeing flocks of hundreds of these birds in the long dry grass by the White Nile, near Kaka, and I have received the following notes from Mr. A. L. Butler: "In February and March, 1902, I found it common in moderate-sized flocks from Kaka to Fashoda, up the Bahr-el-Gazel to Meshra-er-Rek, and also along the river-edge. In the desolate swamps of the 'Sudd,' where there was no mixture of dry ground, I never saw it. These birds have a heavy flopping flight."

Sir Harry Johnston procured at Tarangola, in West Ankole, two male birds in the brown dress, the types of *U. media*, Sharpe; these specimens have the plumage more strongly shaded with rufous than any others I have seen, but a somewhat similar variation in colour is to be met with in females collected by Mr. Jackson at Ntebbi, and is probably a sign of immaturity, or may be caused by rust in the water.

Urobrachya traversii.

Urobrachya traversii, Salvad. Ann. Mus. Genoa, 1888, p. 287 *Shoa*;
Sharpe, Cat. B. M. xiii. p. 226 (1890); Shelley, B. Afr. I. No. 331
(1896) Grant, Ibis, 1904, p. 257 *Shoa*.

Urobrachya phoenicea traversii, Reichen. Vög. Afr. iii. p. 132 (1904).

Male in breeding plumage. Velvety black, with the lesser wing-coverts reddish orange, fading into sulphur yellow towards the white basal half of these feathers; primary-coverts, greater and median-coverts (with the

exception of the innermost feathers) uniform cinnamon; secondaries with some imperfect buff edges; under wing-coverts cinnamon. Iris brown; bill greyish horn colour; feet black. Total length 7.3 inches, culmen 0.65, wing 3.6, tail 3.4, tarsus 1.0. ♂, 30. 6. 02. S. Abyssinia (Degen).

In the size of the bill and in all its other stages of plumage it closely resembles *U. phoenicea* and *U. axillaris*.

Traversi's Fan-tailed Whydah inhabits Shoa and Southern Abyssinia.

The species was discovered by Dr. Traversi at Antotto in Shoa, and specimens have been collected in that country at Sutta and Urafa Bonata by Dr. Ragazzi, who found it in full plumage in October and not rare. Mr. E. Degen met with it in flocks of male birds only at Manna Gasha west of Adis Ababa in June.

In Southern Abyssinia Lord Lovat procured specimens at Lekaniti, and writes: "A very local bird, but in large numbers where it is found. On our western journey from Adis Ababa to Dabous we passed through country inhabited first by this species, then during a few days' march we saw only *Penthetriopsis macrocerca*, and then once more the *Urobrachya* only was met with, the long-tailed Weaver, *Penthetria laticauda*, remaining constant throughout." Mr. Pease saw large flocks of these birds among the grass and sedge at the edges of Lake Zwai and procured specimens at Lekamti.

Urobrachya mechowi on meadow streams near Adis Ababa.

Urobrachya mechowi.

Urobrachya mechowi, Cab. Orn. Centralbl. 1881, p. 183; id. J. f. O. 1882, p. 122 *Angola*.

Urobrachya bocagei, pt. Sharpe Cat. B. M. xiii. p. 226 (1890) "*Sp. e. Columbo*"; Reichen. Vög. Afr. iii. p. 133 (1904 pt.) *Quanza R. and Angola*.

Urobrachya axillaris (non Smith), Shelley, Ibis, 1902, p. 165 *Karungwesi*.

Urobrachya phoenicea quanzæ, Hartert, Bull. B. O. C. xiii. p. 56 (1903). *Quanza R.*; Reichen. Vög. Afr. iii. p. 133 (1904).

? *Urobrachya affinis*, Reichen. J. f. O. 1892, p. 45 *Mengo*.

Type of U. quanzæ. Very similar in colouring to *U. traversii*, with the lesser wing-coverts slightly yellower; remainder of wing-coverts uniform pale cinnamon, with the exception of a portion of the innermost greater wing-coverts black; but is a larger bird with a distinctly stronger bill. Total length 6·5 inches, culmen 0·8, wing 3·8, tail 2·5, tarsus 1·1. Barraca (Pemberton).

Mechow's Fan-tailed Whydah ranges from the Quanza River eastward to Karungwesi, and northward possibly to Uganda.

In Angola Major v. Mechow discovered the species, and procured several specimens at Malandje in December, January and February. A little further south Mr. Monteiro obtained a male in breeding plumage at Colombo on the Quanza River, November, 1868, which is in the British Museum. Along this river, at Barraca, Mr. Pemberton collected two males in full plumage in May, one of which is the type of *U. phænicea quanzæ*, Hartert. To this species undoubtedly belong three specimens, in winter plumage, sent to the British Museum by Sir Alfred Sharpe from Karungwesi close to the Kolongatsi River, which runs westward into Lake Meru.

Its possible occurrence in Uganda rests on one of Dr. Stuhlmann's specimens from Mengo referred to *U. affinis*, Cab.

U. bocagei, one of the best marked species of this genus, is known from Mossamedes and Benguela only, and may be said to be represented by the present form, an almost equally well-marked species to the north of the latitude of the Quanza River. The large size and colouring of the wings shows that *U. traversii* is the northern representative of *U. mechowi*, from which the former differs in the smaller size of the bill, much in the same way as *U. axillaris* and *U. phænicea* differ from *U. zanzibarica*.

Urobrachya bocagei.

Urobrachya bocagei, Sharpe, Cat. Afr. B. p. 63 (1870) *Huilla*; id. Cat. B. M. xiii. p. 226, pl. 9 (1890 pt.) *Benguela*; Shelley, B. Afr. I. No. 332 (1896); Reichen. Vög. Afr. iii. p. 133 (1904 pt.) *S. of Quanza R.*

Male in full plumage. Black, with the exception of the following parts of the wing: lesser wing-coverts chrome yellow, remainder of wing-coverts pale cinnamon; base of primaries buff, which colour shows well in front of the under wing-coverts. "Iris brown; bill whitish grey; tarsi and feet black." Total length 7 inches, culmen 0·6, wing 3·4, tail 3·1, tarsus 1·0. Type, ♂, Huilla (Anchieta).

Bocage's Fan-tailed Whydah inhabits Portuguese West Africa between the Quanza and Cunene Rivers.

The species is at the present time known from Caconda and Huilla only, and according to Anchieta's notes it is called by the natives of the former place the "Quicengo," and of the latter the "Lele." The type which is in the British Museum came from Huilla.

The best character for distinguishing the species from all the other members of the genus is the pale bases of the primaries showing well in front of the under wing-coverts; this character, coupled with the wing-measurement (3·4), readily distinguishes it from its larger near ally, *U. mechowii*, Cab. (*U. phænicea quanzæ*, Hartert).

Genus V. PYROMELANA.

The males only of the Bishop-birds, like the Whydahs, discard, by a spring moult, the modest mottled brown plumage, which is retained throughout the year by the females, and assume a brilliant nuptial dress in which bright red or yellow and velvety black are the most striking features. As in the last two genera, the neck at this season also becomes decorated with a frill of lengthened broad feathers. The tail remains at all times short and nearly square; otherwise the structure closely resembles that of the other genera of the *Viduinæ*.

	<i>Type.</i>
Pyromelana, Bp. Saggio Distr. Met. Anim. Vertebr. p. 141 (1831)	<i>P. orix.</i>
Oryx (non Oken, 1846) Less. Traité p. 437 (1831)	<i>P. capensis.</i>
Euplectes, Swains. Class. B. ii. p. 278 (1837).	<i>P. franciscana.</i>
Hyperanthus, Gistel, Naturg. Thierr. p. ix. (1848)	
Xanthomelana, Bp. Consp. i. p. 447 (1850) .	<i>P. capensis.</i>
Orynx, Reichenb. Av. Syst. p. 76, fig. 28 (1850)	<i>P. capensis.</i>
Taha, Reichenb. Singv. p. 73 (1861)	<i>P. taha.</i>

The genus is confined to Tropical and South Africa.

KEY TO THE SPECIES, FOUNDED ON MALES IN BREEDING PLUMAGE.

- a.* Head and neck entirely black; some bright yellow on the plumage.
 - a*¹. Lesser wing-coverts and lower half of back pale yellow; under tail-coverts black.
 - a*². Bill stouter.
 - a*³. Quills with broad rufous buff inner margins; thighs generally browner.
 - a*⁴. Larger; wing more than 3 inches; lower mandible pale *capensis.*
 - b*⁴. Smaller; bill entirely black *approximans.*
 - b*³. Quills blacker; rarely any trace of buff inner margins; thighs generally entirely black; wing about 3 inches *xanthomelas.*
 - b*². Bill more slender; quills with rufous buff inner edges; thighs mostly brown *phœnicomera.*
 - b*¹. Lesser wing-coverts brown; mantle and lower back orange yellow; under tail-coverts white *aurea.*
- b.* Head and neck never entirely black.
 - c*¹. Lower back, as well as upper and under tail-coverts, yellow.
 - c*². Entire crown yellow.
 - c*³. Neck yellow, forming a broad throat collar *afra.*
 - d*³. Neck black, forming a broad nuchal collar.

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- c*⁴. Smaller; generally some yellow on the flanks *ladoensis*. p. 83
- d*⁴. Larger; sides of body black, with only a patch of yellow near the crop.
- a*⁵. Smaller; wing 2.45, tarsus 0.7; more yellow near the crop *taha*. p. 86
- b*⁵. Larger; wing 2.7, tarsus 0.8; less yellow near the crop *stricta*. p. 86
- d*². Forehead and front of crown orange red; remainder of head black *diademata*. |
- d*¹. Lower back, as well as tail-coverts, never yellow; some red on the neck.
- e*². Sides of abdomen and the under tail-coverts scarlet.
- e*³. Forehead and crown scarlet; entire throat black *nigriventis*. p. 87
- f*³. Forehead and crown black; entire throat red *franciscana*. |
- f*². No red on abdomen nor under tail-coverts.
- g*³. Forehead black.
- e*⁴. Upper tail-coverts red of the same shade as the entire lower back; under wing-coverts pale.
- c*⁵. Larger; wing more than 2.8; front two-thirds of crown black *orix*. p. 88
- d*⁵. Smaller; wing less than 2.7; front half only of the crown black.
- a*⁶. Red on plumage more scarlet *sundevalli*. |
- b*⁶. Red on plumage more yellow *wertheri*. p. 88
- f*⁴. Under tail-coverts brown or blackish.
- e*⁵. Under wing-coverts pale *friederichsoni*. p. 102
- f*⁵. Under wing-coverts black.
- c*⁶. Upper half of throat black *ansorgei*. p. 102
- d*⁶. Chin black; remainder of throat orange red *gierowi* p. 103.
- h*³. Forehead scarlet like the crown; under wing-coverts black *flammiceps*. p. 104

Pyromelana capensis.

- Loxia capensis*, Linn. S. N. i. p. 306 (1766) *Cape of Good Hope*.
Pyromelana capensis, Sharpe, Cat. B. M. xiii. p. 236 (1890); Butler,
 Foreign Finches in Captivity, p. 295, pl. 53 (1894); Shelley, B. Afr.
 I. No. 334 (1896); Nehrkorn, Kat. Eiers. p. 124 (1899) *egg*; Harris,
 Essays and Photographs, p. 103, pl. 24, fig. 2 (1901) *nest*.
Euplectes capensis, Reichen. Vög. Afr. iii. p. 126 (1904).
Loxia nœvia, Gm. S. N. i. p. 845 (1788).
Fringilla phalerata, Licht. Verz. Doubl. p. 22 (1823) *Cape*.

Male in breeding plumage. Black, with the lower half of the back and the least and median series of wing-coverts bright canary yellow; scapulars with broad pale brown edges; greater coverts and quills with very narrow brownish buff edges; under surface of quills black, with broad rufous buff inner edges; under wing-coverts rufous buff, shading into yellow along the bend of the wing; thighs pale brown or with a few black feathers. Iris dark brown; bill black, with lower mandible buff¹; feet pale brown. Total length 6·2 inches, culmen 0·75, wing 3·4, tail 2·5, tarsus 1·0. ♂, 19. 11. 65. Cape Town (Andersson).

Adult female. Upper parts mottled blackish brown, with pale brown edges to the feathers; lesser and median wing-coverts and lower half of the back with yellow edges to the feathers; under surface of wings as in the males. Iris dark brown; bill horny buff; feet pale brown. Wing 3·4, tail 2·1. Cape Town.

Male in winter plumage. Similar to the female in colouring, with the exception of the lesser and median wing-coverts and the lower back, which are bright yellow.

The Cape Black and Yellow Bishop-bird is confined to Cape Colony. The species is abundant about Cape Town, ranging northward to Clan William and eastward into the George District; beyond this limited range it is replaced by a smaller very similarly coloured species, *P. approximans*.

With regard to its habits, Stark writes: "This large Bishop-bird is nearly everywhere common in the Western Colony, and although it seems to prefer the vicinity of marshy

¹ In the British Museum specimens, only one has the lower mandible nearly black.

vleis or streams, it may be frequently found in very dry and arid tracts of country. The male in spring and summer is fond of uttering his harsh notes from the top of a tall bush or reed, and is then very conspicuous in his contrasting glossy black and yellow plumage. The female at this season is not often seen, keeping much to thick reed-beds or bushes, even when not sitting on her eggs. In autumn the old birds of both sexes, together with their young, form considerable flocks, which do not separate until the following spring. The long, loose, yellow feathers of the lower back and rump of the breeding males are erectile, and when the bird is approaching a hen, or is excited, they stand out at right angles to the body, giving him an extraordinary appearance, apparently irresistible to the impressionable female." This mode of courting the hens has also been remarked in the Shrikes belonging to the genus *Dryoscopus*. Stark further remarks: "The song consists of a series of harsh and discordant notes. Although these birds feed largely on grass-seeds or grain, and are accused by the farmers of working havoc with the crops, they devour a considerable number of insects, and feed their young on small caterpillars and grubs. This species nests in September or October. The nest, a domed structure with a side entrance, is woven out of fine grass, and is usually attached by its sides to three or four reed-stems; sometimes it is built in thick bushes at a height of four or five feet. The eggs, almost always four in number, have a pale greenish blue ground colour nearly concealed by spots, blotches and lines of dark brown or slate colour. They average 0.85×0.60 , and are hatched in about fourteen days." With regard to the moult, Layard remarks: "The first thing which changes is the bill; the black commences to show at the tip of the lower mandible, which gradually darkens, from its usual horn colour to the deepest black; before this is accomplished the upper mandible

has begun to blacken, and a few black feathers are visible round the neck; the breast next shows a change, and a feather or two on the back darkens, and thus by degrees the whole bird changes to its splendid black. This transformation begins about July, and is completed in September, which is the nesting season. The moult back again begins in the same manner."

I have here quoted Layard's account of the moult, for it gives a good idea of what takes place in the change from the winter to the summer plumage in all the four closely allied species; but the bird he took his notes from must have been a specimen of *P. approximans*, which is the only one of the four in which the lower mandible changes to black for the breeding season. .

Pyromelana approximans.

Orynx approximans, Cab. Mus. Hein. i. p. 177 (1851) *Kaffraria* (*Berlin Mus.*).

Euplectes capensis approximans, Reichen. Vög. Afr. iii. p. 127 (1904 pt.)

Euplectes capensis, var. minor, Grill, Zool. Anteckn. pp. 10, 22 (1858).

Pyromelana minor, Sharpe, Cat. B. M. xiii. p. 238 (1890); Shelley, B. Afr. I. No. 335 (1896).

Euplectes xanthomelas (non Rüpp.), Butler, Feilden and Reid, Zool. 1882, p. 297 *Natal*.

Similar to *P. capensis* in all its plumages; but differs in being smaller, and in full breeding plumage the males have the lower mandible black and there is little or no brown on the thighs. Total length 5.9 inches, culmen 0.55, wing 3.0, tail 2.5, tarsus 0.9. ♂, 26. 10. 81. Newcastle (Butler).

Female. Culmen 0.5, wing 2.7, tail .19, tarsus 0.75. ♀, 14. 5. 78. Pine-town (T. L. Ayres).

The Natal Black and Yellow Bishop-bird inhabits Eastern South Africa from the Knysna to Inhambane in Mosambique.

In the British Museum there is a fair series of this species, including specimens from the Knysna River (where its range

meets that of *P. capensis*), from Natal, Zululand, the Orange River Colony, and the Transvaal. Mr. W. L. Sclater records it from Inhambane, which is the furthest north I can trace the species. In habits, as in plumage, it closely resembles *P. capensis*.

Major Clarke has kindly informed me that he met with the species near Ingogo, frequenting only the higher slopes of the mountains.

Pyromelana xanthomelas.

Euplectes xanthomelas, Rüpp. N. Wirb. Vög. p. 94 (1835-40) *Abyssinia*; Reichen. Vög. Afr. iii. p. 128 (1904).

Pyromelana xanthomelæna, Sharpe, Cat. B. M. xiii. p. 239 (1890); Shelley, B. Afr. I. No. 333 (1896); Grant, Ibis, 1904, p. 257 *Shoa*.

Male in breeding plumage. Black, with the lower half of the back and the least and median series of wing-coverts bright canary yellow; scapulars with some broad pale brown edges; greater coverts and quills with very narrow brownish buff edges; under surface of quills entirely black or with obsolete brownish buff inner edges; under wing-coverts rufous buff, shading into yellow along the bend of the wing; thighs with or without a few pale brown feathers. Iris brown; bill with the lower mandible greyish horn colour, the upper one darker, sometimes entirely black; tarsi and feet brown. Total length 5.5 inches, culmen 0.55, wing 3.0, tail 2.0, tarsus 0.9. *Abyssinia* (Rüppell).

Adult female. Above mottled blackish brown, with pale brown edges to the feathers; lesser and median coverts and feathers of the lower back with pale edges; under surface of wings as in the males. Iris and legs brown; bill pale horn colour, darker and browner on the upper mandible. Wing 2.7. ♀, Ashanghi (Blanford).

Male in winter plumage. Similar to the female, but differs in having the same amount of yellow on the wings and back as in the full plumaged males.

Rüppell's Black and Yellow Bishop-bird ranges from north of the Orange River and Limpopo into Angola and Abyssinia. In Portuguese West Africa the species has been procured by Monteiro, who found it to be common in the Cambambe district and known to the natives as the "Saca." Anchieta has

collected specimens at Caconda and Quindumbo and gives the names by which they are known at these places, respectively, as "Pinine" and "Quisengo."

I have not seen a specimen from German South-west Africa, but the following notes by Andersson refer to the species: "This is a comparatively scarce bird in Damara and Great Namaque Lands, but is very abundant at Lake Ngami; it sometimes occurs in large flocks in the open country, and is also found in small communities in the neighbourhood of water and in humid situations where it breeds." The measurements he gives are probably taken from the specimens of *P. capensis* he collected at Cape Town, two of which are now in the British Museum.

To the north of the Limpopo River *P. approximans* is probably entirely replaced by the present species, which is represented in the British Museum by two specimens collected by Mr. T. E. Buckley and Mr. Selous in Matabeleland, by Frank Oates's from Inyati and Hope Fontein, by Jameson's from the Umfuli River, and by Sowerby's from Fort Chiquaqua in Mashonaland. There, according to Mr. Sowerby, it is common and mostly seen in the open country. Mr. Guy Marshall found it much more generally distributed than *P. sundevalli*, and not so much attached to the reed-beds, and he writes: "The nest is generally suspended from a twig over water and roughly but strongly built of coarse grass, the seed-heads of which are ingeniously twisted into the interior of the nest, so as to form a deep soft lining. The eggs (0.98×0.66) are of a bluish green colour, handsomely marked with surface blotches of both dark and light brown, and underlying patches of violet grey."

Sir John Kirk met with the species along the Zambesi and Shiré Rivers, and in British Central Africa specimens have been collected at Zomba, Milanje, Buwa, Mkukula, Katunga,

South Angoniland, Malosa and Chanda, and according to Sir Alfred Sharpe, it is known to the natives as the "Chiunga." Capt. Storms procured the species on the western side of Lake Tanganyika, and specimens have been collected by Böhm at Karema; by Fischer at Lindi, in Ugogo and the Usambara countries, along the Pangani River, at Mombasa, Lamu and Susua. Mr. Oscar Neumann met with it at Donje-Nai, Magila, Kikuyu, Moschi and Umbugwe.

Mr. Jackson found the species fairly plentiful in the Teita country and along the hill-sides at Elgeyu, where it was breeding in July and August. "Eggs, two or three. Nest in long grass, and made of fine dry grass, very scantily constructed, with a sort of porch made of the seed-heads of grass." At the Eldoma Ravine in November he met with the species in small flocks and found "the young birds of the year, moulting." He also observed the species near Naiwasha Lake, Nandi, and on Mount Elgon at an elevation of 6,000 feet in December. Its occurrence in Somaliland is known to me only by an immature specimen obtained by Dr. Donaldson Smith at Budda. On the neighbouring border of Abyssinia, Lord Lovat shot a specimen at Waha-Zinzero, and Mr. Pease others at Adis Ababa. In Shoa twenty-seven specimens have been collected by Antinori and Dr. Ragazzi, so it must be abundant throughout that district. The typical specimens were procured in Central Abyssinia by Rüppell. Heuglin met with these Weavers in the highlands of Wagara up to an elevation of 10,000 feet, and in the Upper White Nile district Antinori found them in the country of the Kidj Negroes.

Pyromelana phænicomera.

Euplectes phænicomera, Gray, Ann. v. Mag. Nat. Hist. (3) x. p. 444 (1862) *Camaroons*.

Pyromelana phænicomera, Sharpe, Cat. B. M. xiii. p. 239 (1890); Shelley, B. Afr. I. No 336 (1896).

Euplectes capensis phænicomerus, Reichen. Vög. Afr. iii. p. 127 (1904).

Very similar to *P. xanthomelas* in size and colouring, but differing from it and the other two allied species in the bill being slightly more slender. Lower mandible pale, upper one black; under surface of quill with broad, rather obscure, rufous buff inner edges; thighs mostly pale brown. Male: total length 4.8 inches, culmen 0.6, wing 2.9, tail 1.9, tarsus 0.95. Female: wing 2.9, tarsus 0.85.

Burton's Black and Yellow Bishop-bird is probably confined to the highlands of Camaroons.

Here the species was discovered by the late Sir R. Burton, in the mountains, at 7,000 feet, and Sir Harry Johnston procured a fine series of specimens at elevations ranging from 8,000 to 10,000 feet. More recently Dr. Preuss has met with it at Buea, so that it has not been recorded from a lower elevation in that country than 7,000 feet.

I am inclined to regard the species as a very local form, representing its extremely near ally, *P. xanthomelas*, in the highlands of Camaroons.

Mr. Boyd Alexander refers a female specimen he procured at Kwobia on the Gold Coast to this species, and Swainson, under the heading of *Euplectes capensis* (B. W. Afr. i. p. 180) writes: "We suspect that the full plumage is not acquired even after the first moult; for although the bird is common to Senegal and other parts of Africa, specimens usually seen are in immature plumage." These notes may belong to this species, but it appears to me quite as probable that they refer to *P. xanthomelas*.

Pyromelana aurea.

Loxia aurea, Gm. S. N. ii. p. 846 (1788).

Pyromelana aurea, Sharpe, Cat. B. M. xiii. p. 235 (1890); Shelley, Ibis, 1886, p. 354, pl. 9, fig. 2; id. B. Afr. I. No. 338 (1896); Reichen. Vög. Afr. iii. p. 113 (1904); Bocage, Journ. Lisb. 1904, p. 82 *St. Thomas Isl.*

Euplectes aurinotus, Swains. An. in Menag. p. 310 (1838).

Adult male. Head, throat and breast jet black; hinder half of the neck and nearly the whole of the back bright orange yellow; the ends of the feathers of the lower back broad and square, with narrow black margins; lower rump and upper tail-coverts dark brown with paler edges; wings and tail black, with some buffy brown edges to the feathers; under wing-coverts, inner edges of the quills, thighs, lower abdomen and the under tail-coverts buffy white. Iris; tarsi and feet brown; bill blackish. Total length 5.4 inches, culmen 0.65, wing 2.75, tarsus 0.8. Quanza R. (Brit. Mus.).

The Golden-backed Bishop-bird inhabits the Island of St. Thomas and probably ranges from Gaboon into Benguela.

On the Island of St. Thomas Mr. F. Newton has collected a number of specimens, and informs us that it is known as the "Que-blancana-janilo," so we may presume it to be abundant there. I find very little definite information regarding its occurrence on the African continent. Gujon brought a specimen to Paris in his collection from Gaboon. In the British Museum there are three examples, two labelled "W. Africa" and the other "Quanza River." This latter skin was formerly in my own collection, but I never knew the collector's name. The type of the species, figured by Brown under the name of the "Golden-backed Finch," was supposed to have come from Benguela, and that locality is probably correct, for M. Furtado D'Antas's collection, which was mostly composed of specimens from that country, contained an unlabelled example of the present species.

Pyromelana afra.

Loxia afra, Gm. S. N. i. p. 857 (1788).

Pyromelana afra, Sharpe, Cat. B. M. xiii. p. 241 (1890); Butler, Foreign Finches in Captivity, p. 298, pl. 54 (1894); Shelley, B. Afr. I. No. 246 (1896); Nehrkorn, Kat. Eiers. p. 124 (899) *egg*; Hartert, Nov. Zool. 1901, p. 344 *Niger*; Reichen. Vög. Afr. iii. p. 116 (1904).

Loxia melanogastra, Lath. Ind. Orn. i. p. 394 (1790) *Africa*.

Fringilla carunculacea, Licht. Verz. Doubl. p. 23 (1823) *Senegambia*, Worabée, Vieill. Ois. Chant. p. 52, pl. 28 (1805).

Male in breeding plumage. Upper parts bright canary yellow, with narrow black terminal edges to the feathers of the nape and hind neck; a band across the upper back next to the neck and the scapulars black, with yellow terminal edges to the feathers; wings and tail dark brown, with narrow buff edges to the feathers; under wing-coverts and inner edges of quills isabelline; sides of head, chin, upper and middle throat and the breast black; a broad yellow collar across the lower throat shaded with chestnut in the middle; sides of body and the under tail-coverts bright yellow; thighs buff, tinted with yellow. Iris brown; bill black; tarsi and feet reddish brown. Total length 4.5 inches, culmen 0.5, wing 2.3, tail 1.3, tarsus 0.75. Egga (Forbes).

Adult female. Upper parts mottled blackish brown, with pale brown edges to the feathers; lower back and upper tail-coverts more uniform pale brown; under wing-coverts and inner edges to the quills isabelline; a broad eyebrow and the under parts buffy white, with a shade of brown on the lower throat, crop, sides of the body and thighs; crop and flanks streaked with dark brown; bill pale horny brown. Wing 2.0. ♀, Egga (Forbes).

Males in winter plumage are similar to the female, and the immature birds apparently differ in having no streaks on the crop and flanks.

The western Yellow-crowned Bishop-bird ranges from Senegambia to the Niger, possibly into Benguela.

In Senegambia the species has been obtained by Marche and De Compiègne at Daranka, by Dr. Rendall near Bathurst on the Gambia; Verreaux received it from Casamanse, and in the Bremen Museum there is one from Bissao. It has not been recorded from Liberia, and it is not a common bird on the Gold Coast, for when I was there with Buckley in February and March, we never met with the species, nor was it procured there by Drs. Reichenow and Lühder; so that it may be to some extent migratory, for my resident friend, Mr. John Smith, procured two specimens at Accra after I left the country. These are now in the British Museum along with three from Fantee and one from the Volta River collected by Ussher, who wrote: "Seen at times in large flocks; swamps preferred by them." Mr. Boyd Alexander obtained a single specimen at Karaga (10° N. lat.) in the hinterland, and in Togoland the species has been procured only at Mangu by

Lieut. Thierry. In the Niger district specimens have been collected by Dr. Hartert at Loko, by Forbes at Egga, and by the late Capt. Thompson at Iddah. This latter specimen is probably the one in the British Museum, and the locality, Fernando Po, incorrect, so I have not entered within the range of this species either Fernando Po or the Quanza River, the latter locality resting on a specimen labelled "Quanza (Whiteley)," contained in a small collection procured from Mr. Whiteley, for the Lisbon Museum, in 1876. It is also recorded by Dr. Reichenow (Vög. Afr. iii. p. 117) from "Benguela II. (Mocquerys)." My objection to these three latter-named localities for the species is that it has not otherwise been mentioned from south of the Niger River.

The group to which I have applied the name of Yellow-crowned Bishop-birds comprises four species. The present one is well marked; the other three are scarcely distinguishable at first sight, the only constant character being their size. The smallest is *P. ladoensis*, with a wing measuring about 2·2 inches inhabiting North-east Africa to the north of the Equator; it is sometimes, but not always, easily recognisable by having the sides of the chest strongly marked with yellow, which is never met with in *P. afra* or *P. stricta*, although all the forms have a yellow patch on the sides of the crop. That the yellow on the sides of the chest in *P. ladoensis* is not a constant character is proved by a series of five full plumaged males obtained by Emin at Lado in June and July; in one of these the sides of the chest are uniform black, as in *P. taha* and *P. stricta*, while in two others the flanks are almost entirely yellow, as in the type of *P. ladoensis*, and the other two are intermediate in colouring. In *P. taha* and *P. stricta* there is never any trace of yellow on the sides of the chest beyond the crop-patch; in the former the wing measurement is 2·4 and in the latter 2·7 inches.

Pyromelana ladoensis. (Pl. 29. fig. 1.)

Euplectes ladoensis, Reichen, J. f. O. 1885, p. 218 *Lado*.

Pyromelana ladoensis, Sharpe, Cat. B. M. xiii. p. 244 (1890); Shelley, B. Afr. I. No. 347 (1896); Reichen, Vög. Afr. iii. p. 115 (1904).

Male in breeding plumage. Very similar to *P. taha*, but slightly smaller. It differs often, but not always, in having more yellow on the sides of the body, which in some specimens are entirely bright yellow. "Iris brown; bill black; legs shrimp brown" (Jackson). Total length 4·3 inches, culmen 0·5, wing 2·2, tail 1·4, tarsus 0·65. ♂. 11. 8. 79. Lado (Emin).

Adult female. Similar to that of *P. taha*; eyebrows slightly shaded with yellow; scarcely any dark shaft-stripes near the crop. ♀, 28. 6. 81. Lado (Emin).

The Lado Yellow-crowned Bishop-bird inhabits British East Africa and the White Nile.

The most western range known for the species is the Nile Valley. Emin records it as abundant near Lado, where he procured the type. In the British Museum there are, from this locality, five males in full breeding plumage, shot in June and July. These are most interesting as they show that the amount of yellow on the sides of the chest is variable, and that the small size is the only reliable character by which the species can be distinguished from the South African *P. taha* and the Abyssinian *P. stricta*. In the British Museum there are also—a specimen obtained by Capt. Dunn at the mouth of the Zaref River, and three of Mr. Hawker's from within twenty miles of Fashoda. Mr. Hawker found the species fairly common in flocks, with *P. franciscana* and other allied species, in March and April, when it was in the brown winter plumage.

From British East Africa I have seen two of Mr. Jackson's full plumaged males; they are like *P. taha* in colouring, but both have the wing-measurements only 2·2 inches, so that they belong to *P. ladoensis*, and Dr. Sharpe writes: "This is

a small form of *P. taha* with smaller measurements." Mr. Jackson first met with these birds breeding in small numbers in a swamp two marches south of Doreta in Masailand, and also in the Eldoma Ravine; about the middle of September they were nesting in long grass. At Lake Rudolf Dr. Donaldson Smith procured a male in the brown mottled plumage in December, 1899, which may belong to either *P. ladoensis* or *P. stricta*, as the two forms probably meet in this district.

Pyromelana taha.

Euplectes taha, Smith, Rep. Exped. Centr. Afr. 1836, p. 50 *Kurrichaine*, ♂; id. Ill. Zool. S. Afr. Aves. pl. 7 (1838).

Pyromelana taha, Cat. B. M. xiii. p. 242 (1890); Shelley, B. Afr. I. No. 349 (1896); Nehrkorn, Kat. Eiers. p. 124 (1899) *egg*; Reichen, Vög. Afr. iii. p. 114 (1904).

Ploceus dubius, Smith, Rep. Exped. Centr. Afr. 1836, p. 50 *Kurrichaine*, ♀.

Adult male. Forehead, crown, nape, back, upper and under tail-coverts, sides of abdomen and the vent bright canary yellow; a broad black band across the hind neck joining on to the black sides of the mantle, which latter has the black feathers partially edged with yellow. Wings and tail dark brown, with very narrow brownish buff edges to the feathers; under surface of wings pale dusky brown, with the inner margins of the quills and the coverts brownish buff, fading into white towards the bend of the wing; sides of head, chin, throat, chest and centre of the abdomen jet black, with a patch of yellow on each side of the chest next to the crop. "Iris brown; bill black; tarsi and feet dusky brown." Total length 4.5 inches, culmen 0.5, wing 2.4, tail 1.4, tarsus 0.65. ♂, Transvaal (T. Ayres).

Adult female. Upper parts mottled dark brown, with pale brown edges to the feathers; a broad buff eyebrow; under parts buffy white, shaded with brown on the lower throat, front of chest and flanks, which parts are strongly marked with dark brown shaft-stripes of an angular form on the crop and front of the chest; under wing-coverts sandy buff; quills brown, with buff inner margins. "Iris light brown; upper mandible light dusky brown, lower one paler; tarsi and feet light dusky brown." Length 4.0 inches, culmen 0.5, wing 2.4, tail 1.5, tarsus 0.65. ♀, 12. 6. 79. Potchefstroom (T. Ayres).

Male adult in winter plumage. Exactly like the female. "Bill light

dusky brown with the mandible pale, paler towards the base; tarsi and feet light brown." Wing 2.5. ♂, 18. 6. 79. Potchefstroom (T. Ayres).

The Taha Yellow-crowned Bishop-bird ranges from Benguela and Nyasaland into Natal, but has not been recorded from Namaqualand nor from Cape Colony.

In Portuguese West Africa, according to Anchieta, it is known to the natives at Humbe as the "Changombe," and the species has also been met with in this district at Humpata by Van der Kellen.

In the British Museum there are four males from Ondonga; two of these, collected in November, are in winter plumage, and the others, killed in January, are in breeding dress. Andersson writes: "I do not recollect having met with this bird in Great Namaqualand or in Southern Damara-land, but it breeds in great abundance in Ondonga, and I have also seen specimens from Lake Ngami. It is found in flocks amongst trees, as well as on the reedy banks of rivers and in marshes, where it suspends its nest amongst the tall stalks of reeds and coarse grasses."

The Taha Bishop-bird is apparently absent from the whole of Namaqualand and Cape Colony. The late Sir Andrew Smith procured the type of the species and the type of his *Ploceus dubius* at Kurrichaine in Bechuanaland, and Mr. F. A. Barratt writes: "I have got them all the way up from the Modder River to Potchefstroom, near Bloemfontein, Rustenberg, Pretoria, Nazareth, and I think I saw a few near the Goldfields." In the British Museum there are specimens from the neighbourhood of Durban, a large series from Potchefstroom, two from the Cheringoma district of Mosambique, and several from Fort Lister and the Palombe River in British Central Africa, collected by Mr. Whyte.

With regard to the habits of the species, Stark writes: "In

the Transvaal and some parts of the Orange Free State these little Bishop-birds collect in immense flocks towards autumn and remain together until the following spring, when they break up into smaller companies, many of which appear to migrate, while others remain to breed in small colonies in the swamps or among reeds on the borders of vleis or streams. During autumn and winter these birds feed chiefly on fallen grass-seeds; they are also accused of doing considerable damage to the corn, and especially to millet-crops, but in summer they subsist largely on insects, and feed their young almost entirely on caterpillars and soft-bodied larvæ. Nothing can exceed the beauty of the males in their newly-acquired spring plumage of brilliant yellow and glossy black, and one never tires of watching these feathered gems as they hover with puffed-out plumage over the reeds or grass in which their mates are hidden, looking, as Ayres aptly remarks, 'like balls of black and yellow floating slowly about over the grass.'

"The nests are neatly woven out of long pieces of fine grass in the form of deep purses, or half-closed bags, suspended from three or four reeds, usually over water. The eggs are laid about the end of December in the Northern Transvaal, but not until two months later in the North of Damaraland. They are four or five in number, of a glossy white, dotted and sprinkled all over with very small specks of black or dark brown. They measure on the average 0.73×0.52 ."

Pyromelana stricta.

Euplectes strictus, Heugl. Syst. Uebers. p. 39 (1856, nom. nud.) *Semien*;

Hartl. Orn. W. Afr. p. 129 (1857).

Pyromelana stricta, Reichen. Vög. Afr. iii. p. 115 (1904).

? *Fringilla abyssinica*, Gm. S. N. ii. p. 927 (1788) *Abyssinia*.

Euplectes scioanus, Salvad. Ann. Mus. Genov. 1884, p. 185 *Shoa*.

Pyromelana scioana, Sharpe, Cat. B. M. xiii. p. 241 (1890); Shelley, B. Afr. I. No. 348 (1896).

Pyromelana taha intercedens, Erlanger, Orn. Monatsb. 1903, p. 23 *Arusi*; Reichen. Vög. Afr. iii. p. 115 (1904).

Male in full plumage. Similar to *P. taha*, from which it differs in being larger, and in having the yellow patch on the sides of the chest smaller, sometimes absent. "Iris chestnut; bill black; feet dusky." Total length 5.7 inches, culmen 0.55, wing 2.75, tail 1.75, tarsus 0.75. ♂, 18. 8. 77. Shoa (Antinori).

The Abyssinian Yellow-crowned Bishop-bird inhabits North-east Africa.

The species can best be distinguished from *P. ladoensis*, in all its plumages, by its larger size (wing over 2.5 inches), and apparently it replaces that bird to the east of the Nile, in Abyssinia, Shoa and Somaliland.

Heuglin discovered the species in the Semien district and named it in 1856 *Euplectes strictos*, but it was first described in 1857 by Hartlaub. The type, being in the brown winter plumage, was put aside as undeterminable in the Berlin Museum, until Dr. Reichenow pointed out that from the wing-measurement, viz., 2.64 inches, it must belong to the large form described as *Euplectes scioanus* by Salvadori (1884). Heuglin met with the species in winter at Lake Tana in Abyssinia and among the highlands of Semien and the surrounding country, where it was resident, and usually seen in parties of from three to eight individuals, frequenting the low bushes and hedges of the pasture-land. In August he saw them in the breeding plumage.

In Shoa Antinori found these Bishop-birds apparently breeding at Tuor-Hamesh from June to September, when he procured ten specimens, including the type of *Euplectes scioanus*, all of which were males, and Dr. Ragazzi has obtained the species at Sutta. In Southern Abyssinia Mr. Pease collected two males in winter plumage at Ounji in February,

and remarks that their spring moult takes place in March. His specimens, on account of their large size, I refer to this species, to which certainly belongs *P. taha intercedens* procured in the Arusi district of Gallaland.

Pyromelana diademata.

- Euplectes diadematus*, Fisch. and Reichen. Orn. Centralbl. 1878, p. 264; id. J. f. O. 1878, p. 354, pl. 2, fig. 4 *Melinda*.
Pyromelana diademata, Sharpe, Cat. B. M. xiii. p. 236 (1890); Shelley B. Afr. I. No. 345 (1896); Reichen. Vög. Afr. iii. p. 117 (1904).

Male in breeding plumage. Forehead and front of the crown yellowish scarlet; remainder of the head and the neck black, like the chest; upper back and scapulars yellow, with dusky brown centres to the feathers; remainder of the back, upper and under tail-coverts, sides of the abdomen and the vent bright canary yellow; thighs sandy buff; wings and tail dark brown, with pale edges to the feathers, shaded with yellow on the lesser coverts and margins of the quills; under surface of wings, with the coverts and inner edges of the quills sandy buff. Iris brown; bill black; tarsi shrimp brown, toes darker. Total length 4·5 inches, culmen 0·45, wing 2·35, tail 1·5, tarsus 0·7. ♂, 14. 6. 91. Witu (Jackson).

Adult female. Very similar to that of *P. franciscana*, from which it may generally be distinguished by having a yellow shade on the edges of the quills and by the bill being slightly shorter and stouter. Wing 2·2.

Adult male in winter. Similar in plumage to the female and also with the bill pale horn colour, rather darker brown towards the culmen.

The Fire-fronted Bishop-bird inhabits East Africa between 6° S. lat. and 1° N. lat., from Pangani to Lake Baringo.

Fischer found these birds common in the cornfields near the town of Pangani, and known to the natives at Melinda and on Lamu Island as the "Mbara."

Sir John Kirk collected six specimens in winter plumage at Lamu, which are now in the British Museum, where they were referred to *P. ladoensis*, which, when in the dull brown plumage, they much resemble in colouring as well as in size; one of these specimens has a trace of the red frontal patch

and all have the bill shorter and stouter than in *P. ladoensis*, which latter species probably never ranges so far eastward.

Mr. Jackson has procured a nearly full plumaged male in the same district at Jipi in September, 1885, where he found these Bishop-birds common in the ricefields, and also at Witu. Further inland he met with the species in full plumage at Teita in April, and plentiful in the long grass at the river Tigrish near Njemps, towards the southern end of Lake Baringo, in July. This is the most northern and western range known to me for the species.

Pyromelana nigriventris.

Euplectes nigriventris, Cass. Proc. Philad. Acad. 1848, p. 66 *Zanzibar* ;
id. Journ. Philad. 1849, p. 242, pl. 31.

Pyromelana nigriventris, Sharpe, Cat. B. M. xiii. p. 230 (1890); Shelley,
B. Afr. I. No. 344 (1896); Nehrkorn, Kat. Eiers, p. 124 (1899) *egg* ;
Reichen. Vög. Afr. iii. p. 125 (1904).

Male in breeding plumage. Forehead, crown, back, upper and under tail-coverts and sides of lower abdomen scarlet, the mantle slightly duller and more rufous; wings and tail dark brown, with narrow pale edges to the feathers; under wing-coverts and inner margins of the quill rufous buff; chin, throat, chest and centre of abdomen jet black. "Iris brown; bill black; tarsi and feet brownish flesh colour" (Fischer). Total length 4.2 inches; culmen 0.5; wing 2.2; tail 0.65. Mtoni (Emin).

Female. Upper parts mottled blackish brown, with pale brown edges to the feathers; a broad buff eyebrow; under parts white, shaded with brown on the sides of throat, lower throat, front and sides of body, and some dark shaft-stripes towards the crop and on the flanks.

Male in winter. Similar in plumage to the females.

The Black-throated Fire-backed Bishop-bird inhabits East Africa between the Zambesi and the Equator, east of 35° E. long.

The most southern range known to me for this species is Quilimane on the Mosambique coast, where Dr. Stuhlmann procured five specimens, so it is apparently abundant in that

country. He also collected specimens at Mbusini in Usegua, and at Zanzibar, where it is known to the natives as the "Baniani." Fischer records it as abundant throughout the coast-countries from Liudi to Lamu. Emin met with it at the Kingani River, and Mr. Jackson at Witu, which is the furthest north that I can trace the species. The type came from Zanzibar, and in this district Fischer procured several nests and eggs. The nest, according to him, much resembles that of *P. flammiceps*, and is of a lengthened oval shape with the opening at one side, constructed of coarse grass lined with fine grass, and attached, some five or six feet from the ground, to the reeds or thick covert in marshy places. The eggs in a nest are two, or sometimes three, in number; they are pale blue, occasionally spotted with dusky greyish brown, and their average measurement is 0.68×0.52 .

Pyromelana franciscana.

- Loxia franciscana*, Isert, Schrift. Ges. nat. Fr. Berlin, 1789, p. 332, pl. 9.
Pyromelana franciscana, Sharpe, Cat. B. M. xiii. p. 233 (1890); Butler, Foreign Finches in Captivity, p. 308, pl. 57 (1894); Shelley, B. Afr. I. No. 341 (1896); Nehr Korn, Kat. Eiers. p. 124 (1899) *egg*;
 Grant, Ibis, 1904, p. 257 *Shoa*; Reichen. Vög. Afr. iii. p. 122 (1904).
Euplectes franciscana, Heugl. Orn. N. O. Afr. pl. 48, figs. 4, 5 (1871) *eggs*.
Loxia ignicolor, Vieill. Ois. Chant. p. 92, pl. 59 (1805).
Pyromelana franciscana pusilla, Hartert, Bull. B. O. C. xi. p. 71 (1901)
L. Stephanie.

Male in breeding plumage. Top and sides of head, chest and abdomen velvety black; neck, back, scapulars, upper tail-coverts, cheeks, chin, throat, under tail-coverts and sides of abdomen scarlet; wings dark brown, with narrow pale brown edges to the feathers, and the under surface tawny buff, with a large portion of the quills dusky brown; thighs tawny buff. "Iris dark brown; bill black; tarsi and feet brownish flesh-colour." Total length 4.8 inches, culmen 0.45; wing 2.4; tail 1.4; tarsus 0.7. ♂, 22. 6. 01. Accra. (Alexander).

Female. Upper parts mottled, blackish brown, with pale brown edges

to the feathers; a broad buff eyebrow; under parts white, shaded with brown on the sides and lower half of the throat, front and sides of breast; a few dark brown stripes on the sides of the crop. Iris brown; bill and legs pale brown. Total length 4.2 inches; culmen 0.45; wing 2.3; tail 1.4; tarsus 0.75. ♀, 4.3. 01. Tadejemulka (Pease).

Male in winter. Similar in plumage to the female.

In full plumaged males the upper tail coverts reach beyond the end of the tail.

The Red-throated Bishop-bird inhabits Northern Tropical Africa between 22° N. lat. and the Equator.

The species is fairly abundant throughout its range, which is limited in West Africa to Senegambia and Guinea. From this part of Africa it is well represented in the British Museum by specimens from Senegambia, Gold Coast, and the Volta and Niger Rivers. The spring and autumn moults take place here about April and August, and it breeds during the rainy season.

Dr. P. Rendal writes: "Builds a woven grass nest and lays two or three eggs of a deeper blue than those of our Hedge Sparrow. The nest has a hole in the side, and is built in a tall weed of the pea family—almost invariably. The males lose their red feathers so gradually that all stages intermediate with the females are to be seen in August."

According to the late Dr. Gordon: "Fantee name 'Alchim-butukra.' Have made their appearance since the commencement of the rainy season in great abundance in small flocks." I think he must have overlooked this bird when it was in the brown plumage, for during my visit to the Gold Coast with T. E. Buckley, we found it to be common in flocks frequenting the more open country in February and March, when the males were all in the brown winter plumage, which closely resembles that of the female. At Accra, in June, Mr. Boyd Alexander found them in full breeding plumage. In the Niger district Forbes met with the species in full plumage in August at Rabba and Abuschi, and according to Dr. Hartert

it was very common on the higher ground of the interior, both on the Niger and Benuë Rivers, and he took a nest with eggs in September at Kaschia.

It is generally distributed over Central and North-east Africa from 22° N. lat. on the Nile (from whence it has been recorded by Heuglin) to the Equator. It is represented in the British Museum by specimens from Uganda, Lado, Redjaf, Fashoda, Senaar, Kordofan, Omdurman, Shendi, Shoa, Southern Abyssinia, Lake Baringo, Eldoma Ravine, and from Somaliland. I can distinguish no local forms and agree with Dr. Bowdler Sharpe (Ibis, 1902, p. 119) that *P. franciscana pusilla*, Hartert, "will not stand, even as a subspecies," the type of which was procured at Lake Stephanie by Dr. Donaldson Smith, who procured other specimens at Barri in Central Somaliland.

Speke met with large flocks of these Bishop-birds in the cornfields of Unyoro, and Dr. Ansorge found them near the Rafu River in that country and at Kibero. Mr. Jackson has procured specimens at Elgeyo in the Kamassia Mountains and at the Eldoma Ravine, which is the most southern range known to me for the species. In this district specimens have been collected by Lord Delamere at Lake Baringo. In Somaliland Mr. Gillett procured the species at Bodeweno, and Mr. Lort Phillips writes: "Only plentiful on the Webbe Shebeyli in the cornfields, where it assembles in large flocks of from fifty to one hundred." In Southern Abyssinia it was also met with in large flocks by Lord Lovat, who shot specimens at Hado, Lake Harar-Meyer and Lake Chercher, and Mr. Pease collected others at Goraboutha, Tadejemulka and Filwa. These were in the winter dress from December to February, but in the early part of March they began to assume the bright breeding plumage. In Shoa Antinori procured specimens in May and September, Dr. Ragazzi others in April and August, and Mr. Degen met with them there in July. Before

and after the breeding season these Bishop-birds assemble to feed in flocks, at times in company with other Weaver-birds; but I much doubt their being migratory, as Heuglin suggests; for, according to his notes, they arrive in North-east Africa in June and July, where he met with them in Takah, Senaar, Kordofan, and Nubia, to as far north as 22° N. lat., and found them very plentiful in the lowlands of Abyssinia up to 7,000 feet. He also mentions them as leaving their winter quarters in the Upper White Nile district between October and December.

Mr. Hawker met with them in flocks at Fashoda in April. At about the same time of the year Mr. Witherby found them, all in winter plumage, assembled in a considerable flock near the river within a few miles of Khartoum. The Hon. N. C. Rothschild and Mr. Wollaston write: "This bird frequents the fields of millet or 'dhurru,' on the seeds of which it feeds; it is not common at Shendi, but a good many individuals were seen a few miles south, while at Wad-Habushi, about fifty miles south, it was exceedingly abundant."

According to the notes kindly forwarded to me by Mr. A. L. Butler, "This bird is universally known to Europeans in the Soudan as the 'Dhurra bird,' and is very abundant at Khartoum and Dongola. The nuptial plumage, out here, lasts from August to January. I met with them in the brown plumage at Gedaref in June, and on my return to the Soudan from Kawa, September 17, 1902, most of the males were in full plumage, though a few were still in transition. The red plumage disappeared in January, having previously lost much of its brightness. I found a pair breeding in a thick Sont-tree near Khartoum, October 20, but the tree was so thorny that I could not reach the nest. The males in the breeding season are a most beautiful sight, dozens of them collecting together on a small patch of green

dhurra. They have a pretty habit of rising and hovering with a jerky flight over the sea of glossy green dhurra blades, with their feathers puffed out until they look like balls of scarlet and black velvet; this action being accompanied with a loud 'purr-rr-purr-rr' of the wings. They nearly always puff themselves out in this manner when approaching a female. I have seen beautiful head-dresses made out of their plumage by natives of the Upper White Nile, the black and scarlet feathers being set alternately in broad rings."

With regard to the moult in captivity, Dr. A. G. Butler purchased one autumn five males of *P. franciscana* and six of *P. afra*, and writes: "All these birds continued to develop their nuptial plumage up to the first frosts, when the change was arrested and the bright colouring gradually receded from the feathers, so that in about six weeks the birds had all resumed their winter plumage.

"Several views have been put forward to account for the change of plumage in birds, but when the colouring gradually comes and again recedes from the same feathers, the casting of a disguising film will not account for the second operation.

"In *Pyromelana* the change of plumage is very slow; the feathers daily gain in intensity, the pale buff of the under parts getting scarcely perceptibly deeper, until at length the velvet black and the fiery orange in *P. franciscana* appear as mere spots or shaft-streaks, which gradually expand fan-wise towards the outer fringes of the feathers. This spotting, however, is very uneven, some feathers being developed in advance of others, so as to give the bird a very patchy appearance. In the bright yellow and black plumage of *P. afra* this is even more noticeable.

"At the change of plumage the flank-feathers and upper tail-coverts are moulted out, being replaced by long soft

feathers, which droop over and almost hide the tail; but none of the feathers of the head, back, breast and belly are lost, they simply undergo a gradual change of colour."

The late Mr. J. H. Gurney, in 1882, gives an interesting account of a specimen of *P. franciscana* he had as a cage-bird, which, in 1880, acquired its gorgeous breeding dress fully and completely, but when this was lost it was exchanged for a decidedly melanistic one. In the following year it again assumed the ordinary bright breeding plumage without any abnormal coloration, but on losing it, once more became melanistic.

Euplectes.

Pyromelana orix.

Emberiza orix, Linn. S. N. (x.) p. 177 (1758); S. N. (xii.) i. p. 309 (1766).

Pyromelana orix, Sharpe, Cat. B. M. xiii. p. 230 (1890); Butler, Foreign Finches in Captivity, p. 304, pl. 56 (1894); Shelley, B. Afr. I. No. 343 (1896); Whitehead, Ibis, 1903, p. 224 *Orange R.*; Shortridge, Ibis, 1904, p. 178 *Pondoland*; Reichen. Vög. Afr. iii. p. 120 (1904).

Euplectes pseudoryx, Reichenb. Singv. p. 56, figs. 200, 202 (1863).

Euplectes edwardsi, Reichenb. t. c. p. 57.

Male in breeding plumage. General plumage vermilion, of a slightly duller and more rufous shade on the mantle; scapulars with broad angular blackish centres; front two-thirds of crown, sides of head, chin, upper throat, chest and middle of abdomen black; wings and tail dark brown, with narrow pale edges to the feathers; under wing-coverts, inner margins of the quills and the thighs rufous buff. "Iris dark brown; bill black; legs light brown." Total length 5.1 inches, culmen 0.6, wing 3.0, tail 1.7, tarsus 0.8. Transvaal (T. E. Buckley).

Female. Upper parts mottled blackish brown, with pale brown edges to the feathers; a broad buff eyebrow; under parts white, shaded with brown on the sides and lower half of the throat, and front and sides of body, most of which feathers have obscure darker shaft-stripes. Wing 2.65, ♀, 18.6. 81. Newcastle (E. A. Butler).

Adult male in winter. Similar to the female, but with the stripes on the throat and body more strongly marked. Wing 2.75. ♂, 21. 7. 75. Lower Umgeni R. (T. L. Ayres).

The Cape Red Bishop-bird ranges from Angola and the Limpopo River to the Cape of Good Hope.

In the Lisbon Museum there is a specimen labelled "Angola (*Toulson*)," and several from Catumbella, Capan-gombe, Huilla and Humbe, collected by Anchieta, who informs us that it is known to the natives at Catumbella as the "Quisengo." In Western South Africa, according to Andersson, "This very handsome bird is abundant at Lake Ngami and in Ondonga, and though rarer in Damara and Great Namaqualand, it is found in those countries also, congregating in small communities and frequenting moist situations, where it breeds in January and February.

"In Ondonga its nest may be found in those months in almost every palm bush; the nest is very pretty, airy and graceful, somewhat oval in form, and composed of threads torn from the edges of the branches of young palms. Some nests are thickly lined, whilst others are quite bare within; in the latter the eggs may be seen from the outside; but notwithstanding the seeming looseness with which the threads are interwoven, the apparently frail structure is in reality very strong. The eggs are of a bluish colour, and from three to four in number."

In the British Museum the species is represented by specimens from the Kuil River in Cape Colony, Eland's Post, Bloemfontein, the Umgeni River near Durban, Weenen, Maritzburg and Potchefstroom; the other specimens referred to this species in the "Catalogue of Birds," all belong to *P. sundevalli*.

According to Layard, it confines itself to certain favourite spots, and near Cape Town the only place known to him for it was the swampy ground near the Royal Observatory; but he calls it not an uncommon bird throughout Cape Colony, and Mr. Barratt found it similarly distributed over the Orange

River Colony to Pretoria in the Transvaal. In Natal Butler, Feilden and Reid found it to be common, and also universally distributed. Specimens of the male bird were obtained in all stages of transition from winter to summer plumage in October and November. They were found breeding in considerable numbers along the reedy streams near Maritzburg; some of the nests contained eggs and others young birds in December, and on returning to the same place in the following March they were again breeding, evidently for a second time. "The nests are constructed of grasses, domed, with a side entrance, and usually placed among reeds, on the stems of which they are formed, about four or five feet from the ground-level, and at the water's edge."

Stark remarked that the brilliancy and depth of colour of the plumage of the males in summer increases with age. It is seldom found at any great distance from marshy ground or the reed-overgrown borders of vleis or rivers. It appears to be a resident in the localities in which it occurs. In winter these birds assemble in flocks, sometimes numbering thousands of individuals, and frequently feed in company with other Finches on seeds and grain. At night they roost in extensive reed-beds or among bushes. In summer the cocks may be seen slowly gliding over the reed-beds with a curious hovering flight, during which the body is kept very erect, the plumage of the lower back puffed out, while that of the neck is erected into a frill, looking, in the blazing sunshine, like flames of fire slowly drifting to and fro. At times they dance about in front of the females with puffed-out plumes, turning from side to side, as if to show off the full beauty of their plumage.

"The eggs, four or five in number, are somewhat pyriform in shape and of a uniform pale greenish blue colour. They average 0.82×0.60 . The female sits for fourteen days. The young are at first fed on small caterpillars and other insects, including the larvæ of mosquitoes."

Pyromelana sundevalli.

Euplectes sundevalli, Bp. Consp. i. p. 446 (1850) *S. Afr.*

Pyromelana sundevalli, Alexander, Ibis, 1899, p. 567 *Zambesi*.

Pyromelana nigrifrons, Böhm, J. f. O. 1884, p. 177; 1886, pl. 2, fig. 2
Karema; Sharpe, Cat. B. M. xiii. p. 233 (1890); Shelley, B. Afr. I.
No. 342 (1896); Reichen. Vög. Afr. iii. p. 122 (1904).

Pyromelana oryx (non Linn.), Sharpe, Ibis, 1900, p. 110 *Mapicuti*;
Marshall, t. c. p. 241 *Mashona*.

Male in breeding plumage. General colour bright scarlet, of a duller and more rufous shade on the mantle; scapulars with broad angular blackish centres; the black of the head is restricted to the front half of the crown, sides of head, sides, and occasionally the centre of the chin; chest and middle of abdomen black; wings and tail dark brown, with narrow pale edges to the feathers; under wing-coverts, inner margins of the quills, and the thighs rufous buff. Iris dark brown; bill black; legs light brown. Total length 4·7 inches, culmen 0·5, wing 2·5, tail 1·5, tarsus 0·75. *Zambesi* (Kirk).

Females and males in winter. Similar to those of *P. franciscana*. Wing 2·5. ♀, 18. 1. 99, Zumbo (Alexander); ♂, Cheringoma District (Cavendish).

The Red Bishop-bird inhabits Eastern Africa between the Limpopo River and Victoria Nyanza.

The type was from Wahlberg's collection, labelled "Caffraria," and was described by Bonaparte as similar to *P. oryx*, but smaller.

The most southern range known to me for the species is Mapicuti in the Cheringoma district near Beira, in about 20° S. lat., where it has been procured by Mr. Cavendish. A specimen obtained by the late Mr. F. Oates, at Hope Fontein near Gulubeweyo, is in the British Museum, and belongs to this species, so that this is doubtless the form met with in Mashonaland, where, according to Mr. Guy Marshall, it is "very local, but plentiful wherever large reed-beds are found. There are few prettier sights than the male in his courting flight, floating with feathers puffed up and quivering wings

over the green reeds, a living ball of black and scarlet plush. The stomach contained seeds, small beetles, and an occasional spider."

Sir John Kirk, during the Livingstone Expedition, collected a number of these birds at the Zambesi, and wrote: "The nests of the different *Euplectes* are found in colonies, hanging from the extremities of the branches of such trees as the Acacia, having delicate twigs; a position overhanging water is usually chosen. The nest is commonly suspended by a long peduncle of the same material. The opening is tubular and directed downwards. Besides breeding-nests, there are generally a number of a different construction in which the birds may rest. These frequently have two openings, or consist of a ring of woven grass."

Mr. Boyd Alexander, during his journey up the Zambesi, procured a good series, including one from the Rufue River, which is the most western range known for the species. With regard to its habits he writes: "This is the most plentiful of all the Weavers, being common everywhere, and it appears to be equally at home among the huts of a native village, in reed-beds, or in thick woods. Throughout the greater portion of the year it is found in large flocks, whose numbers increase at times of feeding, in the morning and evening. With them safety lies in numbers, since they are constantly being preyed upon by Hawks (*Accipiter minullus*) and the Black-shouldered Kite (*Elanus cæruleus*) during the daytime, and the Red-legged Gos-hawk (*Melierax gabar*) in the evening, when they resort to the reed-beds for the night. When a flock travels over a region where an attack is likely a strong and rapid flight close to the ground is resorted to; but they do not always get off scot-free, for I have more than once seen a flock completely routed and one of their number borne away. In one locality the flocks are often considerable,

and there is no better time to estimate their numbers than towards evening, when they journey to the reed-beds. An accustomed track is always taken; flock after flock will go 'swishing' past in almost bewildering succession to some reed-bed ahead, into which they pitch like so many showers of bullets. Soon among the green cover of the fish-cane there will be hosts of Weavers making great chatterings, and when there is a pool close by they travel to the confines of the fish-cane and commence to drop down to the water to take their last drink for the night, a continuous string of birds circling down and up without interruption, like an endless chain on a wheel. It is a pretty sight. There is neither bickering nor quarrel, each bird has a chance to dip its beak into the water, and only when the last bird leaves the pool does the chattering or singing within the reed-beds cease. Then the confused rustling of innumerable wings takes place, telling the observer that these large flocks are retiring into the depths of the green cover for the night. From the winter plumage to the brilliant summer-dress the change is slow, and during this period all stages of plumage may be observed, which impart to a flock a very mottled and curious appearance. By the end of January the males have completely assumed their remarkable breeding-dress, but their numbers are small compared with the females and the birds of the previous season, who still keep the brown plumage, and the flock that awhile back was nothing more than a study in brown becomes glorious with the gorgeous liveries of the male birds. It is a sight worth seeing to behold a flock go past you, twisting and turning in the bright sunlight across the wide mealee-fields, bristling with the fresh green blades, then on to the dark green cover of a reed-bed, whose lowest depths they penetrate and fill with a soft, confused chattering, for all the world like a fugue in monotone, while now and again the males climb to the top

of the tallest reeds, their look-out posts, and the setting sun glancing on their plumage seems to turn each reed-head into a brilliant ruby."

In the Nyasa district the species has been met with by Sir John Kirk and Dr. P. Rendall in the Shiré Valley. Mr. Whyte procured several males in breeding plumage in February at Mpimbi, and found them in winter plumage at Zomba in July and September. At Karema, on the eastern shore of Lake Tanganyika, Böhm procured the type of *P. nigrifrons* and found the species abundant in the Kawendi country, often in company with *P. xanthomelas* dotting the high grass with their bright breeding plumage. Fischer obtained *P. sundevalli* at Kagehi on Speke's Gulf.

Pyromelana wertheri.

Pyromelana wertheri, Reichen. Orn. Monatsb. 1897, p. 160 *Wembere*; id. Vög. Afr. iii. p. 122 (1904).

Pyromelana nigrifrons, Hartert, Nov. Zool. 1900, p. 41 *Kasesi, Fort George*.

Male in breeding plumage. Very like *P. sundevalli*, differing only in the red parts being paler and of a more orange shade. Forehead, front of crown and sides of head black; chin mottled with black; remainder of the head and the neck scarlet shaded ochreous buff, the feathers fading into white towards the base and slightly mottled with bright scarlet at their ends; hinder neck and mantle yellowish rufous, passing into scarlet shaded orange on the lower back and upper tail-coverts; a few black shaft-stripes on the scapulars; wings and tail blackish brown, with pale brown edges to the feathers; under wing-coverts and inner edges of the quills isabelline buff; chest and centre of abdomen velvety black; sides of abdomen, thighs and under tail-coverts tawny buff washed with reddish orange. Total length 4·8 inches, culmen 0·55, wing 2·8, tail 1·7, tarsus 0·8. Toro (Jackson).

Werther's Bishop-bird inhabits the Victoria Nyanza district.

In the Wembere district of Central German East Africa Lieut. Werther obtained the type. A similar example

has been obtained by Mr. Jackson at Toro during the return journey from the Ruwenzori Mountains to Victoria Nyanza, and specimens have been obtained by Dr. Ansorge at Kasesi in Toru and at Fort George on the Albert Nyanza, which have been referred to the last species by Mr. Hartert, so *P. wertheri* is possibly only a pale variety of *P. sundevalli*, but two full plumaged males procured by the late W. G. Doggett in Uganda have yellowish rufous mantles, which is perhaps the most constant character for this species.

Pyromelana friederichseni.

Euplectes friederichseni, Fisch. and Reichen. J. f. O. 1884, p. 54
Nguruman.

Pyromelana friederichseni, Sharpe, Cat. B. M. xiii. p. 235 (1890); Shelley, B. Afr. I. No. 339 (1896); Reichen. Vög. Afr. iii. p. 117 (1904).

Type. Front half of the head, ear-coverts and upper half of the throat uniform black like the chest; hinder half of head, neck, back and lower throat fire-red; wings, upper tail-coverts and tail black, with pale brown edges to the feathers; under wing-coverts, thighs, vent and under tail-coverts isabelline. Iris brown; bill black; tarsi and feet horny brown. Total length 6 inches, culmen 0.6, wing 3.2, tail 2.5, tarsus 0.9. ♂, 24. 6. 83. Nguruman (Fischer).

Friederichsen's Red Bishop-bird inhabits Masailand.

The species is, I believe, known only by two specimens, the type discovered by Fischer at Nguruman in Masailand, about 2° S. lat., 36° 20' E. long., and a specimen recorded by M. Oustalet from Bouré near Witu.

Pyromelana ansorgei.

Pyromelana ansorgei, Hartert in Ansorge's Under Afr. Sun. p. 344, pl. 2, fig. 2 (1899) *Masindi*; Reichen. Vög. Afr. iii. p. 117 (1904).

Pyromelana xanthochlamys, Sharpe, Bull. B. O. C. xiii. p. 10 (1902)
Hoima.

Type. General plumage jet black; hinder half of the crown and the neck orange red, fading into yellow on the front half of the interscapular region; some brownish buff edges to the feathers of the scapulars, lower back, wing and tail (remains of the winter plumage, these parts being entirely black in the type of *P. xanthochlamys*, Sharpe). The black throat extends nearly to the crop, and has the lower half compressed by the orange red of the neck, which extends across only the lower throat and crop; abdomen and under tail-coverts mottled, with brownish buff edges to the feathers; under surface of wings jet black, with a trace of brown on the axillaries and inner coverts. Iris brown; bill black, inclining to brown on the under part of the lower mandible; tarsi and feet deep reddish brown. Total length 5·9 inches, culmen 0·65, wing 3·4, tail 2·5, tarsus 1·0. ♂, 17. 6. 97. Masindi in Unyoro (Ansorge).

Ansorge's Bishop-bird inhabits the Equatorial Lake district to the north-west of Victoria Nyanza.

The type of the species, a male in breeding plumage, was discovered by Dr. Ansorge in June, 1897, at Masindi in Unyoro. A second specimen, the type of *P. xanthochlamys*, Sharpe, is in Mr. Jackson's collection from the Ruwenzori range, at Hoima. The present species is nearly allied to *P. gierowi*, known from the type only. These two species agree well with *P. flammiceps* in size and in the black colouring of the under surface of the wings, so there can be little doubt that the females and males in winter plumage of the three species closely resemble each other.

Pyromelana gierowi.

Euplectes gierowi, Cab. J. f. O. 1880, pp. 106, 203, pl. 3, fig. 2 *Quango*.
Pyromelana gierowi, Sharpe, Cat. B. M. xiii. p. 235 (1890); Shelley,
B. Afr. I. No. 340 (1896); Reichen, Vög. Afr. iii. p. 118 (1904).

Type. Forehead, front half of crown, cheek, ear-coverts, chin, entire wings, tail and chest uniform black; remainder of the head, neck and throat scarlet shaded yellow; upper and middle back golden yellow; rump and upper tail-coverts blackish brown, with paler brown edges to the feathers; axillaries light brown; thighs, vent and under tail-coverts buff, the latter with blackish centres. Iris brown; bill black; tarsi and

feet brown. Total length 6 inches, culmen 0.65, wing 3.0, tail 2.0, tarsus 0.95.

Gierow's Bishop-bird inhabits Angola.

The type was sent to Berlin in one of Mr. Schütt's collections from Angola, where it was procured by Mr. Gierow in the interior near the Kuango River, in about 7° S. lat. and 18° E. long. It belongs to the same group as *P. ansorgei* and *P. flammiceps*, which are, all three, readily distinguished by the black under wing-coverts from the other members of the genus.

Euplectes

Pyromelana flammiceps.

- Euplectes flammiceps*, Swains. B. W. Afr. i, p. 186, pl. 13 (1837) *Senegal*.
Pyromelana flammiceps, Sharpe, Cat. B. M. xiii. p. 228 (1890); Butler, Foreign Finches in Captivity, p. 295, pl. 55 (1894); Shelley, B. Afr. I. No. 338 (1896); Nehrkorn, Kat. Eiers. p. 124 *egg*; Reichen, Vög. Afr. iii. p. 118 (1904); Bocage, Journ. Lisb. 1904, p. 83 *St. Thomas Isl.*
Loxia (Euplectes) petiti, Des Murs in Lefebvre's Voy. Abyss. p. 112, pl. 10, fig. 1 (1850).
Euplectes "craspedopterus, Schiff." Bp. Consp. i, p. 446 (1850) *Abyssinia*.
Euplectes flaviceps, Hartl. P. Z. S. 1863, p. 106 (*laps. cal.*).
Euplectes pyrroazona, Heugl. J. f. O. 1864, p. 247 *Abyssinia*.

Male in breeding plumage. Crown, entire neck and lower half of back orange scarlet; mantle and upper tail-coverts more rufous; sides of head, chin, upper throat and often the front of the forehead jet black; scapulars scarlet shaded fawn-colour with black angular centres; wings and tail black, both above and below, with a trace of buff margins to the centre tail-feathers, secondaries and ends of the median wing-coverts; breast velvety black, with the sides of the abdomen fawn-colour; thighs and under tail-coverts rufous buff. Iris brown; bill black; tarsi and feet reddish brown. Total length 5.2 inches, culmen 0.6, wing 3.0, tail 1.7, tarsus 0.85. Sierra Leone.

Adult female. Upper parts mottled blackish brown, with pale brown edges to the feathers; under surface of the wing uniform dusky black; a broad buff eyebrow; cheeks and ear-coverts pale brown, and very slightly streaked, like the sides of the neck; chin, upper throat and centre of the breast white, shading into buffy brown on the lower throat, front and sides of breast, which parts are striped with dark brown centres to the feathers; thighs and under tail-coverts more uniform rufous buff. Iris brown; bill,

tarsi and feet brownish flesh colour. Wing 2.5, tail 1.5, tarsus 0.75. Connor's Hill (Shelley).

Adult male in winter plumage. Similar in colouring to the female, but with the wings blacker. ♂, 26. 2. 72. Abokobi (Shelley).

The Fire-crowned Bishop-bird inhabits Tropical Africa generally between 17° N. lat. and 18° S. lat., ranging from Senegal into Benguela on the west, and from the Zambesi into Abyssinia in Eastern Africa.

The type of the species came from Senegambia. Sir A. Moloney and Dr. P. Rendall have procured specimens at the Gambia; Verreaux from Casamance; Beaudouin at Bissao; Bulger and Fea on Bulama, one of the Bissagos Islands; and in the British Museum there is a specimen from Sierra Leone. Demery obtained specimens at the Sulymah River in Liberia, and Mr. Büttikofer records them as tolerably common in the vicinity of Robertsport, at Grand Cape Mount, on the grassy plains behind Schieffelinsville, at Oldfield, and on Gallilee Mountain, and according to his notes, the adult males frequent the tops of the canes, where they remain for hours, quite isolated from other birds, and even from their females and young ones, being apparently proud of their brilliant plumage, as they are indefatigable in exposing it in the most obvious manner.

These Bishop-birds are abundant throughout our Gold Coast possessions and in Togoland, where the males assume the bright red plumage for the breeding and rainy season, which lasts from the latter part of April to the end of August. They frequent the more open country, often in flocks, accompanied by *P. franciscanus*. Drs. Reichenow and Lühder found them breeding abundantly on the plains of Accra, and with young in August. The nest is of the same oval form as with members of the genus *Hyphantornis*, but is hung singly from the high grass and constructed of fine grass. Mr. Boyd

Alexander writes: "During our stay at Gambaga, from January to May, this species was not observed, although Capt. Giffard obtained a male specimen there in August." Around Cape Coast and Accra he found the species, in breeding plumage, plentiful in the damp reedy localities, which situations they appeared to leave after the nesting season.

In the Niger district the species has been met with by Falkenstein at Bonny; by Forbes, in full plumage in August, at Abutchi; and by Dr. Hartert at Loko on the Benuë, where he found it fairly abundant. In Camaroons Dr. Zenker procured the species at Jaunde, where it was known to the natives as the "Kopisong," and it has been recorded from St. Thomas Island. In the British Museum there are specimens from Gaboon, and from Landana on the Loango Coast. Along the course of the Congo River my late friend, Jameson, while with the Stanley Expedition, met with the species, and other specimens have been collected here by Kellen at Boma, by Bohndorff at Kassango, and by Capt. Storms during his expedition up that river to Lake Tanganyika. There is a specimen from Angola, obtained by Furtado d'Antas, in the British Museum. Welwitsch found it known to the natives at Galungo-alto as the "Saco," and it has been recorded as abundant by Mr. Monteiro at Bembe and Cambambe, and by Anchieta at Quissange.

At the Zambesi River, towards Zumbo, Mr. Boyd Alexander found these Bishop-birds "not so common as *P. sundevalli*, from which they can be readily distinguished in flight by their larger size and blackish wings. The song of the male is peculiar—a running voluble 'tiz,' uttered from the depths of some reed-bed, being especially loud after rain." Sir John Kirk in 1864 recorded the species from the Zambesi and Shiré Rivers. In Nyasaland, according to General Manning,

it is known to the natives as the "Mkanje," and it must be plentiful in this country, as specimens have been collected at Zomba, Mtondwe, Mkukula, Kotakota, Namiwawa and Ulumba. The specimens procured in November, January and April are in the bright breeding plumage, and in a large series obtained by Mr. Alexander Whyte at Zomba, between June and November, all are in the brown winter dress. From the above records it is evident that the species breeds in its southern range from November to April, and in the more northern latitudes from May till August.

In the Portuguese territory, at Quilimane, the species is called by the natives "Mribba," according to Dr. Stuhlmann. He also procured specimens at Zanzibar and in the Usegua country, where it is known to the natives as the "Baniani" and "Mnana." Serpo Pinto records it from Ibo Island off the Mosambique Coast in 12° 30' S. lat.

This species is abundant and very generally distributed over German East Africa, where Sir John Kirk, Böhm, Fischer and Emin have collected specimens at many places. At Melinda, Fischer found it beginning to breed in May, and this is the most eastern locality known to me for the species. It has not been recorded from Somaliland, and the species is apparently rare in British East Africa, for Mr. Jackson procured only a single pair at Elgeyu in August, a male in breeding plumage at Dindi, in Kavirondo, July 16, 1890, and one at Kabindo. Sir Harry Johnston obtained a specimen at Nandi, and Dr. Ansorge met with the species in Usogo. From further west, in Central Africa, Emin procured specimens at Tingasi and Kubbi, five of which are now in the British Museum, along with two from Abyssinia, in which latter country were procured the types of *Oryzopetiti*, *Euplectes craspedopterus* and *E. pyrroazona*. According to Heuglin they breed in August and September in the high

grass and bush in the Djur country, and along the streams which flow from the Kasango Mountains. Prince Paul of Württemberg found the species in Southern Senaar, and I cannot trace the range further north in Eastern Africa.

The eggs, generally three in number, are of a pale greenish blue, with or without small reddish brown and greyish brown spots, and measure on an average 0.75×0.58 .

Genus VI. ANOMALOSPIZA.

Bill very deep and much compressed at the sides; exposed culmen straight from the tip to the nostrils and extending far back, parting the feathered portion of the forehead; cutting edge of the lower mandible bent into a sharp angle at the base, with the posterior side directed in a straight line with the centre of the nostrils; structure of the wings and feet the same as in *Pyromelana* and *Quelea*.

Type.

Anomalospiza, Shelley, Bull. B. O. C. xii. p. 30 (1901) . . . *A. imberbis*.

The genus is represented by one species, which is confined to Tropical and South Africa. This species was originally placed in the genus *Crithagra*, no doubt on account of the colouring of the full plumaged male, which much resembles that of *Serinus flavivertex*. The bare culmen receding back through the frontal feathers is a character of the *Ploceidæ* and not of any of the African members of the *Fringillidæ*. The small sharply pointed first primary, in conjunction with the striped mantle of the female, shows that it belongs to the *Viduinæ*.

Anomalospiza imberbis. (Pl. 31.)

Crithagra imberbis, Cab. J. f. O. 1868, p. 412, note *Zanzibar Coast*.

Anomalospiza imberbis, Reichen. Orn. Monatsb. 1903, p. 168; id. Vög. Afr. iii. p. 276 (1904).

Crithagra chloropsis (non Bp.) Cab. in Decken Reis. iii. p. 30, pl. 9 (1869).

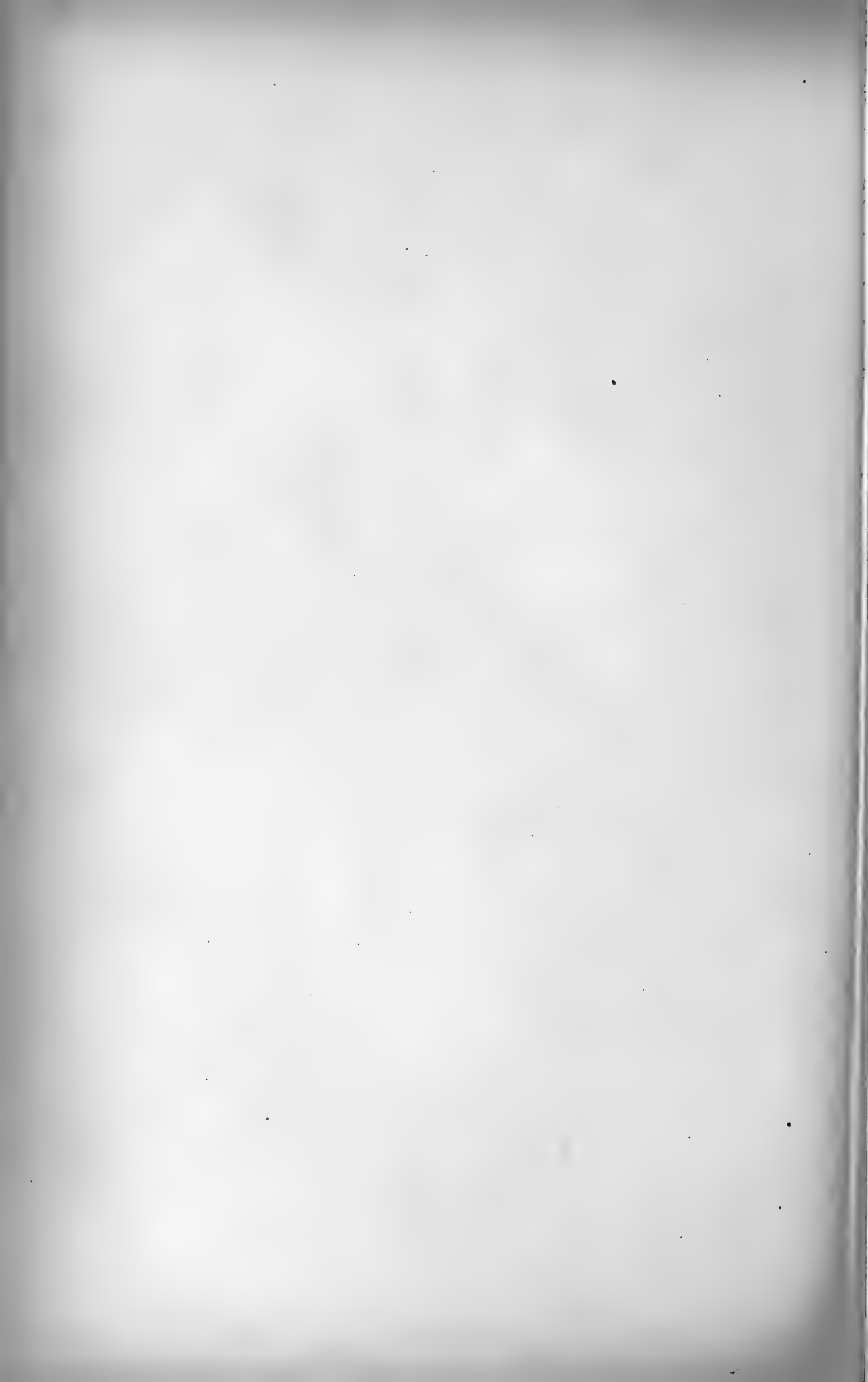
Crithagra rendalli, Tristram, Ibis, 1895, p. 130 *Transvaal*.

Serinus rendalli, Shelley, B. Afr. I. No. 292 (1896).

Anomalospiza rendalli, Shelley, Bull. B. O. C. xii. p. 30 (1901).



Anomalospiza rendalli.



Adult male. General plumage canary yellow. Forehead and front of crown uniform yellow; remainder of the crown, back of neck, back, scapulars, upper tail-coverts and the tail brownish black, with broad yellow edges to the feathers. Wings brownish black, with moderately broad dull yellow edges to all the feathers, excepting the primary coverts; inner edges of the quills and the under-coverts whitey brown, washed with yellow along the bend of the wing. Sides of the head and neck and the under parts yellow; flanks streaked with narrow blackish shaft-stripes; thighs slightly shaded with brown. Iris brown; bill horny brown, paler beneath; tarsi and feet pale brown. Total length 4.9 inches, culmen 0.5, wing 2.75, tail 1.55, tarsus 0.65. ♂, 16. 2. 94. Barberton district (Rendall).

Female. General plumage brown, with no bright yellow. Upper parts blackish brown, uniform on the forehead and front of the crown, but with a narrow yellowish white parting extending back from the culmen; remainder of the upper parts similar in pattern to that of the adult male, but with the edges of the feathers pale brown instead of yellow, and the dark centres to the feathers much narrower on the head and neck than on the mantle; a broad yellowish buff eyebrow extends from the nostril to above the ear-coverts; front half of sides of head yellowish buff, shading into pale brown on the ear-coverts and back of cheeks, which are slightly streaked with darker brown; under parts whitey brown; sides of neck and the crop with small lanceolate dark brown shaft-stripes; flanks boldly streaked with dark brown. Bill paler than in the full plumaged male. Total length 4.7 inches, culmen 0.5, wing 2.7, tail 1.55, tarsus 0.65. ♀, 16. 2. 94, Barberton district (Rendall).

The Canary-like Bishop-bird ranges from Sierra Leone and the Upper White Nile over Central and Eastern Africa to as far south as the Transvaal.

Mr. Robin Kemp, during a visit to Sierra Leone in 1902, procured an adult male of this species at Bo, in September, and writes: "The only specimen I have seen was caught with bird-lime by a native, at the edge of a ricefield. Iris dark brown; upper mandible horn-colour; lower mandible, feet and claws dusky flesh colour."

The species has been obtained by Emin in the Upper White Nile district at Fadjulli and Obbo; by Mr. Oscar Neumann in Usoga at Kwa Lubwa; by Böhm in the Uniamwesi country

at Kakoma, and by Fischer in Ugaia on the eastern coast of Victoria Nyanza, and also at Zanzibar.

The type was discovered by Decken near the Zanzibar coast, but the exact locality has not been recorded, and it remained hidden in the Berlin Museum from 1868 until the beginning of this century, when, I believe, Mr. Neumann renamed *Serinus imberbis*, Sharpe, *S. Sharpii*, under the impression that *Crithagra imberbis*, Cab., belongs to the same genus *Serinus*, which proves not to be the case.

With regard to my article on *Serinus imberbis* (B. Afr. III. p. 203), erase all the references to *Crithagra imberbis* and *chloropsis*, and those to *Serinus imberbis* after "Zomba," all of which refer to the present species. Similar corrections should be made in the Catalogue of the Birds of the B. M. xii. p. 355.

From further south the species is known by the types of *Crithagra rendalli*, a male and female, shot by Dr. P. Rendall in the Barberton district of the Transvaal out of a large flock, February 17, 1894. They were very wild and gave him an exciting ride after them over the open veldt before he could secure both sexes. These specimens are now in the Liverpool Museum, and I had them figured for my present work in 1901 under the name of *Anomalospiza rendalli*, believing at the time that they were distinct from *Crithagra imberbis*, Cab., which Dr. Reichenow assures me is not the case.

Genus VII. QUELEA.

The alteration in the plumage of the adult male by the spring moult is slight, most marked by the head or throat assuming some clear black or red, which distinguishes it from the female; the back does not change, but remains brown, with blackish centres to the feathers, the neck and breast sometimes acquiring a crimson shade. In general structure it closely resembles *Pyromelana*, but like *Anomalospiza*, it never has a ruff on the neck and the upper tail-coverts do not extend so far over the tail.

Type.

Quelea, Reichenb. Syst. Nat. pl. 76, fig. 1 (1850) *Q. quelea*.

Hyphantica, Cab. Mus. Hein. i. p. 180 (1851) ? *Q. quelea*.

This genus is confined to Tropical and South Africa, including St. Thomas Island in the Bight of Benin, and comprises four species.

KEY TO THE SPECIES.

a. Bill red.

*a*¹. Side of head and the upper throat black *Males in breeding plumage.*

*a*². Entire forehead black *quelea.*

*b*². Entire forehead buff *athiopica* (typical).

*b*¹. Sides of head and the upper throat not black.

*c*². Forehead, crown and sides of head more ashy; throat whitish *Males in winter plumage and the females.*

*d*². Forehead, sides of head and the upper throat brighter, sandy buff or pale brown *var. russi.*

b. Bill black or brown.

*c*¹. Forehead bright crimson or scarlet, entire head red in breeding plumage *Males.*

*c*². Bill larger; upper half of throat deep crimson, shading almost into black down the centre *erythropt.*

*f*². Bill smaller; entire throat bright scarlet *cardinalis.*

*d*¹. No red on head or throat *Females of both species.*

Quelea quelea.

Emberiza quelea, Linn. S. N. (x.) p. 177 (1758); (xii.) 1, p. 310 (1766) *Africa.*

Quelea quelea, Sharpe, Cat. B. M. xiii. p. 257, pl. 10, fig. 3 (1890); Butler, Foreign Finches in Captivity, p. 298, pl. 58 (1894); Shelley, B. Afr. I. No. 350 (1896).

Quelea sanguirostris (non Linn.), Reichen. Vög. Afr. iii. p. 108 (1904).

Loxia lathamii, Smith, Rep. Exped. Centr. Afr. 1836, p. 51 *Kurrichaine.*

Quelea sanguirostris lathamii, Reichen. Vög. Afr. iii. p. 110 (1904).

Quelea occidentalis, Hartl. Orn. W. Afr. p. 129 (1857) *Senegambia.*

Ploceus russi, Finsch, Gefied. Welt. 1877, p. 307 *W. Afr.*

Quelea russi, Sharpe, Cat. B. M. xiii. p. 260, pl. 10, fig. 6 (1890 pt.); Shelley, B. Afr. I. No. 353 (1896).

Dioch, Vieill. Ois. Chant. p. 46, pls. 22, 23 (1805).

Male in breeding plumage. Forehead, cheeks, ear-coverts, chin and upper throat black; remainder of the head and throat as well as the sides of neck glossy sandy buff, with the nape ashy brown like the back of the neck; back, wings and tail dark brown, with pale edges to the feathers; primaries and most of the tail-feathers edged with chrome yellow; under wing-coverts sandy; quills ashy brown, with whitish inner edges; breast, thighs and under tail-coverts buff; front of chest and sides of body with a wash of brown or with brown centres to the feathers. "Iris light hazel; bill dark rosy red; tarsi and feet bright red brown." Total length 4.7 inches, culmen 0.55, wing 2.6, tail 1.6, tarsus 0.7. ♂, 11. 12. 76. Potchefstroom (T. Ayres).

Var. a. Pale portion of head, throat and breast washed with crimson. ♂, 20. 12. 71. Potchefstroom.

Var. b. Similar to the last, but with the forehead, cheek, ear coverts, chin and upper throat sandy buff. Transvaal.

Adult female. Coloured like the male first described, with the exception of the head and neck; forehead and crown ashy brown like the back of the neck; sides of head, chin and throat buff, with a shade of brown on the ear-coverts. Total length 4.4 inches, culmen 0.55, wing 2.5, tail 1.4, tarsus 0.7. ♀, 11. 12. 76. Potchefstroom (T. Ayres).

The Black-fronted Dioch inhabits Africa south from the Senegal River, the Albert Nyanza and Lake Nyasa.

Hartlaub described his *Q. occidentalis* from specimens labelled "Senegal," "Casamanse," and "Guinea." In the British Museum there is a single specimen from the Gambia, in the plumage of *Q. russi*, Finsch. In that country Mr. J. S. Budgett found the species common and brought home an example from Nianimaru. Mr. Boyd Alexander, while travelling inland from the Gold Coast, met with these birds in flocks at Binduri to the north of Gambaga.

There is, in the British Museum, a typically coloured adult male from Kibero on the eastern side of the Albert Nyanza, and from the Albert Edward Nyanza there are five specimens collected by Mr. Scott Elliot, which more nearly approach *Q. quelea* than *Q. æthiopica*, but are intermediate forms.

I do not find the species recorded from West Africa

between Gambaga and the Loango Coast. In the latter country it has been procured by Falkenstein and Major Mechow met with it in Angola. In Benguela Anchieta obtained specimens at Capangombe and Humbe, and over South Africa, with the exception of Cape Colony, it is generally distributed. Andersson writes: "This is a very common species in Damaraland, where it congregates in immense flocks after the breeding season, and it is also common in the Lake regions." Mr. Fleck met with it at Gansis and Korizi in the Kalahari in May, and found it in flocks at Boliwa on Lake Ngami in June. The type of *Loxia lathamii* came from Kurri-chaine and is a female, or male in winter plumage.

From the Orange River Colony Mr. E. Symonds wrote: "These little birds seem to be particularly fond of the town of Kroonstad, which they frequent in large numbers. I have several in my aviary, and observe that in summer, when the males get their red colour about the head, the bills of the females turn yellow."

In Natal the species has been procured by Mr. T. L. Ayres at Durban, Major Clark found it abundant at the Modder River, and it has been met with in Zululand by Messrs. Woodward, and at Inhambane by Dr. Peters. In the Transvaal it is apparently more plentiful, for, according to Mr. T. Ayres, in the winter season flocks of this species, and also of *Pyromelana taha* and *P. oria*, come for miles up the river from their favourite patches of reeds in the swamps where they roost, to feed on the minute grass-seeds in the old cultivated ground about Potchefstroom, returning in large flights to the same swamps in the evening. Although the different species feed together, also often in company with flocks of *Passer arcuatus*, so closely that they may be killed by the same shot, yet, in going to their feeding ground and in returning to their roosting places, the birds of each species keep by themselves

in separate flocks, notwithstanding their habit of mingling whilst feeding. He also met with it while in company with Jameson, at Kooroomoorooi Pan in Betuanaland. In Matabeleland, the species has been procured at the Kami River by Mr. Hellmayr. Along the Zambesi, according to Mr. Boyd Alexander, it is "locally distributed and found in large flocks frequenting the extensive beds of fish-cane near the river and making them resound with their singing, which is not unlike that of Starlings when together. At the end of December the males were in full breeding dress, while the plumage of the females had also undergone a change, the feathers of the upper parts having become darker, especially on the crown, the buffy-white edges to the secondaries and feathers of the mantle having disappeared, the yellow edgings to the quills being more distinct, and the eye-stripe and the whole of the under parts being washed with a sandy buff."

In British Central Africa specimens have been collected by Mr. Whyte on the Nyika Plateau, at Karonga and on Mount Mlosa, and by Sir Alfred Sharpe at Lake Moero.

Further north in East Africa to the confines of North-east Africa *Q. quelea* and *Q. æthiopica* have apparently freely interbred; but as a rule these hybrids—*Q. intermedia*, Reichen.—incline more towards *Q. æthiopica* than to *Q. quelea*, from which one may infer that the former is possibly the older race and that *Q. quelea* is scarcely more than a subspecies.

One of these forms has been procured by Senhor Cardoso at Cape Delgado, where it is called by the natives "Epera."

Quelea æthiopica.

Ploceus sanguinirostris, var. *æthiopicus*, Sundev. Öfv. K. Vet. Akad. Förh. Stockh. 1850, p. 126.

Quelea æthiopica, Sharpe, Cat. B. M. xiii. p. 259, pl. 10, fig. 5 (1890); Shelley, B. Afr. I. No. 352 (1896); Grant, Ibis, 1904, p. 257 *Upper Galla*.

- Quelea sanguinirostris æthiopica*, Reichen. Vög. Afr. iii. p. 109 (1904).
Ploceus sanguinirostris, var. *major*, Sundev. Öfv. K. Vet. Akad. Förh. Stockh. 1850, p. 126.
Hyphantica æthiopica, var. *intermedia*, Reichen. J. f. O. 1886, p. 393
Gonda, Durama, Ndi, Barawa.
Quelea intermedia, Sharpe, Cat. B. M. xiii. p. 259, pl. 10, fig. 4 (1890);
 Shelley, B. Afr. I. No. 351 (1896).

Very similar to *Q. quelea*, but differs in the bill being very slightly stronger, and in full plumaged males the forehead and back of head are sandy buff like the crown; breast generally slightly more uniform. Total length 4·8 inches, culmen 0·6, wing 2·7, tail 1·5, tarsus 0·8. ♂, 29. 6. 68. Ailet (Jesse).

This species is subject to the same style of variations of plumage as *Q. quelea*. Those of both species which have no black on the head or throat when in full dress have received the name of *Q. russi*, and others of the present species with a few scattered black feathers on the forehead represent *Q. intermedia*. These latter are probably hybrids between *Q. quelea* and the present species, and are represented in the British Museum by specimens from Lamu, and others from the Albert Edward Nyanza are nearly intermediate between this form and *Q. quelea*.

The Buff-fronted Dioch inhabits Eastern Africa between 8° S. lat. and 17° N. lat.

Dr. Reichenow in his last work refers all the specimens from German East Africa to this species. His *Q. intermedia* was probably founded upon cross-bred birds between *Q. quelea* and *Q. æthiopica*, both of which forms range into the Great Lake district of Central Africa; and in the British Museum there is a very typical example of *Q. æthiopica* from Ugogo.

Böhm has collected specimens at Qua Mpara in the Tanganyika district, at Gonda and at Mdaburu in Ugogo; here, according to Dr. S. T. Pruen, it is known to the natives as the "Maumbi." Sir John Kirk also collected specimens in Ugogo and near Lamu Island, and Fischer's collection contained many examples from the Pangani district, Kagehi at the southern end of Victoria Nyanza, at several places near the Lower Tana River, and also at Barawa in Somaliland. In the country to

the west of Kilimanjaro Mr. Oscar Neumann met with it at Umbugwe and Nguruman. Mr. Jackson found it at Machako's and in the Teita country. In the British Museum there are specimens from Kilimanjaro, the Athi River, Lake Rudolf and Somaliland, where it has been recorded by M. Oustalet, and by Mr. Elliot, who writes: "This Weaver-bird was frequently seen in large flocks on the plateau. It would sometimes roost in great numbers near the camp in some trees overgrown with vines, which afforded a thick shelter. At the place where our specimens were collected a large number were shot and served for breakfast the next morning, and were as nice a morsel as is our reed or rice-bird, the much persecuted Bob-a-link."

Dr. Bowdler Sharpe, in an article upon Dr. Donaldson Smith's collection from Somaliland, observes: "The way in which the black varies in extent on the lores in this series makes me very doubtful of the validity of *Q. intermedia*."

In Southern Abyssinia Lord Lovat found it during January in flocks with other Finches at Lake Harrar Meyer, Baroma and Gadaburka, and Mr. Pease met with it near the wells and pools at Fullfully. Antinori and Ragazzi have collected sixteen specimens from many places in Shoa, including representatives of *Q. æthiopica*, Sudev., *Q. intermedia*, Reichen., and *Q. russi*, Finsch. Mr. A. L. Butler writes to me: "*Quelea æthiopica* I met with in large flocks (winter plumage) on the Blue Nile between Khartoum and Wad Medani in March, and also found it abundant at Gedaref and Gallabat in May and June, still in large flocks, crowding to drink at pools in the rocky 'khors' during the heat of the day. Round these pools the ground had the appearance of having been thickly sprinkled with rice from their droppings. On May 27 I killed thirty-seven with one shot, and of these one only was beginning to assume the breeding plumage. Considerable damage is done to the crops by the vast flocks of these birds and *Xanthophilus galbula*."

According to Heuglin it is migratory in Kordofan, Sennaar, Southern Nubia and Takah, arriving there with the first summer rains, travelling southward in September and October; and he met with numbers of these birds along the White Nile in January.

Capt. Dunn has procured the species at the Zeraf River, and Mr. Hawker found it abundant at Fashoda in flocks, along with *Hyphantornis tæniopterus*. In the British Museum there are specimens from Kordofan (the most western range known to me for the species), from Sennaar, Bejook, Ailat and Maragaz. This latter specimen is in the *Q. russi* plumage.

Dr. Blanford writes: "Only met with in Northern Abyssinia; it was first seen at Ailat, and occurred abundantly in the Anseba Valley. It was several times seen feeding on insects, and even pursuing winged ants and catching them in the air. It was always in flocks, and did not appear to be breeding in the rains."

Quelea erythroops.

Ploceus erythroops, Hartl. Rev. Zool. 1848, p. 109 *St. Thomas Isl.*

Quelea erythroops, Sharpe, Cat. B. M. xiii. p. 255, pl. 10, fig. 1 (1890); Shelley, B. Afr. I. No. 354 (1896); Reichen. Vög. Afr. iii. p. 111 (1904).

? *Fringilla erythrocephala*, Les Murs in Lefebvr. Voy. Abyss. p. 119 (1850).

Quelea capitata, Du. Bus, Bull. Acad. R. Brux. xxii. pt. 1, p. 151 (1855) *Senegal.*

Foudia hæmatocephala, Heugl. J. f. O. 1864, p. 250 *Bongo.*

Adult male. Similar to *Q. quelea*, from which it differs in having the bill blackish and the entire head and upper half of the throat crimson, shading almost into black on the chin and down the centre of the throat. "Iris brown; bill blackish, with the base of the lower mandible pale; tarsi and feet reddish brown." Total length 5·1 inches, culmen 0·6, wing 2·55, tail 1·5, tarsus 0·75. ♂, 3. 6. 86. Kibero (Emin).

Adult female. Very similar to that of *Q. quelea*, but may be readily distinguished by the bill being dark brown, with the under mandible paler. Wing 2·4. ♂, Gaboon (Du Chaillu).

The types of *E. erythrope*, young or not in full breeding plumage, are described by Hartlaub (Alhandl. nat. Ver. Bremen, 1891, p. 20) as follows: "*Male*. Similar to *Q. quelea* in the colouring of the body, wings and tail; upper parts dusky brown, with pale edges to the feathers; crown darker, with crimson on the head confined to the forehead, eyebrows, lores and feathers surrounding the base of the lower mandible; under parts brown, with the throat and centre of abdomen white; under wing-coverts and bend of wing isabelline. Bill and legs dark brown.

"*Female*. Differs in the parts being yellow, which are red in the male."

The Dark-throated Red-headed Dioch inhabits St. Thomas Island, and ranges from Senegal to the Quanza River eastward into the Bongo country and the Zanzibar district south from the Tana River.

The species was discovered in St. Thomas Island by Weiss, and is abundant there. The type of *Q. capitata* came from Senegambia, and Verreaux received specimens from Casamance. In Liberia Mr. Büttikofer found it in company with other small birds in the bushes at Bendo, near Fischerman's Lake, at Schieffelinville, and by the Farmington River, feeding on grass-seeds and visiting the ricefields when the grain was ripening. While I was on the Gold Coast with T. E. Buckley we found the species abundant in the open country near Accra. Riis brought home specimens from his expedition into Aquapin, Ussher met with it at the Volta River, and Dr. Büttner in Togoland.

In Camaroons Mr. Sjöstedt procured a specimen at Bibundi, and on Prince's Island Dr. Dohrn and Mr. Kenlemans saw them in flocks of twenty to eighty individuals, usually in company with *Spermestes cucullatus*. In Gaboon it must be common, for Du Chaillu's collection contained a number of specimens from the Moonda and Camma Rivers. On the Loango Coast specimens have been collected by Falkenstein at Chinchonxo, and by Lucan and Petit at Landana. Storms brought back examples in his collection from Lake Tanganyika, and there

is a specimen in the British Museum from the Quanza River, which is the furthest south I can trace the species.

The most southern range known to me for the species in Eastern Africa is Mtoni, on the Kingani River, 6° 30' S. lat. Here Mr. Bohndorff has procured a specimen. Fischer records it as rare at Pangani, and he also met with it at Ualimi, on the Tana River. It is certainly scarce in Eastern and Central Africa, for the only other specimen known to me from these parts is the type of *Foudia hæmatocephala*, procured at a marsh in the Bongo country, about 7° N. lat., 28° 30' E. long., to the west of the Upper White Nile, and was the only specimen found by Heuglin.

The egg is described by Mr. Kuschel as oval in form, olive green with dusky spots and a slight gloss, and measures 0·73 × 0·55.

Quelea cardinalis.

Hyphantica cardinalis, Hartl. J. f. O. 1880, p. 325; 1881, pl. 1, fig. 1 *Lado*.
Quelea cardinalis, Sharpe, Cat. B. M. xiii. p. 256, pl. 10, fig. 2 (1890);
 Shelley, B. Afr. I. No. 355 (1896); Nehrkorn, Kat. Eiers. p. 125,
 pl. 3, fig. 34 (1899) *egg*; Reichen. Vög. Afr. iii. p. 112 (1904).

Adult male. Similar to *Q. erythrope*, from which it differs in the hinder crown and back of head being mottled with blackish centres to the feathers; chin and entire throat uniform bright scarlet; bill much smaller. Iris brown; bill blackish; tarsi and feet reddish brown. Total length 4·3 inches, culmen 0·45, wing 2·3, tail 1·4, tarsus 0·7. ♂, 30. 6. 81. *Lado* (Emin).

Adult females and young males. Similar in plumage to those of the other members of the genus, but may be readily distinguished by the much smaller bill; upper mandible dark brown, lower one paler. ♀ ad, and ♂ juv. 13. 8. 79. *Lado* (Emin).

The Cardinal Dioch inhabits Eastern Africa from 7° S. lat. to 5° N. lat.

The species inhabits both sides of Lake Tanganyika, for it was contained in Capt. Storms's collection, and Böhm met with it at Karema. Fischer remarked that in habits

it closely resembled those of the other members of the genus, was extremely common at Nguruman in flocks of one hundred and fifty to two hundred, but he did not observe it elsewhere. It frequented the country covered with grass and scrub, in which it was breeding. The nests he found contained three eggs, and in structure resembled those of *Pyromelana nigri-ventris*, that is, an oval nest constructed of grass, with the entrance at one side.

Mr. Jackson found it very plentiful in the long bushy grass at Njempes, on Lake Baringo, and in flocks at Nandi up to 6,500 feet. Mr. Neumann records it from Kavirondo, and Dr. Ansorge collected specimens in Unyoro and at Masindi. Emin has sent many specimens from Wadelai and Lado, and at the latter place obtained the type of the species.

Subfamily II. ESTRILDINÆ.

The members of this subfamily, like those of the *Viduinæ* are distinguished from the *Ploceidæ* by their first or bastard primary being very small, narrow and sharply pointed, and in the latter the tail is always square or rounded, and shorter than the wing.

The *Estrildinæ* are distinguished from the *Viduinæ* by the upper parts being often barred but never striped, by having no distinctly marked seasonal plumage, and by the sexes being at all times very similar in plumage.

Bill variable in length and strength, the culmen (excepting in *Spermestes fringilloides*) shorter than the tarsus, smallest and most narrow in *Nesocharis*, widest and strongest in *Pyrenestes*, in which the upper mandible generally has a tooth-like notch. In *Nigrita* it is somewhat flattened and widened to such an extent that one of the species was formerly referred to the *Muscicapidæ*. Nostrils generally, but not always, hidden by the frontal feathers. Wing (excepting in *Amadina* and *Philetairus*) rounded; first or bastard primary very small, second primary generally shorter than the fifth, but is one of the longest in *Amadina*, *Philetairus*, *Padda*, *Uroloncha*, *Ortygospiza* and *Spermestes*. Tail (excepting in *Philetairus*) rounded or graduated, of the same size and form at all seasons, and (excepting in *Uræginthus*) not longer than the wing.

Members of the genera *Lagonosticta* and *Pytelia* may be readily recognised by the terminal third of the first long primary being very narrow, and generally distinctly cut away on the inner web.

KEY TO THE GENERA.

- a.* Nostrils exposed.
- a*¹. Wing pointed, end of inner primary falling short of tip of wing by not less than length of tarsus.
- a*². Tail short and rounded; inner primary falling short of tip of wing by more than length of tarsus; males with red on head or neck *Amadina.* p. 152
- b*². Tail square; inner primary falling short of tip of wing by length of tarsus; no red on plumage . . . *Philetairus.* p. 157
- b*¹. Wing rounded; bill more flattened, broader than deep *Nigrita.* p. 151
- b.* Nostrils hidden by frontal feathers.
- c*¹. Second primary one of the longest.
- c*². Tail fairly long and slightly graduated, with the centre pair of feathers more elongated and pointed.
- a*³. Claws less curved; bill and legs pink; back uniform grey; quills broad *Padda.* p. 149
- b*³. Claws much curved; bill and legs brown; head and upper throat freckled. *Uroloncha.* p. 150
- d*². Tail short and evenly rounded.
- c*³. Outstretched feet extending beyond the tail; culmen nearly straight. *Ortygospiza.* p. 155
- d*³. Outstretched feet not reaching to end of tail; culmen curved *Spermestes.* p. 152
- d*¹. Second primary shorter than the fifth.
- e*². Bill less powerful; no tooth-like projection on the cutting edge of the bill.
- e*³. Back and upper tail-coverts olive; breast grey or mostly so; no spots nor bars.
- a*⁴. Bill very small and narrow; tail short and rounded, not extending beyond the outstretched feet *Nesocharis.* p. 172
- b*⁴. Bill stout; tail graduated and extending well beyond the outstretched feet *Chlorestilda.* p. 170
- f*³. Upper tail-coverts never olive when the breast is mostly grey and the plumage unspotted.
- c*⁴. Little or no crimson on the wings.
- a*⁵. First long primary entire, not narrowed towards the end.
- a*⁶. Upper tail-coverts blue; tail longer than the wing and strongly graduated *Uræginthus.* p. 178
- b*⁶. Upper tail-coverts never blue.
- a*⁷. Bill forming on forehead a right angle; spots when present on plumage small and confined to sides of breast.

- a*⁸. Bill narrower; never with the entire under mandible pale and upper mandible black; tail less rounded . . . *Estrilda*. p. 190.
- b*⁸. Bill broader; adults with entire under mandible pale and upper mandible black; tail rounded, end of outer feather falling short of tip of tail by less than length of culmen . . . *Coccoxygia* p. 237.
- b*⁷. Bill forming on forehead an acute angle; adults with larger and more numerous pale twin-spots not confined to sides of breast . . . *Hypargos* p. 239.
- b*⁵. First long primary with the terminal third narrow and generally distinctly cut away on the inner margin.
- c*⁶. Tail-feathers broader; outer margins of quills never red nor yellow; breast generally with minute white spots . . . *Lagonosticta*. p. 241.
- d*⁶. Tail-feathers narrower; outer margins of quills red or yellow; breast barred . . . *Pytelia*. p. 242.
- d*⁴. Greater portion of wings crimson . . . *Cryptospiza*. p. 243.
- f*². Bill very powerful; generally with a tooth-like projection on the cutting edge of the upper mandible; plumage of two colours, brown and crimson or black and crimson . . . *Pyrenewest*. p. 244.

Genus I. AMADINA.

Bill very stout and short, swollen at the base; culmen flattened and curved, the base ending in a right angle on the forehead; keel curved; edges of upper mandible festooned towards the gape; nostrils covered by the frontal feathers. Wing pointed, the tenth quill falling short of the tip by more than the length of the tarsus; primaries 1, small, narrow and sharply pointed; 2, 3 and 4, longest and about equal. Tail short and rounded. Tarsus moderate; toes long and slender; outer and inner toes about equal; hind claw long and curved. Plumage of the sexes differing in the males only having some red on the head or throat.

Type.

Amadina, Swains. Zool. Journ. iii. p. 349 (1827) . . . *A. fasciata*.
Sporothlastes, Cab. Arch. Naturg. 1847, p. 331. . . *A. fasciata*.

The genus is confined to Tropical and South Africa, and comprises three species. In the typical species the males have a red band across the throat, which has caused them to be known as Ribbon Finches and Cut-throat Sparrows. I shall call them Ribbon-Waxbills.

AMADINA FASCIATA

KEY TO THE SPECIES.

- a. A crimson band across the throat.
 - a¹. Black lines on under parts submarginal *fasciata*, ♂.
 - b¹. Black lines on under parts forming edges to the feathers *marginalis*, ♂.
- b. Entire head red *erythrocephala*, ♂.
- c. No red on head or neck *Females and young males*.

Amadina fasciata.

Loxia fasciata, Gm. S. N. ii. p. 859 (1788).
Amadina fasciata, Swains. B. W. Afr. i. p. 197, pl. 15 (1837); Sharpe, Cat. B. M. xiii. p. 289 (1890); Butler, Foreign Finches in Captivity, p. 183, pl. 35 (1894); Shelley, B. Afr. I. No. 359 (1896); Nehr Korn, Kat. Eiers. p. 125 (1899) *egg*; Reichen. Vög. Afr. iii. p. 146 (1904).
Fringilla detruncata, Licht. Verz. Doubl. pp. 25, 26 (1823) *Senegambia*.
La Loxie fasciée, Vieill. Ois. Chant., p. 90, pl. 58 (1805).

Adult male. Forehead, crown, back and sides of neck, back, wing-coverts, inner secondaries and the upper tail-coverts pale rufous brown, with subterminal angular black bars; remainder of wing more uniform brown, with the under coverts and inner margins of the quills rufous buff; tail dark brown, with white ends to all but the centre pair of feathers, increasing in size to the external ones, which have the outer web also white; a broad crimson band extends from the top of the ear-coverts across the throat; remainder of the head, chin and throat white, somewhat mottled with brownish black; lower throat and abdomen white, shading into rufous buff, with the centre of the chest cinnamon; the buff feathers of the front and sides of the breast crossed by angular black bars; under tail-coverts with large dusky blackish centres. "Iris hazel; bill horny; feet flesh colour." Total length 5.1 inches, culmen 0.4, wing 2.6, tail 1.7, tarsus 0.55. ♂, 17. 12. 83. Redjaf (Emin).

Adult female. Differs in having no red on the head or throat, which parts are more mottled with blackish bars on the feathers. Wing 2.6. ♀, Bogos (Esler).

Immature. Upper parts nearly uniform brown, with the black bars appearing on the scapulars and upper tail-coverts. West Africa.

The Common Ribbon-Waxbill ranges over Eastern Africa between 17° N. lat. and 15° S. lat., and crosses the continent into Senegambia and possibly the Congo region.

In West Africa the species is abundant in Senegambia only.

A specimen procured by Mr. Bohndorff at Ngombi Manyanga, on the Lower Congo, has been referred to this Weaver by Hartlaub; I have not seen it, but would suggest that it possibly belongs to *A. marginalis*, a West African species with no known habitat.

In the British Museum there is an immature specimen of *A. fasciata* which was obtained by Frank Oates at the Tati River, in Matabeleland. This specimen has been referred to *A. erythrocephala* (non Linn.), Oates, Matabeleland and Victoria Falls, p. 320 (1881). Otherwise the Common Ribbon-Waxbill was not known, as a native of South Africa, until Dr. W. L. Selater procured a male and female at the Zambesi River, last February.

Dr. Reichenow mentions Dar-es-Salam, Bagamoio, Usegua, Nguruman and Wembere, as localities where the species occurs in German East Africa, and remarks that the eggs are pure white, and measure, on an average, 0.75×0.5 .

Mr. Jackson obtained two specimens out of a small flock, as they came down to drink, at a rocky pool known as "Ungarunga," in the bushy wilderness between the River Tsavo and Kibwezi. In Somaliland Dr. Donaldson Smith found the species breeding in August at Lammo and procured a pair at Goura. Mr. Hawker, while he was at Arabsiyo and Gebili, in December, 1897, "got these birds at water-pools, where they came in flocks in the middle of the day." From Southern Abyssinia Mr. Pease writes: "The Ribbon or Cut-throat Finch flies in dense packs and alights in close order on the tops of bushes and trees. It was seen only below the escarpment at Dalado." In Shoa Antinori met with it in May, November and December, and Dr. Ragazzi found it in large flocks near Tofan in August.

According to Heuglin the species is abundant along the

Abyssinian coast to 17° N. lat. He found it in Kordofan and along the White Nile. In September they assemble with other Finches to feed in flocks and roost in the scattered trees. It breeds towards the end of August and beginning of September, and in habits and voice much resembles our Common Sparrow.

Emin has procured the species at Lado and Redjaf, and Antinori found it in large flocks in the country of the Req Negroes. Mr. A. L. Butler informs me that he "met with it, on May 11, 1901, in large flocks at Doka, between Gedaref and Galabat, where they were drinking at the mud cattle-troughs by the wells. Capt. Dunn got it near El Obeid in Kordofan."

Amadina marginalis.

Amadina marginalis, Sharpe, Cat. B. M. xiii. p. 290 (1890) *W. Africa* ; Shelley, B. Afr. I. No. 360 (1896).

Amadina fasciata, var *marginalis*, Reichen. Vög. Afr. iii. p. 146 (1904).

Adult male. Upper parts rufous shaded brown; forehead, crown, back and sides of neck with black bars; rump and upper tail-coverts buff, barred with black; upper back and wings more uniform brown; lesser wing-coverts and scapulars with black terminal edges and a few other bars; greater coverts and the quills dark brown, shaded with rufous at their edges; under coverts and inner margins of quills rufous buff, tail dark brown, with white ends to all but the centre feathers, increasing in size to the external ones, which have the outer webs white; a broad crimson band from the top of the ear-coverts across the throat; cheeks, chin and upper throat white; remainder of the under parts rufous buff, with black edges to the feathers, giving a scale-like appearance, except on the centre of the breast, which is uniform cinnamon shading into buff on the lower abdomen. Total length 4.2 inches, culmen 0.45, wing 2.5, tail 1.5, tarsus 0.55. Type, West Africa (Pulham).

Adult female. Differs in having the crown and mantle nearly uniform brown; no crimson on the head and neck; sides of head and upper throat white, mottled with black bars; under surface of body paler and less strongly marked with the black edges to the feathers. Wing 2.6. West Africa (Sharpe Coll.).

The Black-margined Ribbon-Waxbill inhabits West Africa, possibly the Congo district.

The species is known from four specimens in the British Museum, all labelled "West Africa." The type was presented by Mr. J. Pulham; another adult male was formerly in Sir Andrew Smith's collection and the other two specimens, both females, were cage-birds. The species apparently does not inhabit Senegambia, where it is replaced by *A. fasciata*, but as I have already remarked, to this form may belong the specimen from Ngombi Manyanga on the Lower Congo, procured by Bohndorff and referred to *A. fasciata*, by Hartlaub (Abhandl. nat. Ver Bremen, 1891, p. 19), which I have not seen.

Dr. Reichenow regards this form as a variety of *A. fasciata*; that may be the case, if all the four known specimens were cage-birds. I admit him to be right in assigning to *Urobrachya axillaris*, *U. affinis*, Cab., as only a cage variety; and upon the same theory we might look upon *Hypargos margaritatus* (Strickl., 1844) as a cage form of *H. niveiguttatus* (Peters, 1868), but in the present as well as in the latter case, we require more evidence than we have at present.

Amadina erythrocephala.

Loxia erycephala, Linn. S. N. (x.) p. 172 (1858).

Loxia erythrocephala, id. S. N. (xii.) i. p. 301 (1766) *Africa*.

Amadina erythrocephala, Smith, Ill. Zool. S. Afr. Aves, pl. 69 (1841); Sharpe, Cat. B. M. xiii. p. 290 (1890); Shelley, B. Afr. I. No. 361 (1896); Nehrkor, Kat. Eiers. p. 126 (1899) *egg*; Reichen. Vög. Afr. iii. p. 147 (1904); Clarke, Ibis, 1904, p. 523 *Bloemfontein*.

Loxia brasiliiana, Bodd. Tabl. Pl. Enl. p. 19 (1783).

Loxia maculata, Burchell, Trav. S. Afr. ii. p. 269 (1824).

"*Fringilla reticulata*, Voigt," Cuv. Thierr. p. 582 (1831).

Amadina argus, Reichenb. Singv. p. 35, pl. 12, fig. 108 (1863).

Adult male. Upper parts ashy brown; head crimson, the ashy brown showing through on the nape; some of the median and greater wing-coverts with white ends and subterminal black bars; rump and upper tail-coverts also with subterminal blackish bars; tail dark brown, with white ends to

all but the centre feathers extending over the outer webs of the external pair; front and sides of the upper neck white, shading into ashy brown on the lower half of the sides of the neck; lower throat, breast, thighs and under tail-coverts white, all the feathers of the chest and flanks with terminal edges and bars of black; lower chest and sides of the abdomen mottled with cinnamon; under tail-coverts with dusky bases, separated from the broad white ends by black bars. "Iris brown; bill brownish; legs and feet flesh-colour" (Stark). Total length 5 inches, culmen 0.5, wing 2.8, tail 2.0, tarsus 0.6. ♂, 18. 6. 77. Bloemfontein (Exton).

Adult female. Differs in having the upper part and sides of the head ashy, with the edges of the feathers near the nape washed with crimson, the throat brownish buff with narrow brown bars, and more white and less rufous on the breast. Wing 2.9. Latakoo (A. Smith).

The Red-headed Ribbon-Waxbill inhabits Southern Africa south from Angola and Matabeleland.

The type probably came from Angola, as Edwards and Brisson supposed, for the species has been since procured at Loango, according to Prof. Bocage, and also by Welwitsch near Bengo. Anchieta procured specimens at Benguela and Humbe, and in the former district he found it to be abundant at Catumbella; with regard to the native names he gives they are not of much use, for according to his notes the present species is known to them in the town of Benguela as both "Niquerequere" and "Junga."

Andersson writes: "This pretty bird occurs in Great Namaqualand and at Lake Ngami, also in Damaraland, where, however, it is far from common, except in places, being, in fact, quite a local species. I found it congregated in large flocks on the Omaruru River at the end of October; and it was also pretty numerous at Otjimbinque, where it nested under the eaves of my house and in the adjacent trees in company with the South African Sparrow (*Passer arcuatus*), which it exactly resembles in its manners and habits; and I have found the nests of the two species on the same tree, and even on the same bough, as well as side by side under my eaves. The present species forms its nest of small sticks, slender roots,

&c., and lines it with wool, feathers, or other soft, warm material. The young are fledged in June and July. It seeks its food upon the ground, usually in small flocks, and when disturbed takes refuge in the nearest tree or hedge; it occasionally utters a kind of chirping twitter."

In Cape Colony the species is apparently restricted to the northern portion, and I do not find it recorded from Natal or Zululand. Sir Andrew Smith met with it in the neighbourhood of Latakoo only. Here these birds were invariably seen in flocks, generally on the ground, and, while feeding or flying, they uttered their harsh chirping note.

Layard received the species from Kuruman and Colesberg, and Mr. Ortlepp wrote to him that "in the latter neighbourhood it was rare, and at Priel it was common in large flocks; he found a colony in a large 'wait-a-bit' thorn; a cart-load of grass stuck in a fork, with two or three dozen apertures bored in below." According to Stark, in nearly all its habits, in its flight, as well as in many of its notes, it closely resembles *Passer arcuatus*. "On the Orange River the eggs are laid in March. They are pure white, rather elongated and tapering towards the small end, and measure 0.83×0.58 ."

Major Clarke met with it in the town of Bloemfontein only, on two occasions. In the Transvaal, according to Mr. T. Ayres, in 1874, it is exceedingly scarce, "but a single bird or a pair very occasionally appear. The pair now sent were shot in the town of Potchefstroom." Mr. E. Symonds writes: "I saw these birds for the first time in May, 1885, and had two in confinement, but they unfortunately died. I have never seen them in our summer months. I think a pair built on an eucalyptus tree in Kroonstadt in July, 1886."

To the north of the Limpopo River Dr. Bradshaw collected six specimens which are now in the British Museum, and these are the only examples, known to me, from the Matabele

district, where the range of the present species and that of *A. fasciata* meet, for to the latter belongs an immature bird, procured by Frank Oates at the Tati River.

Genus II. PHILETAIRUS.

Bill rather long and compressed at the sides, but slightly swollen at the nostrils; culmen rounded and gently curved, extending back in an acute angle on the forehead; keel slightly curved upwards; cutting edge of the upper mandible waved, with an inclination to a tooth near the gape; nasal openings exposed just in front of the frontal feathers. Wing pointed, the tenth quill falling short of the tip by the length of the tarsus; primaries 1 short, narrow and pointed; 2, 3 and 4 the longest. Tail square. Tarsus strong; feet moderate. Sexes alike in plumage, no portion red.

Type.

Philetairus, Smith in Charlesw. Mag. N. H. i. p. 536 (1837) *P. socius*.
Pseudonigrita, Reichen. J. f. O. 1903, p. 149 *P. arnaudi*.

The genus is confined to Tropical and South Africa, and comprises five species. In 1789 William Paterson gave the name of Social Grosbeak to the typical species of the genus, on account of its wonderful habit of erecting a whole colony of nests under one thatched roof, so I employ the name of Social-Waxbill for all the members of this genus.

KEY TO THE SPECIES.

- a.* Under parts brown; crown brown or greyish white.
 - a*¹. Bill pale brown; back of neck and flanks blackish, with narrow buff edges to the feathers; crown brown *socius*.
 - b*¹. Bill black; no black on the neck or flanks.
 - a*². Crown greyish white.
 - a*³. A black band across the tail; back browner *arnaudi*.
 - b*³. No black band across the tail; back greyer *dorsalis*.
 - b*². Crown pale brown, like the back *emini*.
- b.* Under parts white, with black on the flanks; upper half of head black; bill pale. *cabanisi*.

Philetairus socius.

Loxia socia, Lath. Ind. Orn. i. p. 381 (1790) *Cape*.

Philetairus socius, Reichen. Vög. Afr. iii. p. 242 (1904).

Philæterus socius, Sharpe, Cat. B. M. xiii. p. 249 (1890); Shelley, B. Afr. I. No. 374 (1896); Stark, Faun. S. Afr. B. i. p. 117, pl. *nest*.

Philetairus lepidus, Smith in Charlesw. Mag. N. H. i. p. 536 (1837); id. Ill. Zool. S. Afr. Av. pl. 8 (1838).

Adult. Forehead and crown uniform brown; nape, back and sides of the neck, and the upper back, brownish black, with narrow buff edges to the feathers, giving to these parts a scale-like appearance; lower back and upper tail-coverts paler, with less sharply marked buff edges; tail black, with the two centre feathers, broad ends to the others and the outermost webs of the tail brown; wings dark brown, with the edges pale, inclining to buff at the end of the median and greater coverts and the outer webs of the secondaries; under wing-coverts, and inner edges of the quills, buffy brown; front of sides of head, chin and upper throat, black; ear-coverts brown, paler than the crown, and fading into brownish buff on the hinder half of the cheeks, sides of upper neck and the under parts generally; flanks, thighs and under tail-coverts darker brown, the latter with buff edges; on each side of the abdomen is a large black and buff scale-like patch, formed by the feathers having the terminal half black, narrowly edged with buff. "Iris dark brown; bill horn-colour; legs and feet light brown" (Stark). Total length 5 inches, culmen 0.65, wing 3.0, tail 1.7, tarsus 0.75. ♂, Transvaal (T. Ayres).

Immature. Crown mottled with pale edges to the feathers; no black on the head and throat. Damara (Andersson).

The Southern Social-Waxbill inhabits South Africa from Damaraland and the Transvaal to the Orange and Vaal Rivers.

The species is nearly always to be met with in flocks, and Andersson found it breeding in Damaraland and Great Namaqualand. According to Mr. Fleck, it is generally distributed over those countries, and he also met with it in the Kalahari. Its most southern known range is the northern portion of Cape Colony, near the Orange River. Stark mentions it as rather a common species in Bechuanaland and Griqualand West, and by no means rare, though somewhat locally distributed, in the Transvaal.

The wonderful nest-structures of these birds have been figured by Sir Andrew Smith and by Stark, and the former naturalist writes: "The banks of the Orange River appear to constitute the southern limit of this bird's range; but specimens were only obtained in great abundance in the district around Latakoo, far from water. The most striking peculiarity observed of the species is the extraordinary manner in which a number of individuals associate, and build their nests under a common roof. When a nesting place has been selected, and the operation of building the nests is to be commenced *ab initio*, the community immediately proceed conjointly to construct the general covering which interests them all; that being accomplished, each pair begins to form their own nest, which, like the roof, they construct of coarse grass; these are placed side by side against the under surface of the general covering, and by the time they are all completed, the lower surface of the mass exhibits an appearance of an even horizontal surface, freely perforated by small circular openings.

"They never breed in the same nests a second time, though they continue for many years attached to the same roof. With the return of the breeding season, fresh nests are formed upon the lower surface of those of the previous year, which then form an addition to the general covering. In this manner they proceed, year after year adding to the mass, till at length the weight often becomes such as to cause the destruction of its support, upon which a new building-place is selected. They appear to prefer constructing the nests upon large and lofty trees, but where such do not occur, they will even condescend to form them upon the leaves of the arborescent aloe (*Aloe arborescens*), as occasionally happens towards the Orange River. The commencement of the roof is firmly interwoven with the branches of the trees to which it is intended to be suspended; and often a great part of a principal

branch is actually included within its substance. Each female lays from three to four eggs, which are of a bluish-white colour and freely mottled towards the large end with small brown dots. When once this species has attained maturity, it never afterwards exhibits any change in respect to colours. The male has no summer tints which he throws aside in winter, as is the case in *Euplectes*. Seeds, and occasionally small insects, constitute the food."

Mr. Ayres met with the species near the Vaal River "in July, 1869 (midwinter), when the birds, in flocks of from thirty to forty, were still inhabiting their nests, in which they appear to sleep all the year round." According to Stark, these nest-structures comprise from twenty to three hundred separate habitations, each warmly lined with feathers, but, nevertheless, these birds are extremely pugnacious. "The eggs are three or four in number, and vary a good deal in shape and colour. As a rule they are rounded ovates, but some are very elongated. The ground colour is some shade of drab, and they are more or less spotted all over with small dots of brown and greyish purple. They average 0.75 × 0.52."

Philetairus arnaudi.

Nigrita arnaudi, Bp. Consp. i. p. 444 (1850) *White Nile*.

Philæterus arnaudi, Sharpe, Cat. B. M. xiii. p. 250 (1890); Shelley,

B. Afr. I. No. 375 (1896); Nehr Korn, Kat. Eiers. p. 124 (1899) *egg*.

Pseudonigrita arnaudi, Reichen. Vög. Afr. iii. p. 171 (1904).

Fringilla (*Pyrgita*) *molybdocephala*, Heugl. Syst. Uebers. p. 41 (1856, *nom. nud.*).

Philæterus emini (non Reichen.), Sharpe, Ibis, 1891, p. 249, *Machako's*.

Adults. General plumage pale drab brown; forehead, crown and nape greyish white; lesser wing-coverts dusky black, with broad grey edges; quills brownish black, the secondaries with very broad pale drab edges extending over the whole outer web on the inner quills; under wing-coverts

and inner margins of quills pale drab; tail with a broad black band across the middle, covering about half of the tail; sides of head and the under parts uniform pale drab, slightly darker on the ear-coverts, and occasionally a few black feathers in front of the eyes. "Iris dark crimson; bill black; tarsi and feet pale brown." Total length 4.7 inches, culmen 0.45, wing 2.6, tail 1.4, tarsus 0.65. ♂, 26. 3. 79, Lado (Emin.); ♀, 9. 11. 99, Athi River (Delamere).

Arnaud's Social-Waxbill inhabits Central Equatorial Africa from the Gazelle River (9° N. lat.) to the Motiom Mountains in Masailand (2° S. lat.).

The type, which is in the Paris Museum, is labelled "Nil Blanc." It probably came from the Gazelle River district, for the species is not positively known from further north than 9° N. lat. It is abundant between that river and Victoria Nyanza, and, according to Emin, is generally to be met with wherever the sandy soil admits of bushes and trees. It is noisy, active and confiding, and is to be seen flitting in parties from bush to bush, or dusting itself in the warm sand. They feed themselves upon seeds, buds and insects, supplying their young mostly with the latter. They apparently breed more than once in the year, for he found their nests in December, also in the middle of the dry season, as well as in August, which is one of the wettest months in that region. Some dozen nests are often firmly attached to a single bough; these are strongly constructed of coarse grass with a short sleeve-like entrance passage hanging down; inside, the nest is rounded and lined with seed-down and soft fibres. Heuglin remarked that beneath the entrance passage is constructed a separate shelter for the male to roost in. The eggs, according to Emin, are generally four in number, white, with brick red dots, most numerous towards the thick end. They are described by Fischer as greenish white, with yellowish and violet brown spots, and a few streaks inclining to form a zone at the obtuse end. They measure 0.8 × 0.55. Emin further remarked that

the hen sits so close that it may be taken with the hand off its eggs. The incubation, which is performed entirely by the female, lasts eleven days, and the young remain in the nest for eight or nine days. He once met with a pair of *Spermestes cucullatus* breeding in the middle of a colony of these birds.

The species has been found nesting in May at Elgeyo, by Mr. Jackson, who writes: "The nest has two entrances, one of which is stopped up when the hen is about to lay. At other times it is used for roosting." He also obtained the species at Machako's. In the intervening country it has been met with by Dr. Ansorge at Campi-ya-Simba, and by Lord Delamere at the Athi River and at Larabat. Mr. Oscar Neumann records the species from the Kikuyu country and from Nguruman. Between the latter place and the Motiom Mountains, the most southern range known for the species, Fischer found it in pairs, or some half-dozen together feeding on the ground, which was covered with high grass, and in larger flocks in the more open country. In the Motiom highlands it was scarce, but a colony of ten pairs were breeding there at Wasso-Neibor.

Philetairus dorsalis.

Nigrita dorsalis, Reichen. J. f. O. 1887, p. 71 *Wembere, Nassa*.

Philæterus dorsalis, Sharpe, Cat. B. M. xiii. p. 251 (1890); Shelley, B. Afr. I. No. 376 (1896).

Pseudonigrita dorsalis, Reichen. Vög. Afr. iii. p. 172 (1904).

Nigrita canidorsalis (laps. cal.), Reichen. J. f. O. 1887, p. 41.

Type. Similar to *P. arnaudi*, but differing in its greyer back, more dusky grey scapulars, pale grey head, and the absence of any black band on the tail; lores black.

Forehead, crown and nape pale grey; mantle and scapulars dusky grey; lesser wing-coverts blackish grey; lores black; a ring of whitish feathers round the eye; remainder of sides of head, neck, rump, entire under parts, tail and greater wing-coverts pale brown; primary-coverts and quills black; median coverts black, edged with pale brown, this shade extending over the entire outer web of the innermost feathers; under

wing-coverts and inner margins of the quills pale brown. "Iris brown; bill black; feet reddish brown." Total length 4.4 inches, culmen 0.45, wing 2.5, tail 1.4, tarsus 0.8.

Fischer's Grey-headed Social-Waxbill inhabits the country at the south end of the Victoria Nyanza.

The types were collected by Fischer on the Wembere Plateau, and at Nassa on Speke's Gulf. The species has also been obtained by Emin at Usambiro.

Philetairus emini.

Nigrita emini, Reichen. J. f. O. 1891, pp. 158, 210 *Mahalala*.

Philæterus emini, Shelley, B. Afr. I. No. 377 (1896).

Pseudonigrita emini, Reichen. Vög. Afr. iii. p. 173 (1904).

Type. Similar to *P. dorsalis*, but paler; head and back pale brown; sides of tail black. Iris pale brown; bill black; feet flesh colour. Total length 4.7 inches, culmen 0.4, wing 2.6, tail 1.3, tarsus 0.7. ♂, ♀, 11. 7. 90. *Mahalala* (Emin).

Emin's Social-Waxbill inhabits Ugogo.

All that is at present known regarding the species is that Emin procured a pair, the types, at *Mahalala* in Ugogo.

Philetairus cabanisi.

Nigrita cabanisi, Fisch. and Reichen. J. f. O. 1884, p. 54 *Pare*; Shelley, B. Afr. I. No. 373 (1896).

Philetærus cabanisi, Shelley, *Ibis*, 1888, p. 292, pl. 6; Sharpe, *Cat. B. M.* xiii. p. 251.

Pseudonigrita cabanisi, Reichen. Vög. Afr. iii. p. 173 (1904).

Adults. Entire head above the cheeks jet black; back and sides of neck, upper back and wings drab brown, shading into dark brown on the upper tail-coverts; tail brownish black, with a trace of white terminal margins on some of the feathers; axillaries, and inner half of the under wing-coverts, white; inner edges of the quills pale brown. Cheeks and under parts pure white, with the flanks and outsides of the thighs brown; the white feathers which margin the brown flanks have broad black ends, and there is a patch of

black on the middle of the chest. "Iris crimson; bill white, base of lower mandible tinged with yellowish green; legs brownish flesh colour." Total length 4.8 inches, culmen 0.6, wing 2.7, tail 2.0, tarsus 0.7. ♂, ♀, 14. 3. 87. Kilimanjaro (Jackson).

Cabanis's Social-Waxbill inhabits Eastern Africa between 6° S. lat. and 8° N. lat.

In its most southern known range, Fischer discovered the type on the Pare Plateau, and remarked that the sexes are alike in plumage. He considered the species rare in the country he traversed between the Pare Mountains and the Pangani; they were frequenting the acacia and euphorbia trees, where he found a colony of four or six of their nests, which much resembled those of *P. arnaudi*, and had two entrance passages, one leading into the breeding chamber for the hen, the other into a guard-room for the cock. He also found the species at Loeru and Kibaia, breeding in September. Mr. Jackson obtained specimens on the Sagouvi Mountains of the Kilimanjaro district, where a small colony were constructing nests in a table-topped mimosa tree, in March, 1887; so these birds have apparently a spring as well as an autumn breeding season. In the British Museum there are two specimens of Lord Delamere's collecting, from the Waso Nyro River, and three of Mr. Gillett's from Darar, in Somaliland. In this latter country the species has also been met with by Dr. Donaldson Smith at Dabulli.

Genus III. NIGRITA.

Bill widened, broader than deep at the nostrils, and compressed at the sides of the end half; nostrils open just in front of the frontal feathers; cutting edge of upper mandible festooned. Wing rounded; primaries 1, small, narrow and sharply pointed; 2, shorter than 5; 3 and 4, longest. Tail fan-shaped, feathers rather broad. Tarsi and feet moderate. Plumage of sexes generally, but not always, alike; tail entirely black.

Type.

- Æthiops (non Martin) Strickl. P. Z. S. 1841, p. 30 . . . *N. canicapilla*.
 Nigrita, Strickl. P. Z. S. 1842, p. 145 *N. canicapilla*.
 Percnopsis, Heine, J. f. O. 1860, p. 144 *N. fusconota*.
 Atopornis, Reichen. and Neum. Orn. Monatsb. 1895, p. 74 *N. diabolica*.

The genus is confined to Tropical Africa and comprises nine species. Its members not having received an English name, I propose to call them Negro-Finches.

KEY TO THE SPECIES.

- a.* Under parts white ; entire upper half of head glossy black.
*a*¹. Middle back brown, like the mantle *fusconota*. 137
*b*¹. Middle back buff, contrasting with the brown mantle *uropygialis*. 137
b. Under parts not white ; entire upper half of head not black.
*c*¹. Under parts deep chestnut.
*a*². Upper parts more slate grey *bicolor*. 137
*b*². Upper parts brown *brunnescens*. 137
*d*¹. Under parts not chestnut.
*c*². Under parts black.
*a*³. Forehead black.
*a*⁴. Bill slightly longer and narrower at the gape ; greater wing-coverts and the innermost quills tipped with white *canicapilla, ad.* 137
*b*⁴. Bill slightly shorter and broader at the gape ; a little smaller.
*a*⁵. Greater wing-coverts and innermost secondaries tipped with whitish *diabolica*. 137
*b*⁵. Greater wing-coverts and quills with no whitish terminal marks.
*a*⁶. Wing-coverts with narrow white bars *emilia, ad.* 137
*b*⁶. Wing-coverts with rounded white spots *schistacea*. 137
*c*⁵. Entire upper surface of wings black ,, var. *juv.*
*b*³. Forehead buff *luteifrons, ♂ ad.* 137
*d*². Under parts lead grey, or darker slate colour.
*c*³. Forehead buff ; under parts lead grey *luteifrons, ♀ ad.*
*d*³. Forehead slate colour *Young of the above black breasted species.*

Nigrita fusconota.

- Nigrita fusconota*, Fraser, P. Z. S., 1842, p. 145 *Fernando Po*; id. Zool. Typ. pl. 49 (1849); Shelley, B. Afr. I. No. 371 (1896); Reichen. Vög. Afr. iii. p. 168 (1904).
Percnopsis dorsofusca, Heine. J. f. O. 1860, p. 144.
Nigrita pinaronota, Sharpe, Cat. B. M. xiii. p. 318 (1890).

Adults. Upper half of the head, back of upper neck, upper tail-coverts, lesser wing-coverts, edges of median coverts and of a few of the scapulars glossy violet-shaded black; rump and tail dull black; remainder of the back of the neck and back, and inner portion of wing, uniform earth brown; outer portion of wing dark brown, with the under coverts and the inner margins of the quills white; lower half of the head and the entire under parts white. "Iris brown; bill black; feet grey" (Preuss). Total length 4.2 inches, culmen 0.4, wing 2.1 and 2.0, tail 2.0, tarsus 0.55. ♂, ♀, Fernando Po (Alexander).

Fraser's White-breasted Negro-Finch ranges from Fernando Po into the Ruwenzori Mountains and the Congo district.

The type, which was discovered at Clarence, on Fernando Po, by Fraser, is now in the British Museum. Regarding its occurrence on this island Mr. Boyd Alexander writes: "Rare. Found on high ground, frequenting the topmost branches of tall trees in sunny clearings." In Camaroons it has been procured by Dr. Preuss, in the highlands at Buea, and by Mr. Bates at the Ja River; in Central Africa by Mr. Jackson, from the Ruwenzori district; and in Gaboon Du Chaillu collected specimens at the Moonda and Camma Rivers. I do not find the species yet recorded from the Congo River, but it would appear to be abundant in Loango, having been met with there at Chinchonxo by Falkenstein, and at Landana by Lucan and Petit.

Nigrita uropygialis.

Nigrita uropygialis, Sharpe, Ibis, 1869, p. 384, pl. 11, fig. 1 *Fantee*;
Sharpe, Cat. B. M. xiii. p. 319, *Gold Coast*; Shelley, B. Afr. I.
No. 372 (1896); Reichen. Vög. Afr. iii. p. 168 (1904).

Adult. Distinguished from *N. fusconota* only by the entire middle back being isabelline buff. Total length 4·5 inches, culmen 0·35, wing 2·1 and tail 1·9, tarsus 0·55. ♂, ♀, *Fantee*.

Sharpe's White-breasted Negro-Finch inhabits the Gold Coast.

There are in the British Museum eight specimens from *Fantee*, collected by Ussher and others between Cape Coast and the more inland forest of Denkera. The late Governor Ussher wrote: "Though not so common as *N. emiliæ*, this species is still not rare, Aubinn having procured me several specimens."

Nigrita bicolor.

Pytelia bicolor, Hartl. Syst. Verg. Brem. 1844, p. 76 *Gold Coast*.
Nigrita bicolor, Sharpe, Cat. B. M. xiii. p. 318 (1890) pt. *Gold Coast*;
Shelley, B. Afr. I. No. 370 (1896); Reichen. Vög. Afr. iii. p. 167
(1904).

Adult. Upper parts slate colour; front of crown, sides of head and entire under parts deep vinous chestnut; wings dark brown, with slate-coloured edges to the coverts; under wing-coverts and inner margins of quills whitish; tail entirely black. Iris crimson; bill black; tarsi and feet brown. Total length 4 inches, culmen 0·4, wing 2·3, tail 1·7, tarsus 0·55. ♂, ♀, 22. 2. 72. Abouri (Shelley).

Immature. Differs in being duller, with the forehead and sides of head slate grey, fading into pale ash on the chin and upper throat; under surface of body paler and more tawny brown. *Fantee* (Aubinn).

The Northern Chestnut-breasted Negro-Finch ranges from Senegambia to the Volta River.

The species is represented in the British Museum from Sierra Leone, Liberia and the Gold Coast. Verreaux received

it from Casamance; Demery met with it along the Sulymah River, and Mr. Büttikofer in Liberia, frequenting the Bush near Fisherman's Lake in Monrovia and on Mount Olive. The type is a specimen in the Bremen Museum from the Gold Coast. The species appeared to me to be abundant in the forests surrounding Abrobonko and Abouri. Aubinn procured it in the Denkera forest, and Ussher met with it during an expedition up the Volta River, which is the most eastern range known for the species.

Nigrita brunnescens.

Nigrita bicolor brunnescens, Reichen. Orn. Monatsb. 1902, p. 173 *Camaroons, Gaboon*.

Nigrita brunnescens, Reichen. Vög. Afr. iii. p. 167 (1904).

Nigrita bicolor, Sharpe, Cat. B. M. xiii. p. 318 (1890) pt. *Camaroons, Gaboon*.

Nigrita bicolor saturator, Reichen. Orn. Monatsb. 1902, p. 173 *Upper Congo, Uvamba*.

Nigrita brunnescens saturator, Reichen. Vög. Afr. iii. p. 167 (1904).

Differs from *N. bicolor* only in the upper parts being rufous brown, with rarely any grey shade. ♂, ♀, 6. 04. River Ja (Bates).

The Southern Chestnut-breasted Negro-Finch ranges from Prince's Island and the Niger into the Congo district, eastward to Uvamba.

This form may be regarded as a subspecies of *N. bicolor*, but its characters, though slight, are very constant. On Prince's Island it has been procured by Mr. Keulemans, who found it to be "of a solitary, shy nature, frequenting the rivulets and mountain streams, disappearing quickly in the rank vegetation when disturbed. Its song resembles that of the Yellowhammer (*Emberiza citrinella*). It is known by the natives as the 'Liwi-gigon.' The males have the iris bright cherry-red, in the females it is pale brown." Specimens have been obtained in the Lower Niger district by Dr. Ansorge.

Through the kindness of Dr. Reichenow I have been able to compare one of Dr. Preuss's typical specimens from Buea with the British Museum collection, and find it there well represented; from Camaroons, by one of Crossley's specimens, and by six shot by Mr. Bates at the Ja River; one from Gaboon, and one, in fine plumage, obtained by Jameson at Yambuya, close to the junction of the Aruwimi with the Congo River.

I doubt whether *N. bicolor saturator*, Reichenow, known only by the type from "Atjanga in Uvamba, July (Emin)," is distinct from *N. brunnescens*.

Nigrita canicapilla.

Æthiops canicapilla, Strickl. P. Z. S. 1841, p. 30 *Fernando Po*.

Nigrita canicapilla, Fraser, Zool. Typ. pl. 48 (1849); Sharpe, Cat. B. M. xiii. p. 315 (1890); Shelley, B. Afr. I. No. 365 (1896); Reichen. Vög. Afr. iii. p. 170 (1904).

Nigrita cinereicapilla (laps. cal.), Sharpe, Ibis, 1869, p. 385.

Adults. Forehead and front of crown jet black, like the entire sides of the head and the under parts; hinder half of the crown and neck and the mantle deep lead grey, fading into a white margin next to the black of the head and middle throat; the back fading into white just below the middle, and then shading again into grey on the rump; upper tail-coverts dusky black; tail entirely jet black; wings black, with fairly large white terminal spots to the lesser, median and greater coverts and the innermost secondaries; lining of wing dusky black, with paler inner edges to the quills, and the coverts white, with a border of black and white next to the bend of the wing. "Iris yellow; bill black; tarsi and feet brown." Total length 5.4 inches, culmen 0.5, wing 2.8 and 2.75, tail 2.0, tarsus 0.65. ♂, ♀, Fernando Po (Alexander).

Immature. Upper parts darker and more slaty grey than in the adults; pale border between the grey and black of the head and neck less sharply defined; middle and lower back ashy grey; wings with the lesser coverts entirely black, or with three small white spots; median coverts with three small whitish terminal spots; greater coverts and innermost secondaries with dusky white tips; under parts mottled, dusky grey and black. Gaboon (Verreaux); Landana (Petit).

Strickland's Negro-Finch ranges over West Africa from Abeokuta on the Slave Coast and the Lower Niger into Angola.

The British Museum contains a specimen from Abeokuta (Robin), three of the typical examples from Fernando Po, a male and two females from the Ja River in Camaroons (Bates), several from Gaboon (Du Chaillu), three males and a female from Chinchonxo and Landana (Petit), a male and female from the Aruwimi River (Jameson), and one of Hamilton's from Angola.

The species was discovered by Fraser on the Island of Fernando Po, where, according to Mr. Boyd Alexander, "this species is widely distributed on the high ground, frequenting thick trees in pairs. In flight the white on the rump is very conspicuous." In Camaroons it is abundant, and Mr. Sjöstedt found it there at Bibundi and Bonge. He remarks that it is not often seen in mid-day, but towards twilight passed the station in noisy swarms to roost in the cotton plantations. It feeds on seeds, larvæ and small snails. In the most southern range known for these Negro-Finches they have been procured by Hamilton at Casengo and Galungo Alto near the Quanza River, and eastward by Bohndorff at Kibonge on the Congo, in nearly 1° S. lat.

Nigrita diabolica.

Atopornis diabolica, Reichen. and Neum. Orn. Monatsb. 1895, p. 74
Kifnika.

Nigrita diabolica, Reichen. Vög. Afr. iii. p. 171 (1904).

Artomyias diabolica, Shelley, B. Afr. I. No. 1331 (1896).

Nigrita kretschmeri, Reichen. Orn. Monatsb. 1895, p. 187 *Kifnika*.

Nigrita dohertyi, Hartert, Bull. B. O. C. xii. p. 12 (1901) *Mau*.

Type of N. dohertyi. Intermediate between *N. canicapilla* and *N. emilia*, resembling the former in its general colouring and in having white tips to

the greater wing-coverts and innermost quills; but differing from *N. canicapilla*, and resembling *N. emiliæ* in its slightly smaller size, especially that of the bill, and in the white markings on the wings inclining more to bars than to rounded spots. "Iris reddish white; bill black; feet dark brown." Total length 4.4 inches, culmen .045, wing 2.6, tail 1.9, tarsus 0.65. ♂, 1. 01. Mau Escarpment (Doherty).

The Masai Negro-Finch inhabits the country to the east of the Victoria Nyanza.

The type, a hen-bird, was discovered by Mr. Oscar Neumann at Kifinika, on Mount Kilimanjaro, at an elevation of 9,000 feet. Owing to its very unfinch-like, wide bill, it was first referred to the *Muscicapidæ*, and a new genus, *Atopornis*, was proposed for its reception. From its colouring and description of its generic characters I was led, in 1896, to place it in the genus *Artomyias*.

The next specimen procured was met with at the same place by Dr. Kretschmer, and owing to its being in apparently more immature plumage, was given the name of *Nigrita kretschmeri*. It has been recognised by Dr. Reichenow that these two specimens are not specifically distinct, and on comparing the type of *N. dohertyi*, he found that bird also to belong to the present species. The late William Doherty obtained several specimens on the Mau Escarpment, near the Equator, at an elevation of 8,500 feet. Thus, as far as we know, this Negro-Finch is confined to the high mountains.

Nigrita emiliæ.

Nigrita emiliæ, Sharpe, Ibis, 1869, p. 384, plate 11. fig. 2 *Fantee*; Sharpe, Cat. B. M. xiii. p. 316 (1890); Shelley, B Afr. I. No. 366 (1896); Reichen. J. f. O, 1902, p. 37 *Togo*; id. Vög. Afr. iii. p. 169 (1904).

Type. Similar to *N. canicapilla*, but differs in having the lower back greyer; upper tail-coverts blacker; upper surface of wing less spotted with white, the white marking being confined to the lesser and median coverts,

forming terminal bars to these feathers. "Iris red; bill and feet black" (Büttikofer). Total length 4.1 inches, culmen 0.45, wing 2.5, tail 1.7, tarsus 0.6. Fantee.

Immature. Uniform sooty black, slightly greyer on the lower back, and blacker on the upper tail-coverts and tail; under surface of wings dusky brown, with paler edges to the quills and under wing-coverts, the inner portion of the latter and the axillaries pure white. "Iris yellowish white; bill black; feet smoky brown" (Büttikofer). Wing 2.4. Volta River (Ussher).

Emily's Negro-Finch ranges from Sierra Leone into Togoland.

In the British Museum there is a specimen from Sierra Leone, which was formerly in the late Lord Tweeddale's collection, and Mr. Kemp has procured one at Bo. Demery met with these birds at the Sulymah River, and Mr. Büttikofer at Schieffelinsville and Hill Town, in Liberia. The latter naturalist first described the immature bird, showing that the colouring varies with age, a common character in the members of this genus, and in the present instance the peculiar white marking on the wing-coverts is attained by age only.

The type was discovered by the late Governor Ussher in Fantee, where he found the species to be common at Cape Coast and the Forest of Denkera, as well as at the Volta River. During my short visit to the Gold Coast with T. E. Buckley, we found the species frequenting the more wooded districts, and brought home a specimen from Abouri, in the Aguapim Mountains, where Dr. Reichenow found it abundant. Mr. Boyd Alexander met with it at Prahsu, and Mr. Baumann at Akome and Podji in Togoland.

In the British Museum there are fourteen specimens from the Gold Coast, of which four are immature, including one passing into full plumage. Its occurrence in Gaboon I look upon as extremely improbable. Dr. Oustalet records a specimen in M. Avinene's collection from that country, and in

the British Museum there is one of Verreaux's specimens labelled "Gaboon."

Nigrita schistacea.

Nigrita schistacea, Sharpe, Ibis, 1891, pp. 118, 251 *Sotik*; Shelley, B. Afr. I. No. 367 (1896); Reichen. Vög. Afr. iii. p. 169 (1904).

Nigrita sparsimguttata, Reichen. J. f. O. 1892, pp. 47, 132 *Bukoba*; Reichen. Vög. Afr. iii. p. 170 (1904).

Nigrita canicapilla (non Fraser) Emin, J. f. O. 1891, p. 346 *Bukoba*.

Nigrita canicapilla sparsimguttata, Hartert, Nov. Zool. 1900, p. 42 *Toru*.

Type. Very similar to *N. canicapilla*, especially to an immature hen, from Landana, but differs in having no trace of white on the greater wing-coverts, nor on any of the quills; most of the smaller, and a few of the median, wing-coverts have small pure white spots; under parts jet black, with the exception of very narrow, almost obsolete, whitish edges to the feathers of the flanks, abdomen and under tail-coverts. "Iris yellow; bill black; legs brown." Total length 5.5 inches, culmen 0.45, wing 2.6, tail 2.0, tarsus 0.7. ♀, 3. 10. 89. *Sotik* (Jackson).

Male in breeding plumage. Differs in the upper parts being slightly paler and the lower back much whiter; little or no trace of white edges to the feathers of the flanks, abdomen, or thighs. ♂, 2. 7. 98. *Nandi* (Jackson).

Young. Nearly uniform slate grey, or dusky ash, rather blacker on the forehead, throat, wings and tail, and a trace of ashy white on the rump; lesser and median wing-coverts with a few very obscure ashy white spots.

Variety. Differs from the last in having the forehead, sides of head and under parts blacker, with a few ashy white feathers on the nape; rather less white on the rump; no trace of whitish marks on any of the wing-coverts. ♂, juv. 2. 7. 98. *Nandi* (Jackson).

Jackson's Negro-Finch inhabits Central Equatorial Africa.

Mr. Jackson discovered the type, a rather dull-coloured female, apparently in winter plumage, at *Sotik* on the border of the *Mau Forest*, October 3, 1889. I have also examined his fine series of six specimens from *Nandi*, and five collected during the expedition into the *Ruwenzori Mountains*. The winter plumage is represented by the type procured in October, a male killed in February, and a female in April; in these the

upper parts are dark, with less white on the lower back and some white edges to the feathers of the flanks, abdomen and under tail-coverts. In the other specimens the under parts are uniform black, and the adult males and females have the upper parts paler and brighter, while the lower back is washed with white to about the same extent as is generally the case in *N. canicapilla*. The winter dress is apparently discarded in April, for the specimen procured by Dr. Anson at Kichuchu in Toru, April 5, 1899, is in breeding plumage. A very similar bird to the last mentioned was shot by Mr. Jackson in Nandi, July 2, 1898, and on the same day he killed a specimen with no trace of white on the upper surface of the wing.

The type of *N. sparsimguttata* was procured at Bukoba, on the western side of Victoria Nyanza, by Emin, who also obtained specimens at Ipoto, Awamba and Irumu.

Nigrita luteifrons.

Nigrita luteifrons, Verr. Rev. et Mag. Zool. 1851, p. 420 *Gaboon*; Sharpe, Cat. B. M. xiii. p. 317 (1890); Shelley, B. Afr. I. No. 368 (1896); Reichen. Vög. Afr. iii. p. 168 (1904).

Nigrita lucieni, Sharpe and Bouvier, Bull. S. Z. France, 1878, p. 75 *Ungomongo*; Sharpe, Cat. B. M. xiii. p. 317 (1890); Shelley, B. Afr. I. No. 369 (1896).

Adult male. Forehead and front of crown buff, shading into lead grey on the hinder half of the crown and back of neck; upper back and upper tail-coverts darker grey; middle and lower back pale lead grey; wings and tail black, with a wash of grey on the lesser wing-coverts and scapulars; under surface of wings dusky black, with whitish inner margins to the quills, and the coverts white, with a border, next to the bend of the wing, black; sides of head and neck and the entire under parts jet black. "Iris black; bill black; tarsi and feet flesh colour." Total length 4.2 inches, culmen 0.4, wing 2.4, tail 1.6, tarsus 0.6. ♂, 31. 10. 02. Fernando Po (Alexander).

Adult female. Differs in the side of the head having only a dusky black patch round the eye, extending forward to the bill; remainder of the sides of the head and neck and the entire under parts lead grey; under wing-

coverts next to the bend of the wing greyish white. "Iris and bill black; tarsi and feet flesh colour." Wing 2.4. ♀, 31. 10. 02. Fernando Po (Alexander).

Immature. Differs in the forehead, crown and sides of head being uniform grey, with a few black feathers in front of the eye. ♀, 11. 11. 02. Fernando Po (Alexander).

The Pale-fronted Negro-Finch ranges from the Niger to the Congo.

In its most northern known range, Lower Nigeria, the species has been procured by Dr. Ansorge. On the island of Fernando Po it is, according to Mr. Boyd Alexander, locally distributed, and fond of frequenting the tops of tall palm-trees, where it nests; he writes: "We often observed it in sunny spots hawking in the air for flies. It is very interesting to have come across both a male and a female of this species, as the latter sex was previously considered to belong to another species—*Nigrita luciæni*."

In Camaroons Crossley procured a male, Dr. Preuss a female at Buea, and Drs. Reichenow and Lühder likewise met with it in that country. The species was first described from Gaboon by Verreaux, and one of his typical specimens is in the British Museum, where there are also two males and two females collected in that country by Du Chaillu, the latter agreeing well with the type of *N. luciæni* which was obtained by Petit at Ungomongo in the Congo Free State. The species has also been met with by Marche and De Compiègne in the Ogowé district of Gaboon, and by Bohndorff at Manyanga on the Lower Congo.

Genus IV. PADDA.

Bill pink, rather large and stout; nostrils hidden by the frontal feathers. Wing rounded, secondaries reaching to the tip; primaries 2, 3 and 4 longest and broader than in *Munia*, Hodgs., to which genus it is nearly allied. Tarsi and feet pink and of moderate size.

Type.

Padda, Reichenb. Syst. Nat. pl. 76, fig. 6 (1850) *P. oryzivora*.
Oryzornis, Cab. Mus. Hein. i. p. 174 (1851). *P. oryzivora*.

The genus is represented in the Ethiopian region by the Java Sparrow, an introduced bird which has established itself in Tropical Africa and the islands of Seychelles, Mauritius and St. Helena.

Padda oryzivora.

Loxia oryzivora, Linn. S. N. i. p. 302 (1766) *Asia*.
Padda oryzivora, Melliss, Ibis, 1870, p. 100 *St. Helena*.
Munia oryzivora, Sharpe, Cat. B. M. xiii. p. 328 (1890); Hartl. Abhandl. nat. Ver. Brem. 1891, p. 19 *Nguru*; Finn, Ibis, 1892, p. 226 Zanzibar; Reichen. Vög. D. O. Afr. p. 183 (1894) *Nguru*; Butler, Foreign Finches in Captivity, p. 248, pl. 44 (1894); Shelley, B. Afr. I. No. 362 (1896); Nehr Korn, Kat. Eiers. p. 126 (1899) *egg*; Neum. J. f. O. 1900, p. 283 *Zanzibar, Tanga, Usegua*.
Oryzornis oryzivora, Reichen. J. f. O. 1889, p. 283 *Zanzibar*.
? *Loxia sanguinirostris*, Linn. S. N. (x.) p. 173 (1758); id. (xii.) i. p. 303 (1766) *Asia*.
Loxia javensis, Gm. S. N. i. p. 850 (1788).
Emberiza calfat, Gm. t. c. p. 889.

Adult. Upper half of the head, chin and upper throat black, with a large patch of pure white on the sides of the head, extending over the cheeks and ear-coverts and margined behind by a streak of black from the nape to the middle throat; neck, back, greater portion of wings and front of chest lavender grey; rump, upper tail-coverts and tail black; primary-covert, primaries and wing-lining dusky brown, with the inner edges of the quills and the coverts white; lower breast mauve pink, fading into white on the under tail-coverts. "Iris brown; bill and feet pink." Total length 5.6 inches, culmen 0.65, wing 2.65, tail 2.0, tarsus 0.7. ♂, 18. 9. 75. Singapore (W. Davison).

The Java Sparrow, or Padda-bird, is a native of Java, Sumatra and Malacca, and has become acclimatised in many other places, as India, Ceylon, East Africa, the Seychelles, Mauritius and St. Helena islands.

Regarding its occurrence on St. Helena Mr. Melliss wrote in 1870: "A tolerably abundant bird, inhabiting the low rocky lands on the northern side of the island, where they are frequently seen hopping about in pairs; but they are seen in flights in the interior when the corn is ripening. It is not many years since this bird was introduced. It appears to thrive well and to be increasing in numbers."

In the British Museum there are specimens from Mauritius, the Seychelle Islands, Zanzibar and Pangani, and it is fairly distributed over East Africa within a radius of 300 miles from Zanzibar.

Mr. Allan Hume describes a nest as placed in a thorn-bush, 7 or 8 feet from the ground, "globular and very large, chiefly composed of fine grass, but with a few broad-bladed leaves of millet intertwined. The entrance small, circular, and lateral." The eggs, five in number, "were very regular ovals, pure glossless white, and varied from 0.7 to 0.75 × 0.55." Dr. H. A. Bernstein gives a very different description of the nests and eggs: he found them, sometimes at the summit of various trees, sometimes among the numerous creepers which cover the stems of the areng palm. They varied in size and form, according to their position; whilst those attached to trees were for the most part larger and possessed, on an average, a fairly regularly half-ball-shaped form, those placed among creepers on the stems of areng palms were smaller and of a less decided, irregular form, only slightly hollowed out in the centre. All nests, however, were almost exclusively composed of the stalks of various grasses, which were not very firmly twisted together, so that the whole building was of no

great solidity. The number of the shining white, somewhat long-shaped eggs, varied between six and eight in number. These measured 0.84×0.56 .

Dr. Butler informs us: "The female is usually a little smaller than the male and (as Mr. Abraham has pointed out), has a narrower, more tapering beak, less swollen at the base." He also mentions: "The love-dance of the Java Sparrow is very ludicrous; he bends his body like an arch over the perch, turns his head sideways towards the female, and lifts himself jerkily up and down, singing all the while, and gradually sidling up to his mate."

I cannot agree with those ornithologists who refer the name *Loxia sanguinirostris*, Linn., to the Dioch, *Quelea quelea* (Linn.). Linnæus described his bird as having the feet red like the bill, as Asiatic, and on comparing it with Edwards's red-billed "Brazilian Sparrow," writes: "Sed subtus maculata non mea." This shows that Linnæus's description was not taken from Edwards's "Gleanings," p. 128, p. 271, fig. 2; but possibly from a young specimen of the Java Sparrow, with which his description most nearly agrees

Genus V. UROLONCHA.

Bill stout and swollen at the base, which ends in a right angle on the forehead; culmen flattened and curved; keel straight; edges of upper mandible festooned; nostrils hidden by the frontal feathers. Wing rounded; primaries 1, small, narrow and pointed; 2, 3 and 4, longest. Tail moderately long and fan-shaped, with the centre pair of feathers more elongated and narrowing into points. Tarsi and feet moderate.

	<i>Type.</i>
Uroloncha, Cab. Mus. Hein. i. p. 173 (1851)	<i>U. molucca.</i>
Aidemosyne, Reichenb. Singv. p. 14 (1863)	<i>U. modesta.</i>
Euodice, Reichenb. t. c. p. 46.	<i>U. cantans.</i>

The genus, as I understand it, ranges from Senegambia to New Guinea, and comprises some eighteen species, of which two are natives of Tropical Africa, and one only is confined to that continent. These are known to dealers in cage-birds as Silver-bills.

KEY TO THE SPECIES.

- a.* Rump and upper tail-coverts white; breast rufous buff *caniceps*.
b. Rump and upper tail-coverts black; breast white *cantans*.

Uroloncha caniceps.

Pitylia caniceps, Reichen. Orn. Centralbl. 1879, p. 139; id. J. f. O. 1879, pp. 326, 352, pl. 2, fig. 3 *Nassa*.
Uroloncha caniceps, Sharpe, Cat. B. M. xiii. p. 356 (1890); Shelley, B. Afr. I. No. 363 (1896).
Spermestes caniceps, Reichen. Vög. Afr. iii. p. 154 (1904).

Adult. Head and upper neck grey, with a few whitish tips to the frontal feathers; remainder of the neck and the mantle pale cinnamon; lower back and upper tail-coverts pure white; tail black, the outer pair of feathers whitish towards the end of the outer web; wings, with the coverts, scapulars and inner secondaries slightly darker brown than the upper back; remainder of the quills blackish brown, with the inner webs tinted with rufous; under wing-coverts rufous buff; in front of the eye black; feathers of the cheeks, ear-coverts and region of the chin, with white tips and black subterminal bars, giving these parts a closely spotted appearance; the pale cinnamon of the lower neck gradually fading into buff on the lower breast, thighs and under tail-coverts. "Iris brown; bill bluish grey; feet greyish brown." Total length 4·7 inches, culmen 0·4, wing 2·35, tail 2·0, tarsus 0·55. ♂, 23. 4. 81. Tarrangola (Emin).

The Grey-headed Silver-bill replaces *U. cantans* in the Victoria Nyanza district, from the south of that lake to 5° N. lat.

The type, a female, was discovered at Nassa on Speke's Gulf, by Fischer, who procured a cock-bird in like plumage in the adjoining Wembere country. Mr. Jackson has met with the species to the north-east of the lake, and writes: "First seen in small flocks of from eight to ten at Karahan, in Suk. Feeds on minute grass-seeds." Lord Delamere has met with it at the Waso Nyro River, and Emin at Tarrangole and at Lado, which is the most northern range known for the species.

Uroloncha cantans.

- Loxia cantans*, Gm. S. N. ii. p. 859 (1788). *Bonaparte's Illust. p. 66 in dark, head, etc.*
Urobrachya cantans, Shelley, B. Afr. I. No. 364 (1896); Chalmley, Ibis, 1897, p. 206 *Haddai*.
Aidemosine cantans, Sharpe, Cat. B. M. xiii. p. 371 (1890); Butler, Foreign Finches in Captivity, p. 201, pl. 38, fig. 2 (1894); Nehr Korn, Kat. Eiers. p. 127 (1899) *egg*; Reichen. Vög. Afr. iii. p. 156 (1904).
Habropyga cantans, Kuschel, J. f. O. 1895, p. 339 *egg*.
Ædemosyne orientalis, Lorenz and Hellmayr, Orn. Monatsb. 1901, p. 39; id. J. f. O. 1901, p. 232, *N. E. Afr., Arabia*.
Ædemosyne cantans orientalis, Reichen. Vög. Afr. iii. p. 156 (1904).

Adult. Upper parts brown, paler on the head, mantle and inner portion of the wings, and dark sepia brown on the remainder of the wings, the rump, upper tail-coverts and tail; forehead, crown and back of neck with dark shaft-stripes, and buff edges to the feathers towards the forehead, which has a scale-like appearance; mantle and inner secondaries with narrow, darker brown bars; under wing-coverts and inner edges to the quills buff; sides of head and neck pale brown; under parts white, shaded with brownish buff on the throat and flanks; feathers of the chin and upper throat with cinnamon centres, giving a scale-like appearance; sides of crop and the flanks indistinctly barred with brown. "Iris brown; bill lead-blue; legs dusky." Total length 4.3 inches, culmen 0.4, wing 2.1, tail 1.8, tarsus 0.45. ♀, 13. 12. 02. Kawa (A. L. Butler.)

The Warbling Silver-bill ranges eastward from Senegambia by Gambago into Eastern Africa, from Zanzibar to Bogosland and Shendi on the Nile, in about 17° N. lat., extending also into South Arabia.

The type of Latham's Warbling Grosbeak probably came from Senegambia, as the species was known to Vieillot from that country, where it has since been met with by Marche and De Compiègne at Dakar on Cape Verde, by Peyés at Casamanse, and by Dr. Percy Rendall at Bathurst, where he obtained two specimens and the pendent nest, which contained white eggs. The eggs measure 0.6 × 0.42, and according to Dr. Russ, these birds sometimes lay as many as nine in a nest. The most southern range in West Africa yet known for

the species is Gambaga in the "hinterland" of the Gold Coast, where it has been procured by Mr. Boyd Alexander.

The species is apparently more abundant eastward; it formed part of Petherick's collection from Kordofan; Mr. Hawker considered it common at Kaka, on the White Nile, 10° 30' N. lat., and found a nest there, with young birds, in March. Further down the Nile, within 140 miles from Khartoum, Mr. Witherby met with the species moulting and by no means plentiful. After giving a comparison of the old and new plumage he adds: "They were found in parties of five or six, generally sitting close together on a twig of some bush or tree near the river. They seemed most inactive, their sole occupation consisting, apparently, of singing *sotto voce*." Still further down the Nile, at Shendi, the most northern known range for the species, the Hon. N. C. Rothschild and Mr. A. F. R. Wollaston collected five cocks and four hens, and found them to be tolerably common and remarkably tame. "They were very sluggish in their habits and might often be seen in small parties closely huddled together on a branch for hours at a time. Towards the end of February a pair of these birds built a nest in a low bush in the middle of our camp; it was composed almost entirely of scraps of paper and cotton-wool, and was shaped somewhat like a very untidy nest of a Greenfinch. Unfortunately, when two eggs had been laid, the nest was ruthlessly destroyed by a pair of *Passer rufidorsalis*."

Mr. A. L. Butler writes to me from the Soudan: "A common resident, found in flocks, and very sociable, generally perching in trees, two or three together, touching each other. I have met with the species from Galabat, on the Abyssinian frontier, to Kawa on the White Nile, and it occurs round the wells in the otherwise waterless country of Omdurman. At Gedaref, in May, 1901, several pairs were nesting in the thatch

of the verandah, like Sparrows. A female shot at Kawa, November 13, 1902, contained a full-sized egg, and I have found it breeding also in February, March, May, September and October."

From eastward of the Nile it has been found in flocks about Ailet and Ain, in the Anseba Valley, by Dr. Blanford; by Antinori in the village of Aona and near Kursi; Mr. A. J. Cholmley obtained a specimen at Haddai on the Red Sea Coast, and Dr. Ragazzi a single specimen at Shoddé. Heuglin met with the species from Kordofan to the Somali coast in pairs and small flocks. Lord Lovat shot a specimen at Laga Hardin, and others have been procured in this district by Mr. Pease at Dahala and Choba, and at Hensa in Somaliland. In the latter country the species is apparently abundant, for specimens have been collected at a number of places by Dr. Donaldson Smith, Mr. Elliot and Mr. Hawker.

In the district between the Tana River and Victoria Nyanza the species has been procured by Fischer at Mosiro, in Northern Ukamba; by Lord Delamere at the Waso Nyro River, on January 24 and 31, 1900, and on the 26th of the same month he obtained a specimen of *U. caniceps*, showing that the range of the two species meet at this river. Mr. Jackson, on April 2, procured specimens in Southern Ukamba and writes: "I think these are immature birds, as they have scarcely any white spots on the throat or sides of the face. These two specimens were obtained out of a flock at a pool in the wilderness between the River Tsavo and Kibwesi, and were the first I have ever seen in this part of the country. Mr. Oscar Neumann obtained three specimens at Donje Ngai, and remarks that this is the first record from German East Africa. Dr. Reichenow does not mention the species in his work on the birds of that dominion, but specimens have been recorded by Fischer from the Lamu coast and Zanzibar, and also by Böhm from the latter place.

8 / Drs. Lorenz and Hellmayr have separated, under the name of *Aidemosyne orientalis*, a supposed eastern race to include the Arabian and North-east African specimens. This is not, I think, a recognisable subspecies, but those who wish to form their own opinion I would refer to the Ibis for 1901, pp. 247, 519, 615.

Genus VI. ORTYGOSPIZA.

Bill moderately stout, culmen rounded and slightly curved, the base ending on the forehead in a right angle; nostrils hidden by the frontal feathers. Wing rounded; primaries 1 short, narrow and pointed, 2, 3 and 4 longest. Tail short and rounded. Tarsi moderately long; feet and claws slender; the outstretched feet reaching beyond the end of the tail.

Type.

Ortygospiza, Sundev. Öfv. K. Vet. Ak. Förk. Stockh.

1850, p. 98 *O. polyzona.*

The genus is confined to Tropical and South Africa, and comprises two very nearly allied species. It received its Latin name from the general Quail-like colouring of the plumage, and the resemblance is somewhat enhanced by the short tail.

KEY TO THE SPECIES.

- a.* Some white on the chin and round the eyes *polyzona.*
b. No white on the chin nor round the eyes, these parts
 being black *atricollis.*

Ortygospiza polyzona.

Fringilla polyzona, Temm. Pl. Col. iii. p. 37, pl. 221, fig. 3 (1823).

Ortygospiza polyzona, Sharpe, Cat. B. M. xiii. p. 269 (1890); Shelley,

B. Afr. I. No. 389 (1896); Reichen. Vög. Afr. iii. p. 202 (1904);

Clarke, Ibis, 1904, p. 524 *Ingogo.*

Fringilla multizona, Des Murs, Lefeb. Abyss. 1850, p. 117.

Adult male. Differs from that of *O. atricollis* only in having more white on the head; two fairly broad white bands from the nostrils and gape meet

behind the eyes; uppermost portion of the throat as well as the chin white. "Iris hazel; bill bright crimson; tarsi and feet pale fleshy brown." Total length 3.6 inches, culmen 0.35, wing 2.2, tail, 1.1, tarsus 0.6. ♂, 20. 4. 77. Potchefstroom (T. Ayres).

Adult female. Differs in the cheeks and dark portion of the throat being brownish ash, like the sides of the neck. Wing 2.1. ♀, 17. 7. 75. Pine-town (T. L. Ayres).

Temminck's Bar-breasted Mannikin ranges from Angola and Abyssinia, southward into Cape Colony.

The species is rare in Western Africa, but Toulson obtained a specimen at Loanda, in Angola, and Welwitsch met with it at Galungo Alto. In Damaraland Mr. Fleck found it singly, or in pairs, in the neighbourhood of Barmen.

Stark writes: "It is fairly common in the north-east of Cape Colony, in the neighbourhood of Colesberg and Eland's Post. In the Orange River Colony and in the higher part of Natal it is resident and common all the year round; it is rather more local, but still a common species, in many parts of the Transvaal, but becomes rarer to the north of the Limpopo River, in Matabeleland and Mashonaland.

"These pretty little birds are usually met with in small flocks, but occasionally in single pairs, on the open, grassy flats. Here they feed on the ground, under the grass, on the fallen seeds. If disturbed, they rise suddenly, with a curious metallic chirp, fly a short distance and settle again directly on the ground, without first perching on bushes or weeds. As a rule their flight is rapid and direct, but they sometimes rise, with their usual sharp cry, and fall again on the spot from which they rose. Mr. T. Ayres gives the following account of the nest, found near Potchefstroom, on April 30, in the "Ibis" for 1878, p. 297: 'This pretty little fellow I shot as he rose from the nest, where he had evidently been doing duty for his wife, by sitting on the eggs in her absence. The nest was a very rough structure, placed on

the ground amongst the grass and not easily seen, from its being composed of dead blades of grass; it was lined with a few coarse feathers, and in shape was much like the nests of some of the Sunbirds, with a projecting eave over the entrance, but all very rough. The eggs were five in number and pure white; length 0.54; breadth 0.47. Eggs in the South African Museum at Cape Town are rounded ovates, without gloss, and pure white. They average 0.62×0.48 ."

According to Mr. T. Ayres, "this species is common about Rustenburg, and seems pretty well distributed through the Transvaal." He also saw it in Matabeleland. From Salisbury, in Mashonaland, Mr. Guy Marshall writes: "I have noticed this little bird only during the winter months, when it may be seen in considerable flocks in open spaces about the town. It is very tame, allowing approach within a few feet; but even then there is difficulty in detecting it on the ground, owing to its protective upper side colouring and diminutive size." The species is well represented in the British Museum from Eland's Post, Pinetown, Newcastle and the Transvaal, and northward from British East Africa to Abyssinia. From the large extent of country between Mashonaland and British East Africa only a single specimen has been recorded; this is a male procured by Fischer at Wembere, to the south of Victoria Nyanza, in $6^{\circ} 30'$ S. lat. This fact, like Mr. Fleck's record of the species from Damaraland, shows how much we have yet to learn from the field naturalist in Africa.

In British East Africa Mr. Oscar Neumann has recorded it from the Ulu Mountains, and in Lord Delamere's fine collection, which has not yet been described, there are two females, one procured at Ngari, on the Mossor River, and the other at the Waso Nyro River, shot in February, 1900. Mr. Jackson took a nest of this species containing six eggs, at Mau, on

August 4. The nest resembled the one already described. Doherty obtained the species in Kikuyu.

I find no mention of the species from Somaliland; but in Southern Abyssinia Lord Lovat met with it at Jifadensa in January, and at Jaka in February. Mr. Pease, while in this district, procured a specimen at Guelan, in January, and remarks: "Generally found near water on open rolling grass table-lands; it makes a curious clicking noise, which is very difficult to locate; it towers high in the air, and while in flight clicks continually; it falls rapidly to the earth, like a stone." In 1863 Heuglin proposed the name of *O. fuscocrissa* for the birds which he met with in flocks in May, in the Dembea and Tiré districts, and later he remarks that the bird procured by himself, Rüppell and Lefebre, in Abyssinia, appeared to him distinct from the White Nile birds, which he found in the Bongo country. These latter really belong to *O. atricollis*, of which the present form is little more than a subspecies. Heuglin's notes on the habits agree better with those made by the South African field naturalists than with those made by Mr. Pease, in South Abyssinia, who remarks that he found them in flocks with other Finches in the light bush near water. They frequented the ground and flew low, with now and then a shrill cry of "ter-ter" in a trumpet-like tone.

Ortygospiza atricollis.

- Fringilla atricollis*, Vieill. N. Dict. Hist. Nat. p. 182 (1817) *Senegambia*.
Ortygospiza atricollis, Sharpe, Cat. B. M. xiii. p. 270 (1890); Shelley,
 B. Afr. I. No. 390 (1896); Nehr Korn, Kat. Eiers. p. 125 (1899) *egg*;
 Reichen. Vög. Afr. iii. p. 202 (1904).
Amadina lunulata, Hartl. Orn. W. Afr. p. 148 (1857).

Adult male. Forehead black; remainder of the upper parts dark brown, with slightly paler edges to the feathers; under wing-coverts and inner margins to the quills white, the former having a slight rufous tinge; tail with some white towards the ends of the three, sometimes four, outer pairs

of feathers, increasing in amount on the outer pair, which have nearly the whole of the outer web white; sides of head and neck brownish ash, with two imperfect white lines above and below the eye; cheeks and throat black, with a few white feathers on the chin; crop and flanks brownish ash; centre of chest rufous; abdomen buff; crop, fore-chest and flanks strongly barred with black and white; thighs and under tail-coverts rufous buff, mottled with black. "Iris yellow; bill blackish purple, with the lower one rosy red; tarsi and feet brownish." Total length 3.6 inches, culmen 0.3, wing 2.0, tail 1.1, tarsus 0.5. ♂, 19. 1. 84; ♀, 30. 11. 83. Redjaf (Emin).

Vieillot's Barred-breasted Mannikin ranges from Senegambia to the Gaboon, and eastward into the Upper White Nile district.

The types of the species and of *Amadina lunulata* came from Senegambia. With regard to its habits, they should be very similar to those of the better known *O. polyzona*, which can be hardly regarded as more than a subspecies. According to Mr. Nehr Korn the eggs, which are pure white, measure 0.52 × 0.4.

In Liberia Mr. Büttikofer procured a specimen at Monrovia, and Mr. Boyd Alexander met with it in the Gold Coast colony at Bindura. In the British Museum there are specimens procured by Forbes at Lokoja on the Niger; by Du Chaillu in Gaboon, where he met with the species at Cape Lopez and the Camma River; also three of Emin's from Redjaf on the Upper White Nile. In this latter district Heuglin found the species in the Bongo country and along the Gazelle River during the summer, but it was scarce and generally seen in pairs.

Genus VII. SPERMESTES.

Bill smooth, fairly long and stout; deeper than broad, culmen rounded and slightly curved, ending on the forehead in a right angle; nostrils hidden by the frontal feathers. Wing rounded; primaries 1 small, narrow and sharply pointed; 2, 3, 4 and 5 about equal and the longest. Tail short and rounded, reaching just beyond the outstretched feet. Tarsi and feet moderately stout; claws rather long and slender.

	<i>Type.</i>
Spermestes, Swains. Class. B. ii. p. 280 (1837)	<i>S. cucullatus.</i>
Lepidopygia, Reichenb. Singv. p. 48 (1863)	<i>S. nana.</i>
Amaurestes, Reichenb. <i>t. c.</i> p. 86	<i>S. fringilloides.</i>

The genus is confined to the Ethiopian region and comprises seven species, of which one is restricted to the island of Madagascar. These birds are well known as Mannikins, and I include under that English name the two species of *Ortygospiza* and the one of *Nesocharis*.

KEY TO THE SPECIES.

- a.* Breast and under tail-coverts mostly pure white in adults.
Sexes alike in plumage.
- a*¹. Entire head glossy black; no bars on under tail-coverts.
- a*². Rump and upper tail-coverts entirely black.
- a*³. Bill larger, culmen as long as the tarsus; back and wings brown; some clear white streaks on the wing-coverts *fringilloides.* 161
- b*³. Bill smaller. Wing, above black, with a few minute white spots on the secondaries.
- a*⁴. Only 2 to 6 white spots on the wing. *bicolor.* 162
- b*⁴. About 12 white spots on the wing. *punctatus.* 162-1
- b*². With white bars on the rump and basal half of the quills.
- c*³. Mantle black *poensis.* 163
- d*³. Mantle chestnut *nigriceps.* 164
- b*¹. Head bronze; under tail-coverts barred; mantle earth brown.
- c*². A glossy green patch on sides of chest *cucullatus.* 165
- d*². No green patch on sides of chest *scutatus.* 170
- b.* Breast and under tail-coverts buff or brown.
- c*¹. Under tail coverts earth brown, with buff terminal edges.
- e*². Chin and upper throat black *nana, ♂ ad.* 174
- f*². No black on chin or upper throat *nana, ♀.*
- d*¹. No bars on under tail-coverts *Young of all the species.*

Spermestes fringilloides.

- Ploceus fringilloides*, Lafr. Mag. Zool. 1835, pl. 48.
Spermestes fringilloides, Shelley, B. Afr. I. No. 380 (1896).
Amaurestes fringilloides, Sharpe, Cat. B. M. xiii. p. 267 (1890); Butler,
 Foreign Finches in Captivity, p. 254, pl. 45 (1894); Nehr Korn, Kat.
 Eiers. p. 125 (1899) *egg*; Reichen. Vög. Afr. iii. p. 155 (1904).

Adult male. Entire head, and front half of the neck, glossy black, fading into dull blackish brown on the back of the neck; upper and middle back and the wings dark brown; a few indistinct pale brown shaft-stripes on the upper back, and a few distinct white streaks on the median wing-coverts; under wing-coverts buffy white, mottled with brownish at the bend of the wing; rump, upper tail-coverts and tail entirely black; crop, breast and under tail-coverts white; sides of chest black, somewhat mottled with brown and buff towards the abdomen; thighs black and white. "Iris brownish red; upper mandible brownish black; lower one slaty blue, with the edges and tip darker." Total length 4.5 inches, culmen 0.6, wing 2.25, tail 1.5, tarsus 0.6. ♂, 13. 4. 77, Zanzibar. (Fischer).

Adult female. Similar to the male. Wing 2.2. ♀, 16. 4. 77. Zanzibar (Fischer).

The Magpie Mannikin ranges from Senegambia and Zanzibar southward into Natal.

The type of the species came from Senegambia, and there are several specimens in the British Museum from the Gambia. Near Sierra Leone, Mr. Robin Kemp informs me, "These Mannikins are locally abundant, associating freely with *S. cucullatus*. At Rotifunk there was a large colony of them, roosting and nesting in mango, lime and orange trees, in the enclosed compound which contained our bungalows. However, at Bo, eighty miles inland, saw it once only during two years' observation, when I met with three of these birds together, on a rice-farm of a previous year." In Liberia Dr. Büttikofer found the species breeding in November. The nests were usually placed, singly, in forks of fruit-trees, at five to ten feet from the ground, and were very similar to those of other species of *Spermestes*, tolerably large, constructed of grass and various materials, lined with the softer portions of the grass, and were oval in form, with an entrance at the side. The eggs, generally six in number, were pure white, and measured 0.6 × 0.44. Fischer gives a similar description of a nest of this species, containing six white eggs, which he found on the island of Zanzibar.

Mr. R. P. Currie has met with the species in Liberia, and I do not find any more information regarding it from the coast north of the Equator, but inland Dr. Ansorge has found it along the Ituri River. In Western Africa, to the south of the Line, it has been mentioned only by Marche, from Doumé, in Gaboon.

In Eastern Africa its most northern range appears to be Zanzibar Island, where it is plentiful and known to the natives, according to Fischer, as the "Tongo simba." He met with them here frequenting the cultivated fields in parties of six to eight, in company with other members of the genus *Spermestes*, which they resemble in their note and breeding habits. He also obtained the species at Mozambique.

In British Central Africa it has been procured by the Capello and Ivens at Ntenke, near Lake Bangweolo, by Sir Alfred Sharpe at Mtondwe, and by Mr. Whyte at Zomba.

It inhabits the eastern half of South Africa to as far west as Bechuanaland and Natal. From the latter colony there are two specimens in the British Museum, obtained by Mr. T. L. Ayres, at Pinetown, in May and June, and this is all I know for certain regarding the species in South Africa, where it has been either overlooked or not met with by other naturalists, for Stark writes: "I have only occasionally met with this Weaver Finch, nor can I find any record of its habits in a state of Nature."

Spermestes bicolor.

- Amadina bicolor*, Fraser, P. Z. S. 1842, p. 145 *Cape Palmas*; id. Zool. Typ. pl. 50, figs. 2, 3 (1849).
Spermestes bicolor, Sharpe, Cat. B. M. xiii. p. 261 (1890); Butler, Foreign Finches in Captivity, p. 256, pl. 46, fig. 2 (1894); Shelley, B. Afr. I. No. 384 (1896); Nehr Korn, Kat. Eiers. p. 125 (1899) *egg*; Reichen. J. f. O. 1902, p. 36 *Togo*; id. Vög. Afr. iii. p. 151 (1904).

Spermestes punctatus, Heugl. Orn. N. O. Afr. p. 594 note (1870) W. Africa; Sharpe, Cat. B. M. xiii. p. 262 (1890); Shelley, B. Afr. I. No. 385 (1896).

Spermestes bicolor punctata, Reichen. Vög. Afr. iii. p. 152 (1904).

Adult. Entire head, neck and upper parts glossy greenish black, with from two to about a dozen tiny white spots on the secondaries, just beyond the coverts; under surface of quill dusky black, with pale inner edges fading into clear white on the inner quills; axillaries and inner half of the under wing-coverts white, the remainder black, with a few terminal white edges; breast and under tail-coverts white, with the sides of chest black, a line of black feathers surrounding the white of the chest, having broad, white terminal edges. "Iris brown; bill lavender blue; tarsi and feet black" (Kemp). Total length 3.5 inches, culmen 0.4, wing 1.9, tail 1.4, tarsus 0.5. Fantee (Ussher).

Immature. Upper parts and sides of head uniform dusky slate colour; under parts buff, of a dusky shade on the throat and sides of chest; thighs dusky blackish. Rabba (Mochler Ferryman).

Nestling. Uniform earthy brown above; under parts much paler and of a more rufous shade on the breast. Abeokuta (Robin).

The Northern Black-and-white Mannikin ranges from Senegambia into Camaroons.

Verreaux's collection contained the species from Casemanse; Bulger met with it on Bulama Island. From Sierra Leone Mr. Kemp writes: "A common resident at Bo, but apparently replaced by *S. fringilloides* at Rotifunk."

In Liberia, according to Dr. Büttikofer, it is abundant and generally distributed, frequenting human habitations even more than *S. fringilloides*, which it resembles in its habits and feeding. It breeds in the plantations and trees in the middle of the villages, also in the roofs of houses. A nest he found in August at Soforé Place contained six pure white eggs, measuring 0.56 × 0.4. At Schieffelinsville they were in flocks of about twenty individuals in the plantations. Fraser records them as "common in the roofs of the huts belonging to the fishermen of Cape Palmas, in which situation they breed and commit much mischief, like our Common Sparrows. The native name is 'Saybue.'"

From the Gold Coast specimens have been collected by Blissett at Elmina, and by Ussher in Fantee and at the Volta River. At Abouri, in the Aguapim Mountains, T. E. Buckley shot the only specimen we recognised in the garden of the missionary station. Mr. Boyd Alexander found it at Prahsu, and writes: "This species breeds in August, forming a domed nest of dry grass, which is placed between the small branches of a tree, generally an acacia." In Togoland it is known to the natives as the "Airo," according to Mr. Baumann, who procured a specimen at Jo.

The species is represented in the British Museum by the following specimens: two adults from Sierra Leone, an adult and an immature bird from Cape Palmas, a good series of nine from the Gold Coast, two nestlings from Abeokuta, a very typical specimen obtained by Capt. M. Ferryman at Rabba, on the Niger, and a less typical one from Camaroons, referred to in the "Catalogue" under the name of *S. punctata*.

In Camaroons, apparently, *S. bicolor* and *S. poensis* not only meet, but interbreed; this is the conclusion I arrive at after reading Mr. Sjöstedt's notes on the specimens he refers to *S. punctata*. In the British Museum alone the tiny white spots on the quills vary in number from two to four in the Sierra Leone birds, from two to six in the Gold Coast specimens, and in the single example from Camaroons there are twelve of these spots. Otherwise they appear to me to agree perfectly.

Spermestes poensis.

Amadina poensis, Fraser, P. Z. S. 1842, p. 145 *Fernando Po*; id. Zool. Typ. pl. 50, fig. 1 (1849).

Spermestes poensis, Sharpe, Cat. B. M. xiii. p. 262 (1890); Shelley, B. Afr. I. No. 386 (1896); Reichen. Vög. Afr. iii. p. 152 (1904).

Spermestes stigmatophorus, Reichen. J. f. O. 1892, pp. 46, 133 *Bukoba, Sesse Isl.*; Shelley, B. Afr. I. No. 387 (1896).

Spermestes poensis stigmatophorus, Reichen. Vög. Afr. iii. p. 153 (1904).

Adult. Very similar to *S. bicolor*, from which it differs in the basal half of the quills showing numerous white bars, part of which are formed on the primaries by white spots, confined to the outer webs of the feathers; rump similarly barred with white, upper tail-coverts rather less barred; lower half of back and sides of breast mottled, with broad subterminal white edges to the feathers. Total length 4.2 inches, culmen 0.4, wing, in male, 2.1, in female 1.95, tail 1.6, tarsus 0.5. ♂, 24. 5. 01, Camaroons (C. L. Bates); ♀, 10. 82, Landana (Lucan).

The amount of white on the wings, rump and upper tail-coverts is variable. In Fernando Po birds, some, not including any of the four typical specimens, have no white on the upper tail-coverts. From Gaboon an immature bird, in nearly full plumage, has the white on the quills confined to the two inner primaries, the rump having the full complement of white bars. In another specimen the white is marked on the wing to the same extent as in the types, but there is less white on the rump. In two other specimens, also from Gaboon, there is rather less white on both the wings and rump.

The Southern Black-and-white Mannikin ranges from Fernando Po to the Victoria Nyanza and into Angola.

On Fernando Po the types of the species, four in number, were collected by Fraser, who writes: "Very common near Clarence, in flocks of about fifty; their note is 'tweet-tweet.'" Mr. Boyd Alexander obtained specimens on that island at Ribola and Sipolo, where they were "found in small flocks frequenting waste places near villages." In Camaroons the species has been procured at Buea by Dr. Preuss, at Jaunde by Dr. Zenker; also at Efulen and the Ja River by Mr. Bates, who records its native name, at the former place, as "Ejile." In Gaboon the species must be abundant, for Du Chaillu collected specimens at Cape Lopez and along the Moonda and Camma Rivers, and Marche procured it in the Ogowé district at Doumé.

In the British Museum there is one of Lucan's specimens from Landana, three, collected by Jameson, near the Aruwimi tributary of the Congo, and one from Bembe, in Angola, where Mr. Monteiro found the species in flocks frequenting the high grass.

With regard to its ranging into Central Africa, specimens have been collected by Emin in the Ukonju country, to the north of the Albert Edward Nyanza, and at Bukoba on the Victoria Nyanza, Dr. Stuhlmann also found it on Sesse Island. To the latter specimens Dr. Reichenow has given the name *S. stigmatophorus*, but from the description it does not differ from the Fernando Po types, and as he includes under that new name the Camaroons birds, I cannot even recognise it as a local variety, yet Dr. Hartert uses it for Dr. Ansorge's specimen from the Ituri River.

Spermestes nigriceps.

Spermestes nigriceps, Cass. Proc. Philad. Acad. 1852, p. 185 *Zanzibar*; Sharpe, Cat. B. M. xiii. p. 263 (1890); Shelley, B. Afr. I. No. 383 (1896); Nehr Korn, Kat. Eiers. p. 125 (1899) *egg*; Reichen. Vög. Afr. iii. p. 153 (1904).

Spermestes rufodorsalis, Peters, J. f. O. 1863, p. 401 *Inhambane*.

Amadina punctipennis, Bianc. Spec. Zool. Mozamb. fasc. xviii. p. 323, pl. 4, fig. 1 (1867).

Subspecies a.

Spermestes nigriceps minor, Erlanger, Orn. Monatsb. 1903, p. 22 *Fanole*; Reichen. Vög. Afr. iii. p. 154 (1904).

Adult. Similar to *S. poensis* in the colouring of the head, rump, upper tail-coverts, most of the wing, and the entire under parts, but differs in the hinder neck gradually passing into chestnut, which colour extends over the upper and middle back, the scapulars and inner secondaries. "Iris brown; bill bluish slate; legs dark." Total length 3.5 inches, culmen 0.4, wing 2.0, tail 1.4, tarsus 0.5. ♂, 7. 4. 00. Nairobi (Delamere).

Type of S. nigriceps minor. Is said to differ from the above only in its smaller size. Wing 1.72 to 1.8. Somali.

The Rufous-backed Mannikin inhabits Eastern Africa from Natal to the Equator, and a small race inhabits Somaliland.

The species is rare in Africa south of 10° S. lat., being known to me from Natal by a single specimen, obtained by Mr. T. L. Ayres, at Durban, in August one procured by Mr. Cavendish in the Chiroma district of South Mozambique,

and by two from Nyasaland, one unlabelled, the other from the Nyika Plateau; all these are in the British Museum. The type of *S. rufidorsalis* was met with by Dr. Peters at Inhambane, and the type of *Amadina punctipennis* came from Mozambique. None of these collectors have favoured us with any field-notes, and Layard, Stark and Mr. T. Ayres apparently never met with it.

The type came from Zanzibar, and the species is abundant from that island to the Equator. Fischer, in his letters from Zanzibar, informs us that he found the species in flocks of twenty to thirty in the fields, feeding in company with other small Weavers, and he once met with it in the town, where it is known to the natives as the "Tongo kanga," the word "Tongo" being apparently the generic name for all the members of this group, and might be translated as "Mannikin." He also met with the species at Bagamoio, Pangani, Mombas, Lamu and the Tana River. Hildebrandt and Kalkreuth found a nest of this species near Mombasa, in July; it was placed in a bush and constructed of grass. The egg is described by Mr. Nehr Korn as being white and measuring 0.56×0.40 .

In the British Museum there is a fine series of specimens procured by Lord Delamere at Nairobi, in British East Africa, in November and April, also one obtained by Mr. Percival, from the Kikuyu Forest, in May.

The type of *S. nigriceps minor* was obtained by Mr. Erlanger in South Somaliland, July 27, 1901, at Fanole, on the Lower Juba River.

Spermestes cucullatus.

Spermestes cucullatus, Swains. B. W. Afr. i. p. 201 (1837) *Senegambia*; Sharpe, Cat. B. M. xiii. p. 264 (1890); Butler, Foreign Finches in Captivity, p. 258, pl. 46, fig. 1 (1894); Shelley, B. Afr. I. No. 381 (1896); Nehr Korn, Kat. Eiers. p. 125 (1899) *egg*; Hartert, Nov.

Zool. 1901, p. 341 *Niger*; Reichen. J. f. O. 1902, p. 37 *Togo*;
 Bocage, Journ. Lisb. 1904, p. 82 *St. Thomas Isl.*; Reichen. Vög.
 Afr. iii. p. 149 (1904).

Loxia prasipteron, Less, Rev. Zool. 1839, p. 104 *Senegambia*.

Adult. Forehead and crown glossy bronzy green, passing into deep brown, with a coppery bronze gloss on the sides of the head, chin and entire throat; back and sides of neck, back and wings, earthy brown; a large patch of glossy bronzy green covering the lesser wing-coverts and a portion of the scapulars; rump and upper tail-coverts barred with buff and blackish brown; tail uniform black; quills dark brown, with narrow buff outer edges, and their under surface, with the inner edges, very pale sandy buff, of the same shade as the under wing-coverts; sides of crop, centre of breast and the under tail-coverts white; flanks dark brown, with some broad, crescent-shaped white bars on the fore and hind parts, and with broad glossy bronzy green edges to the feathers next to the centre of the white breast, here forming a characteristic metallic patch; under tail-coverts with a few rather broad blackish bars; thighs dark brown, barred with white. Iris dark brown; bill leaden grey; tarsi and feet darker grey. Total length 3.7 inches, culmen 0.4, wing 1.9, tail 1.4, tarsus 0.55. ♂, 26. 8. 81. Rimo (Emin).

Immature. Entire upper parts uniform brown, with the tail blackish; sides of head, chin and throat dusky ash; crop and sides of body tawny buff, paler on the middle of the breast and under tail-coverts. Lokoja (Forbes).

Swainson's Bronze Mannikin ranges over West Africa from Senegambia into Angola, and across Equatorial Africa into the Kavirondo district to the east of Victoria Nyanza.

The type of the species and the type of *Loxia prasipteron* both came from Senegambia. These Mannikins are abundant and apparently very evenly distributed throughout their wide range, which includes the islands of the west coast.

Ussher writes: "Exceedingly common on the west coast, where large flocks of them, in company with other Finches, rise, when disturbed, from the long grass, on the seeds of which they are very fond of feeding. They are captured in some quantities by the natives on various parts of the coast, especially at the Gambia and in the French settlements of Senegal, when they are exported, with many other varieties

of Finches, to Europe." These birds are hardy in captivity, and, according to Dr. Russ, both sexes take part in the construction of the nest, and sit together at the same time on their eggs. The duration of incubation lasts twelve days, and the young desert the nest between the sixteenth and eighteenth day; the course of the brood from the first egg to the flight occupies nearly five weeks. He further adds: "Six youngsters sat in a row, and as soon as the first pleader was pacified the old bird hopped upon its back in order thereby to provide for the second. Thus she moved along until the whole row was satisfied. As a rule they nest three or four times in succession, and every clutch consists of from four to seven eggs." He also informs us that the change of plumage by the first moult takes place gradually from the fourth week, and is completed in about three months.

Dr. P. Rendall found a nest with eggs on April 21, at the Gambia. Mr. Kemp writes from Sierra Leone: "The nests are somewhat spherical and are placed in thick, small bushes, banana-trees, the palm-leaved roofs of huts, or other convenient places, from the middle of August to February, and usually contain five eggs of a dirty white colour. In the rains they roost in these nests, often five or six birds together, and can be caught at night with a butterfly net and a lantern." On the Gold Coast Drs. Reichenow and Lühder found a colony of these birds breeding at Abokobi, in a mango-tree in the town, with fresh eggs and young birds in September. The nests were very large and loosely constructed of fine grass. The eggs, four in number, were white and measured 0.5×0.4 .

On Prince's Island, Mr. Keulemans informs me, "they are very common, and to be found breeding in colonies in bushes near fields, and amongst the high ferns on the outskirts of the forests. The plantations appeared to be always filled with the young birds, many scarcely able to fly, which kept up a con-

stant chirping and chattering, attracting the attention of the Wood-Kingfishers (*Halcyon*), a pair of which birds would sweep them up in their bills one after another; but fortunately these little Finches are wonderfully prolific. On a plantation I occupied, one pair produced no less than seven broods during the year, with an average number of six young ones. They are known to the natives as the "Siwie-singa." On St. Thomas Island, where they are also common, they are known as the "Friernba," according to Mr. F. Newton.

In Central Africa the species has been obtained in the Upper White Nile district and at Bukoba on the Victoria Nyanza, by Emin; in Unyoro and Uganda by Dr. Ansorge, and in its more eastern range by Mr. Neumann in Kavirondo. Mr. Jackson, who has procured specimens at Kakamega and Nandi, writes: "Now breeding, July 14. Selects old nests of *Hyphantornis reichenowi*, which it lines with fine grass-seed heads. Eggs pure white. Up to date five has been the largest number I have found in any nest. Yesterday I found two eggs in a nest of *H. reichenowi*. Both birds were in the nest and only flew out on my reaching up to the latter, which was in a bush about seven feet from the ground. The species does not appear to build a nest for itself."

Nandi, on the Equator, a little to the east of 35° E. long., is probably about the most eastern range for the species; but I feel less confident in 5° N. lat. being the limit of its range down the Nile.

Spermestes scutatus.

Spermestes scutatus, Heugl. J. f. O. 1863, p. 18 *Dembca*; Sharpe, Cat. B. M. xiii. p. 265 (1890); Shelley, B. Afr. I. No. 382 (1896); Grant, Ibis, 1904, p. 258 *Daira Aila*; Reichen. Vög. Afr. iii. p. 150 (1904).

Adult male. Very similar to *S. cucullatus*, but may be readily distinguished by the entire absence of any metallic bronzy green on the sides

of the chest, which are brown, with broad white terminal edges to all the feathers. "Iris brown; bill and legs dark slate colour" (Delamere). Total length 3.5 inches, culmen 0.4, wing 1.9, tail 1.2, tarsus 0.55. ♀, 17. 10. 75. Pinetown (T. L. Ayres).

Adult female. Differs only in having slightly less metallic green on the wing-coverts and scapulars. Wing 2.0. ♀, 25. 7. 75. Pinetown (T. L. Ayres).

Heuglin's Bronze Mannikin ranges over Africa south from the Congo and Abyssinia, with the exception of Western South Africa, and inhabits the Comoro Islands.

In the lower Congo district this species and its nearest ally, *S. cucullatus*, meet. The present form is represented in the British Museum from West Africa by two specimens from the Congo, one of which was procured at Kabinda by Sperling, two of Monteiro's from Angola, and one of Anchieta's from Benguela. In Angola, according to Mr. Monteiro, it is known to the natives as the "Canquijamba." He found it in small flocks on the ground and also breeding in trees. In Benguela the species has been obtained by Anchieta at Quindumbo, Dombe and Caconda, all localities near the town of Benguela, and I cannot trace its range further south in Western Africa.

Its occurrence in Cape Colony is reported by Layard, who writes: "Appeared in a considerable flock at Table Farm, near Grahamstown." Mr. Shortridge calls it a common resident near Port St. John, in Pondoland. According to Stark, it is an uncertain and irregular migrant in Eastern Cape Colony, but is resident in Natal, ranging northward through the Transvaal to the Zambesi, and he further writes: "These pretty little Weaver Finches are in Natal usually met with in small parties of from six to a dozen in the more open 'Bush,' as well as in gardens. They spend much of their time on the ground searching for small seeds, but frequently perch on bushes and occasionally on tall trees. They are shyer than the majority of the small

Weaver Finches, and if disturbed once or twice, fly off to a distance. Their note is a soft and gentle twitter. A nest found near Pinetown, in November, was built near the extremity of the lower horizontal limb of a large tree, at the edge of a clearing in the 'Bush.' It was about ten feet above the ground and was domed, with a small side opening. It was somewhat loosely built of fine dry grass lined with the soft flowering tops. The eggs, four in number, are pure white and measure 0.52 × 0.45."

While at Inhambane, Dr. Peters met with this species in company with *S. nigriceps*, and some hundred miles inland, on the left of the Limpopo at Rovi-rand, Mr. W. Ayres found them in flocks of from four to fifteen, frequenting the low open bush near water. I do not, however, find any record of its having been obtained in the Transvaal, but in the British Museum there are nineteen specimens from Natal, three from Mozambique, and two from the Zambesi. In the latter district Sir John Kirk records it as common near Shupanga. In Nyasaland specimens have been collected at Zomba, Nyika, Mlosa and Chañda. At Mozambique Sperling found them very common and wrote: "I had about a dozen of them in a cage; their method of roosting is singular. Four or five would form a base, and on the backs of these three or four more would place themselves, till they were piled up in several tiers, forming a compact lump of feathers, some of them resting on their sides or backs. Occasionally, as may easily be imagined, the whole fabric would topple over; and when this occurred at night those that fell remained at the bottom of the cage."

Near Cape Delgado the species has been obtained by Senhor Cardosa, and on the islands of Great Comoro and Johanna it is abundant. On the former island Sir John Kirk collected seven specimens and on the latter two; here Sir E. Newton also found it common in flocks on the highlands, and called

by the natives "Saughan." He procured three birds, a nest and eggs. The latter are described as "white, and measuring 0.55 × 0.42; the nest is, like those of many of the genus, entirely composed of the almost ripe stalks of grass, with the seeds still on them, and is a domed structure."

Speke obtained specimens in the Unyamwesi country to the south of Victoria Nyanza, and Böhm found them common at Kakoma and Zanzibar, with a number of eggs and young birds, from the middle of April to the end of May. Fischer met with them generally distributed from Bagamoio to the Tana River. Sir John Kirk obtained specimens at Dar-es-Salaam, Zanzibar and Pangani; these are in the British Museum, where there are others from Mombasa, Teita, Southern Abyssinia and Shoa.

In the Ukamba country, at Kibwezi, Mr. Jackson shot a specimen, and writes: "This species is very plentiful throughout the country in the vicinity of habitations. At Kibwezi it was breeding in March. The nest, which is roughly made of dry grass and lined with feathers, is generally placed on a table-topped mimosa or other thorn-tree, some ten to twenty-five feet from the ground. In several cases I have seen the nest within a few inches of a hanging wasps' nest; and although I am not certain on the point, I am inclined to think that the birds began building after the wasps had begun their nest, and that they chose to place their nest in such close proximity to the wasps for the sake of protection against the intrusion of snakes, lizards, mice and other enemies."

It is interesting to find in this same collection two specimens of *S. cucullatus* from the Kavirondo district, some 250 miles to the north-west, so that the range of these species meet to the north-east of Victoria Nyanza, for the type of the present species was discovered by Heuglin in the Dembea district of Central Abyssinia to the north of Lake Tana, which is the most northern range known for the species.

It is apparently plentiful in Shoa and has been met with to the east by Lord Lovat at Telagubaie, and at Roguecha, in February, by Mr. Pease, who writes: "This bird was seen flying fast in closely-packed flocks and was not observed settling; all the three young birds were shot out of one flight." According to Heuglin, it is generally distributed over Abyssinia from April to July, when they are to be met with in parties of from four to eight, but often collect in noisy, lively swarms in the corn-fields.

The specimens he procured in the Nile district may possibly belong to *S. cucullatus*, of which the present form can hardly be regarded as more than a subspecies. With regard to its range, its apparent absence from Somaliland is as difficult to explain as its absence from Western South Africa. For its size it is naturally a strong bird, with a powerful flight, and has more probably naturalised itself in the islands of Great Comoro and Johanna than been introduced there by man.

Spermestes nana.

Pyrrhula nana, Pucher. Rev. Zool. 1845, p. 52 *Madagascar*.

Spermestes nana, Sharpe, Cat. B. M. xiii. p. 266 (1890) *Madagascar*;

Sibree, Ibis, 1891, p. 441; Shelley, B. Afr. I. No. 388 (1896);

Nehrkorn, Cat. Eiers. p. 125 (1899) *egg*.

Adult male. Upper parts uniform earthy brown, shaded with grey on the forehead, crown and back of neck; upper tail-coverts broadly edged with yellowish buff; wing and tail uniform, darker brown than the back; under wing-coverts sandy buff; sides of head grey, shading into buff on the sides of the upper throat; in front of eye, chin and upper throat, black; remainder of the under parts buff, with a rosy brown shade; under tail-coverts brown, with broad buff edges. "Iris reddish brown; bill black; feet reddish" (Grandidier). Total length 3·5 inches, culmen 0·35, wing 1·8, tail 1·4, tarsus 0·5. *Madagascar* (Bewsher).

Female. Differs in being browner, with no grey or black on the head or throat; chin and throat very pale ashy brown; upper and under tail-coverts entirely brown. ♀, 15. 3. 83. *Madagascar* (Cowan).

The Nana Mannikin inhabits Madagascar and the small island of Mayotte.

According to M. Grandidier, they are to be met with in all plantations and cultivated ground in flocks of from twenty to forty individuals. They are constantly on the move, climbing along the stems of the corn or flitting from one tuft of grass to another, disappearing quickly when alarmed. The nest is woven out of the stems of grass and lined with softer grass. They lay three or four eggs in a nest, which are described by M. Grandidier as pale green, with some brown spots towards the thick end; this, I think, must be a mistake, and that Mr. Nehr Korn is right in describing them as pure white, measuring 0.56×0.4 . They are known by the numerous tribes of natives in Madagascar by some eight different names, several of which have been suggested by the sprightly habits of these little birds.

Genus VIII. NESOCHARIS.

Bill small and comparatively slender, deeper than broad; culmen slightly curved; nostrils hidden by the frontal plumes. Wing rounded; primaries 3, 4 and 5 longest and about equal; 2 and 7 equal; 1 very small, narrow and sharply pointed. Tail entirely black, short, rounded, and not extending beyond the outstretched feet. Tarsi, feet and claws as in *Spermestes*. Back as well as the upper tail-coverts olive yellow; neck, breast and under tail-coverts leaden grey.

Type.

Nesocharis, Alexander, Bull. B. O. C. xiii, p. 48 (1903) . . . *N. shellyi*.

The genus is represented by a single species, which is confined to the small island Fernando Po. I place it between *Spermestes* and my new genus *Chlorestrilda*, from both of which it differs in its peculiarly small bill. To the former it is most nearly allied by its general structure and in its squarer, short, and more rounded tail while it resembles the latter in the green colouring of the back and the grey breast.

Nesocharis shelleyi.

Nesocharis shelleyi, Alexander, Bull. B. O. C. xiii, p. 48 (1903) *Fernando Po*; Reichen. Vög. Afr. iii, p. 176 (1904).

Type. Entire head and upper half of throat jet black; neck leaden grey; entire back and the edges of the wing-feathers olive yellow, of a slightly yellower shade on the lower back and upper tail-coverts; tail entirely black; remainder of the wings dusky black, with the under coverts and broad inner edges to the quills white; lower half of the throat, under surface of the body and the under tail-coverts leaden grey like the neck, where it fades into a marginal white line next to the black ear-coverts. "Iris brown; bill glossy bluish slate colour; tarsi and feet brownish black." Total length 3.1 inches, culmen 0.3, wing 1.65, tail 1.1, tarsus 0.5. ♀, 12. 12. 02. Moka (Alexander).

Shelley's Mannikin is confined to Fernando Po Island.

Mr. Boyd Alexander writes: "This species was not found in the northern part of the island, but was discovered by my collector on the Moka highlands. It appears to be rare, since only two specimens were observed and obtained, which were frequenting the tops of tall thick-leaved trees."

Genus IX. **CHLORESTRILDA.** N. gen.

Bill and general structure like that of *Estrilda*. Wing rounded; primaries 4, 5 and 6 about equal and longest; 2 shorter than 3 and equal to 7; 1 very short, narrow and sharply pointed. Tail graduated and wedge-shaped, extending beyond the wing by about one inch and beyond the outstretched feet by half that length. Back and upper tail-coverts olive yellow; breast and under tail-coverts mostly leaden grey, with some yellow on the sides of the body. **Type,** *V. ansorgei*.

The genus inhabits the western half of Northern Tropical Africa and comprises two species. In the colouring, especially of the type, it shows its affinities to *Nesocharis*, while in the form of the bill and tail it much resembles *Estrilda*.

KEY TO THE SPECIES.

- a.* Entire head black ; tail blackish, contrasting with the olive yellow back and upper tail-coverts *ansorgei*.
b. Head mostly whitish grey ; tail olive yellow, like the back and upper tail-coverts *capistrata*.

Chlorestrida ansorgei.

Pytelia ansorgei, Hartert, Bull. B. O. C. x. p. 26 (1900) *Wemi R.*

Cryptospiza ansorgei, Reichen. Vög. Afr. iii. p. 175 (1904).

Type. Head and throat jet black ; back and sides of neck deep leaden grey ; back, upper tail-coverts and edges of the wing-feathers olive yellow ; remainder of wing dusky slate colour, with the axillaries, under wing-coverts and inner edges of the quills white ; tail dusky black, paler towards the ends of the outer feathers. A narrow white band across the lower throat, separating the black throat from a black patch on the middle of the crop ; sides of the crop olive yellow ; remainder of the breast, the thighs and under tail-coverts deep leaden grey. " Iris dark brown ; bill blackish, slaty blue near the base ; tarsi and feet dark brown." Total length 3·5 inches, culmen 0·4, wing 1·9, tail 1·6, tarsus 0·6. ♂, 21. 4. 99. *Wemi R.* (Ansorge).

Ansorge's Olive-backed Waxbill inhabits the Uganda district.

The type was discovered by Dr. Ansorge, and all that is known regarding the species is what Dr. Hartert writes : " One male in a wretched condition—the head smashed—was shot on the Wemi River, in Toru, on April 21, 1899."

Chlorestrida capistrata.

Pytelia capistrata, Hartl. J. f. O. 1861, p. 259 *W. Africa*.

Estrilda capistrata, Shelley, B. Afr. I. No. 419 (1896).

Cryptospiza capistrata, Reichen. Vög. Afr. iii. p. 175 (1904).

Amadina sharpei, Nicholson, P. Z. S. 1878, p. 130, pl. 10 *Abeokuta*.

Pytelia sharpei, Sharpe, Cat. B. M. xiii. p. 303 (1890).

Adult. Head, neck and under surface of the body pale leaden grey, fading almost into white on sides of the head and front of the forehead ; chin and upper half of the throat black, also a black band behind the ear-

coverts; back, wing-coverts, edges of the quills, upper tail-coverts and the tail above deep olive tinted yellow; under surface of the tail and the greater portion of the quills dusky brown; under wing-coverts whitish ash, with the edge of the pinion deep yellow, flanks strongly washed with the same shade of yellow. "Iris brown; bill black; tarsi and feet slaty black." Total length 4.6 inches, culmen 0.4, wing 2.3, tail 1.9, tarsus 0.65. ♂, 22. 5. 01. Krachi (Alexander).

Hartlaub's Olive-backed Waxbill ranges from Senegambia to the Albert Nyanza.

The species is known, I believe, by seven specimens only; one from the Gambia, in the British Museum, the type discovered by Beaudouin at Bissao; two collected by Mr. Boyd Alexander and Mr. Klose at Krachi on the Volta River; the type of *Amadina sharpei*, Nicholson, from Abeokuta, and a male and female obtained by Emin at Meswa and Buguera, on the western side of the Albert Nyanza.

Genus X. URÆGINTHUS.

Bill stout, as deep as broad at the nostrils, swollen at the base and sharply pointed; culmen rounded, curved, and ending at the base in a right angle on the forehead; edges of upper mandible festooned; nostrils basal and hidden by the frontal feathers. Wing rounded; primaries 1 small, narrow and pointed, 2 and 5 of equal length, 3 and 4 longest. Tail strongly graduated, and longer than the wing. Tarsi, feet and claws moderate. Plumage with some blue and no red; upper tail-coverts blue.

Type.

Uræginthus, Cab. Mus. Hein. i. p. 171 (1851)	<i>U. bengalus.</i>
Maripoza, Reichenb. Singv. p. 6 (1863)	<i>U. bengalus.</i>
Granatina, Sharpe, Cat. B. M. xiii. p. 403 (1890)	<i>U. granatinus.</i>

The genus is confined to Tropical and South Africa. The type species is well known in England as the Cordon-bleu, so I have adopted that name for all the members of the genus.

KEY TO THE SPECIES.

- a.* Rump and upper tail-coverts dark cobalt blue.
- a*¹. Breast cinnamon.
- a*². Ear-coverts lilac; upper throat black . . . *granatinus*, ♂ *ad.*
- b*². Ear-coverts not lilac; upper throat whitish . . . *granatinus*, ♀ and ♂ *juv.*
- b*¹. Breast cobalt in adult males; cinnamon with white spots in females and young birds. . . *ianthinogaster.*
- b.* Rump and upper tail-coverts pale verditer blue.
- c*¹. Sexes alike in plumage; no red on head.
- c*². Crown brown.
- a*³. Darker *angolensis.* 182
- b*³. Paler *damarensis.* 183
- d*². Entire head, excepting the nape, verditer blue *cycanocephalus.* 184
- d*¹. Sexes differ in the males only having a patch of crimson on the ear-coverts *bengalus.* 185

Uræginthus granatinus.

Fringilla granatina, Linn. S. N. i. p. 319 (1766).

Uræginthus granatinus, Reichen. Vög. Afr. iii. p. 210 (1904).

Granatina granatina, Sharpe, B. M. xiii. p. 403 (1890); Butler, Foreign Finches in Captivity, p. 122, pl. 24 (1894); Shelley, B. Afr. I. No. 395 (1896).

Adult male. Forehead, feathers over the eyes, rump, upper and under tail-coverts cobalt blue; crown and mantle bright cinnamon; wings nearly uniform brown, the feathers having narrow rufous shaded edges; under wing-coverts and inner margins of the quills whitish; tail-feathers black, with obscure bars and a slight edging of blue; sides of head below and behind the eye bright lilac; in front of eyes, chin, centre of breast and the thighs black; remainder of neck and body bright cinnamon. "Iris red; bare skin round the eye reddish; bill red at tip, purple at base; legs and feet purplish" (Stark). Total length 5·6 inches, culmen 0·4, wing 2·3, tail 3·0, tarsus 0·65. ♂, 5. 71. Griqualand (Atmore).

Adult female. Differs from the male in being much paler and having no black on the throat; crown and back of neck sandy rufous; mantle ashy brown; under tail-coverts buff, like the under parts generally. Wing 2·25. ♀, 12. 7. 66. Damaraland (Andersson).

Immature male. Similar to the adult female, from which it differs in the chin and upper throat being black; crown ashy brown like the mantle, and mottled with a few bright cinnamon feathers. Makalaka (Bradshaw).

The Violet-eared Cordon-bleu inhabits Southern Africa from south of the Quanza and Zambesi to the Orange River.

This Waxbill has been procured by Anchieta and Mocquerys at Benguela, which is the most northern range known to me for the species, and at Huilla in Mossamedes by Antunes. Andersson found it not uncommon in Damaraland, but more abundant further north and at Lake Ngami. Mr. Fleck likewise mentions it as generally distributed over these districts and the Kalahari.

Stark writes: "These beautiful Waxbills appear never to congregate in large flocks but are either met with in small parties of five or six, or more usually in pairs. They keep much to localities covered with low bushes, and especially with scattered mimosas, and generally feed on the ground between the bushes, often on bare spots, on grass and other small seeds. A nest taken in June, in the Northern Transvaal, was built about four feet off the ground, in a thorny bush. It is round in shape, with a side entrance, and is loosely constructed of dry grass lined with a few feathers. The eggs, three in number, are pure white, and measure 0.72×0.50 . It is somewhat curious that this delicate-looking little bird should breed in mid-winter, when the nights are decidedly cold, but I have frequently noticed the seeming indifference of many of the South African small birds—including some of the Sunbirds—to temperature. Many breed in mid-winter, even on the bleak mountains of Western Cape Colony. Not unfrequently the same species will nest again in the height of summer."

Mr. Ayres met with the species in the Rustenburg and Mariqua districts, but found it more abundant near the Limpopo, and noticed it "frequenting low mimosa bushes; generally found in pairs or small family parties, but, I think, not ranging northward of the Tatin River." My friend, the late T. E. Buckley, has recorded it as common in small flocks in the

Matabele country. Frank Oates procured a specimen at Tati, and Serpo Pinto met with it in Central Africa at Luschuma, some fifty miles west of the Victoria Falls of the Zambesi.

Uræginthus ianthinogaster.

Uræginthus ianthinogaster, Reichen. Orn. Centralbl. 1879, p. 114; id. J. f. O. 1879, p. 326, pl. 2, figs. 1, 2 *Massa*; id. Vög. Afr. iii. p. 211 (1904).

Granatina ianthinogastra, Sharpe, Cat. B. M. xiii. p. 404 (1890); Shelley, B. Afr. I. No. 396 (1896); Grant, Ibis, 1904, p. 258 *Oda, Mirti*.
Granatina hawkeri, Phillips, Bull. B. O. C. viii. p. 23 (1898) *Somali*.

Adult male. Head and neck cinnamon, with the sides of the forehead and the cheeks ultramarine blue; mantle and wings brown, washed with cinnamon towards the edges of the feathers; rump and upper tail-coverts cobalt blue; tail brownish black; breast and under tail-coverts cobalt blue, mottled on the front and sides of the chest with cinnamon, and thus the blue of the lower throat is sometimes detached into a collar. "Iris and bill red; legs black." Total length 4·8 inches; culmen 0·4, wing 2·2, tail 2·5, tarsus 0·6. ♂, 13. 12. 00. Moulou R. (Pease).

Adult female. Differs in the sides of the head being cinnamon, with a narrow band of pale lilac blue feathers round the eye; entire throat like the neck uniform cinnamon, this colour, extending over the chest and flanks, which are spotted, with white tips to the feathers, fades into white on the abdomen and under tail-coverts; thighs dark brown. "Iris and bill red; legs black." Wing 2·2. ♀, 10. 3. 01. Arbawun (Pease).

Immature. Differs from the last in having the bill black; the feathers round the eye isabelline, and the under parts less spotted. ♂, 13. 12. 00. Moulou R. (Pease).

The Ianthe Cordon-bleu ranges over Eastern Africa from Ugogo into Shoa and Abyssinia.

It appears to be fairly abundant throughout this range eastward of 35° E. long. and to closely resemble *U. granatina* in its habits, and the eggs are probably alike.

Fischer discovered the species at Massa on the Tana River and collected specimens at the Ronga and Pangani Rivers, at Loeru, Nguruka, in Arusha and Masailand, and at Barawa on

the South Somali coast. Dr. Anson met with it in Ukamba; Mr. Jackson at Lake Naiwasha; Mr. Neumann on Mount Kavinjiro, near Nguruka, and at Sero in North-west Masailand. In the British Museum there are specimens collected by Lord Delamere at Lake Nakuro and the Molo River.

Granatina hawkeri was described by Mr. Lort Phillips from three specimens, the type procured by himself at Bari, one of Mr. Hawker's from Daboloc, and the third, Mr. Peel's, from Lohello. He mentions it as being not uncommon, in small flocks, throughout the tableland. Mr. Hawker, likewise, found it common, very tame, and generally to be seen in small flocks feeding on the ground around the old zarebas. Drs. G. Elliot and Donaldson Smith have also procured a fair series from this country. In its more northern range Lord Lovat shot a pair, in December, at Hargeisa in Northern Somaliland, and a month later in Southern Abyssinia, near Laga Hardim and Hawash, and observes: "Seldom seen in such large flocks as most of the other small Finches." Mr. Pease also records it as abundant in the bushy lowlands of South Abyssinia, Mr. Degen has obtained specimens at Mirti and Oda, and Dr. Ragazzi has procured two others in Shoa.

Uræginthus angolensis.

Fringilla angolensis, Linn. S. N. (x.) p. 182 (1758); (xii.) i. p. 323 (1766)

Angola.

Uræginthus bengalus angolensis, Reichen. Vög. Afr. iii. p. 209 (1904).

Estrilda angolensis, Sharpe, Cat. B. M. xiii. p. 402 (1890).

Granatina angolensis, Shelley, B. Afr. I. No. 397 (1896).

Loxia cyanogastra, Daud. Traité, p. 436 (1800).

Subspecies a.

Uræginthus bengalus damarensis, Reichen. Vög. Afr. iii. p. 209 (1904)

Damara, Lake Ngami.

Adults. Similar in plumage to the female of *U. bengalus*. "Iris red; bill purple; legs brown" (T. E. Buckley). Total length 5.1 inches, culmen 0.4, wing 2.1, tail 2.5, tarsus 0.55. ♂, 19. 3. 78. Wenen (W. Lucas).

U. bengalus damarensis is said to differ from *U. angolensis* in being paler (Reichenow).

The Angola Cordon-bleu ranges southward from Angola and Nyasaland into Natal, but is absent from Namaqualand and Cape Colony.

Dr. Reichenow separates the birds from German South-west Africa as a pale subspecies, for which he proposes the name *U. bengalus damarensis*, and refers to this form Andersson's specimens from Ondonga and Elephant Vley, and Mr. Fleck's from Lake Ngami and the Okavango River. The hot, dry climate of this part of Africa has the effect of bleaching the plumage of most birds living there, whether they belong to resident forms or to migratory species, and it appears to me questionable if the paler Damara specimens deserve to be separated subspecifically.

To *U. angolensis* Dr. Reichenow refers the specimens collected by Schütt at Malandje in Angola, in which country also occurs *U. bengalus*. The present species has been obtained by Anchieta at Biballa in Mossamedes, where it is known to the natives as the "Kanexe," and to the colonists as the "Peito-celesto."

From Damaraland Andersson writes: "I have heard occasionally of immense gatherings of these birds; but usually they are found in small flocks seeking on the ground for their food, which consists almost entirely of the seeds of grass. On February 2, 1867, I found in Ondonga a nest of this species in a palm bush about six feet from the ground; it was constructed of grass, and had no internal lining; the eggs were five in number." The eggs are, according to Stark, pure white, rather rounded, and measuring on the average 0.70 × 0.55.

I do not find the species recorded from Namaqualand and Cape Colony. Sir Andrew Smith met with it between Kurri-chane and the Tropic of Capricorn. In Natal Captain Savile Reid found it in considerable numbers in the bush near Lady-smith, in August, also at Colenso and Blaauw Krantz, in November, but did not observe it in the Newcastle district. Mr. Arnold procured it at Weenen, Mr. Ayres found it abundant amongst the bush on the banks of the Tugela, and the Messrs. Woodward obtained specimens at Eschowe in Zululand. Stark writes: "These beautiful little Waxbills are usually met with in small parties, but occasionally in autumn, after the young have flown, in very large flocks. They prefer localities which are partly open, partly overgrown with scrub or low trees, and are specially fond of scattered mimosa bushes, in which they can take refuge, if disturbed when feeding on the ground on their favourite grass-seeds. When frightened they rise with a shrill twittering to take shelter in the nearest bushes. In spring both male and female sing not unpleasantly. Although the adults appear to subsist entirely on grass-seeds, the young, before they leave the nest, are fed on small grubs and insects. The nest is invariably built in a bush, often in a low mimosa, and is generally placed in a fork at a height of from three to eight or nine feet. At first sight it looks like a ball of dried grass carelessly thrown into a bush; on investigation a small side entrance, nearly concealed by the projecting ends of grass-stalks, may be found leading to the interior, which is smoothly and warmly lined with finer dried grass and feathers."

Mr. Haagner regards it as scarce at Johannesburg, but Buckley found it very common through the Transvaal into the Matabele country, and Mr. Ayres met with it in flights in the Rustenberg district and northward at the Quae Quae and Umfuli Rivers. Oates procured it at Tati, and Mr.

Cavendish at Mapicuti, near Sofala Bay. Mr. Guy Marshall writes: "Though common along the Umfuli, this Waxbill is scarce near Salisbury, usually occurring in pairs. I have not found its nest in Mashonaland, but in Natal it builds in mimosa bushes, making a rough unlined nest of fine grass, with an entrance at the side. An interesting fact is that the nest is almost invariably placed in close proximity to, or even touching, one or more of the hanging nests of a powerful social wasp (*Belenogaster rufipennis*), as though the birds were aware that these would form an admirable protection against many enemies." The selection made by small birds of the proximity to wasps' nests for the protection of their own was first recorded, I believe, by Fischer in a letter from Zanzibar, March, 1878, published J. f. O., 1878, p. 281, in which he specially refers to *U. bengalus*; Mr. Jackson also remarked this habit in *Spermestes scutatus*.

At the Zambesi the present species has been met with by Sir John Kirk, and Mr. Boyd Alexander writes: "Common, and generally seen in pairs. On January 17 we found a nest almost ready for eggs among the small branches of an acacia bush and about fifteen feet up. It was loosely constructed of dry grass and presented a somewhat untidy appearance." In British Central Africa Mr. Percival found it numerous in December, in company with other small Waxbills, in the Shiré district. Others have been collected at Zomba, Mpimbi, on Mount Mlosa, and the Nyika Plateau, by Mr. Alexander Whyte, at Lake Shirwa by Sir Alfred Sharpe, and at Monkey Bay, on the west of Nyasa Lake, by Dr. P. Rendall.

From Lake Nyasa northward it is replaced by the very nearly allied form *U. bengalus*, which is scarcely more than a subspecies, being distinguishable by the colouring of the head in the adult males only.

Uræginthus cyanocephalus.

Estrilda cyanocephala, Richmond, Auk. 1897, p. 157 (1897) *Useri*.
Uræginthus cyanocephalus, Reichen. Vög. Afr. iii. p. 210 (1904).

Type. Similar to *U. angolensis*, but differing in the forehead and crown being verditer blue like the sides of the head. "Whole head, breast, sides of body, rump, upper tail-coverts and tail Nile blue, somewhat darker on the inner webs of the tail-feathers; nape, back, scapulars, wing-coverts, and sides of neck wood brown; wings ashy brown, edged with wood brown; lower breast, abdomen, under tail-coverts, thighs, axillaries, and under wing-coverts cinnamon buff; edge of wing Nile blue. Bill and irides red. Wing 2.08 inches, tail 2.14, tarsus .58, culmen, .36" (Richmond). ♂, 12. 1. 89. Useri River (Abbott).

The Blue-crowned Cordon-bleu inhabits the Kilimanjaro district. The type was discovered by Dr. W. L. Abbott at the Useri River, which flows from the east flank of Mount Kilimanjaro and is apparently a very local form, being known up to the present time by the two typical specimens only. Dr. Richmond writes: "This species is closely related to *E. angolensis*, but the entire head is blue; the brown on the upper surface and wings is darker, and the abdomen and under tail-coverts are of a deeper colour. A second specimen in the collection, also an adult male, was collected on the plains of Kilimanjaro, October 5, 1888."

Uræginthus bengalus.

Fringilla bengalus, Linn. S. N. (x.) p. 182 (1858); (xii.) i. p. 323 (1766)
 "*Bengala*" (= *Benguela*).
Uræginthus bengalus, Reichen. Vög. Afr. iii. p. 207 (1904).
Estrilda mariposa, Less, *Traité*, p. 444 (1831).
Estrela phænicotis, Swains. B. W. Afr. i. p. 192, pl. 14 (1837);
 Sharpe, *Cat. B. M.* xiii. p. 400 (1890); Butler, *Foreign Finches in Captivity*, p. 126, pl. 25, figs. 1, 2 (1894); Nehr Korn, *Kat. Eiers.* p. 128 (1899) *egg*; Flower, *P. Z. S.* 1900, p. 957 *White Nile*;

Hartert, Nov. Zool. 1901, p. 341 *Niger*; Grant, Ibis, 1904, p. 258
Harrar, Manniballa, Dedota.

Granatina phœnicotis, Shelley, B. Afr. I. No. 398 (1896).

Adult male. Above light drab brown; lower back and upper tail-coverts turquoise blue; tail rather darker blue; wings with the coverts and edges of quills like the back, remainder of quills more dusky brown; under wing-coverts and inner edges of quills of a paler shade of brown than the mantle; sides of forehead and head, chin, throat and sides of body turquoise blue, with a large patch of crimson on the ear-coverts; centre of breast, thighs and under tail-coverts pale drab, of the same shade as the under wing-coverts. "Iris yellowish; bill orange red, with the tip and the cutting edges black." Total length 4.5 inches, culmen 0.4, wing 2.0, tail 2.1, tarsus 0.55. ♂, 27. 4. 01. Gambaga (Alexander).

Adult female. Similar to the male, but differs in having the sides of the head browner, with no patch of red. Total length 4.7 inches, culmen 0.4, wing 2.0, tail 2.0, tarsus 0.55. ♀, 27. 4. 01. Gambaga (Alexander).

The Ruby-cheeked Cordon-bleu inhabits Tropical Africa between 17° N. lat. and 10° S. lat.

From Senegambia probably came the type of *Estrellda phœnicotis*, which name has been wrongly but most frequently used by English ornithologists. I made some remarks on this subject (Ibis, 1886, p. 336), but objected to the use of *bengalus*, Linn., as confusing, the species not being a native of Bengal, which objection might not be admitted at the present day; there was, however, no justice in setting aside both *Fringilla bengalus*, Linn., 1776, and *Estrellda mariposa*, Less, 1831, for *Estrellda phœnicea*, Swains., 1837.

Marche and De Compiègne have collected specimens at Dakar, Joal and Bathurst. At the Gambia Dr. Rendall took a nest containing seven white eggs; this nest was built in the long grass and was a slight structure. In the same district Mr. Budgett found it very abundant on M'Carthy Island. Verreaux received it from Casamanse, and specimens have been procured at Bissao by Baudouin and Fea.

In the Gold Coast district Mr. Boyd Alexander found the species plentiful, and procured specimens at Gomieri and as far inland as Gambaga, where it had previously been met with by Capt. Giffard. Drs. Reichenow and Lühder found it on the Accra plains, and in Togoland it has been obtained near Krachi and Mangu. A little further down the coast, at Abeokuta, Mr. Robin procured the species. In the Niger district specimens have been collected by Falkenstein at Bonny on the coast, and on the Benue branch of the river by Forbes at Loko, and according to Dr. Hartert it is plentiful in this country. It has also been recorded from Eastern Camaroons (Carnap). Hartlaub has mentioned a specimen procured by Gugon in Gaboon, and in the Congo district Falkenstein met with it during his visit to Chinchonxo on the Loango coast, Sperling, near the mouth of the river, Böhndorff, far inland, at Kassongo on the Lualaba branch, and Storms obtained it during his Tanganyika expedition. Prof. Barboza du Bocage mentions it from as far south as Loanda, and makes the following very interesting remark that the country "Bengala" of Brisson and Linnæus was intended for Benguela. "Brisson writes: 'On le trouve dans le Royaume de Bengala. Du cabinet de M. de Réaumur.' Nothing is more easy than to have substituted Bengala for Benguela. In fact, our African colony of Benguela has long been a central market for small singing birds, which are brought here regularly from the coast and the interior."

In Eastern Africa, the most southern locality yet recorded for this species is the Rovuma River, where the late Joseph Thomson procured a female specimen; it has also been recorded from Undis and New Heligoland (Fülleborn). It is apparently abundant and generally distributed over German and British East Africa. Böhm procured specimens at Kakoma and in the Ugogo country, and found it in pairs or family

parties, frequenting alike the bushy country by the water-side, the dry grassy plains and the outskirts of villages, and observed it once soar in the air. Fischer remarks that, like many of the other small African birds, they frequently breed in the proximity of wasps' nests, and amongst the homes so placed he found four of the present species, three of the Sunbirds, and one of *Spermestes scutatus*. He also observed a pair of these birds breeding in a deserted nest of *Hyphantornis bojeri*. The nest and eggs are like those of *U. angolensis*, which I have described. In Ugogo, according to Dr. Pruen, these as well as other small Finches are known to the native by the name "Sunha," and in like manner at Formosa Bay, the Suaheli name "Kissiji" is of the same comprehensive character, as we are informed by Fischer.

The species has not been recorded from the western shores of Victoria Nyanza, but, to the north of that great lake, specimens have been collected by Dr. Ansorge in Unyoro; by Emin at Lado, where it is resident, living mostly in pairs, and extending northward down the Nile, having been recorded by Capt. Stanley Flower as numerous, in April, among the bushes at Jebel Ahmeda Agar; by Mr. Hawker at Fashoda, where he found it very common and tame, and by Mr. Witherby at Kaka. Mr. A. L. Butler writes to me: "Common in the bush from Doka to Galabat (Gedarel-Galabat road), May, 1901, but not met with far from water. Occurs up the Blue Nile from the Rahab and Dinder Rivers on the Abyssinian frontier to Wad Medain, and is also plentiful on the White Nile from Jebel Ain to El Kawa. At Jebel Ain, on November 15, 1902, I put a hen bird off her nest. The nest was oval horizontally, with the entrance at one end, and was composed entirely of fine grass, and well hidden at the base of a thorn bush by a thick growth of the same yellow grass as the nest was composed of. The eggs, four in number and pure white, would be hard to dis-

tinguish from those of many of the other small Weavers." The nests found by Heuglin were artistic, loose structures of dry grass, placed in bushes at four to eight feet from the ground, and contained three to six eggs. He found the species ranging to as far north as the Takah district, and in the mountains up to 7,000 feet. Dr. Blanford writes: "Common on the highlands, less so at a lower elevation, but seen not infrequently in the Anseba Valley, and even as low as Ailet (1,200 feet above the sea)."

Hartmann met with a large flock of these birds on the Blue Nile, and according to Ragazzi it is common in Shoa. To the east, specimens have been collected by Lord Lovat at Lake Harrar Meyer and Laga Harding, by Mr. Harrison at Tadechamulka, and according to Mr. Pease it is widely distributed over this district.

Its occurrence in Central Somaliland is known to me by the two specimens collected by Dr. Donaldson Smith at Luku and Sheik Husein.

Regarding a species from Kibwesi, near the northern base of Mount Kilimanjaro, Mr. Jackson writes: "This pretty little bird is found everywhere in the country. Its nest is made of dry grass, and is found in various positions, such as in a low bush, in a mimosa or acacia tree, thirty feet from the ground, in the thatch of a native hut, or in the deserted nest of the common Yellow Weaver-bird."

Genus XI. **ESTRILDA.**

Very similar in structure to *Uraginthus*, with the second primary shorter than the fifth, but differs in the tail not being longer than the wing, and in the upper tail-coverts never being blue, but always red, unless there is a crimson band through the eye in adults. Sexes generally alike in plumage.

Type.

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| Estrilda, Swains. Zool. Journ. iii. p. 349 (1827) | . . . | <i>E. astrild.</i> |
| Habropyga, Cab. Arch. f. Naturgesch. xiii. p. 331 (1847) | . | <i>E. astrild.</i> |
| Neisna, Bp. Consp. i. p. 460 (1850) | | <i>E. subflava.</i> |

Melpoda, Reichenb. Singv. p. 26 (1863)	<i>E. melpoda.</i>
Brunhilda, Reichenb. t. c. p. 48	<i>E. erythronota.</i>
Mormolycea, Reichenb. t. c. p. 67	<i>E. larvata.</i>
Haplopyga (<i>laps. cal.</i>), Heugl. Orn. N. O. Afr. App. p. cxxxvii. (1873)	<i>E. astrild.</i>

The members of this genus, with the exception of *E. rufibarba*, which inhabits Southern Arabia, are confined to Tropical and South Africa. I have distinguished in my key thirty-six forms; of these the first nine might perhaps be united in *E. astrild*; *E. marwitzi* to *E. roseicrissa*; to *E. perreini* the four forms following in my key. As local species I should recognise *E. clarkei* as the southern representative of *E. subflava*; *E. elizæ* as the Fernando Po representative of *E. nonnula*; and *E. delamerei* as the northern representative of *E. erythronota*. *E. charnosyna* is the oldest name for *E. nigrimentum*, *Salvadori*.

KEY TO THE SPECIES AND MINOR DIVISIONS.

- a.* A crimson band through the eye in adult males.
- a*¹. Upper parts distinctly barred; bill of one colour; head alike in both sexes; red eye-band absent only in young birds.
- a*². Under tail-coverts black; upper tail-coverts barred; bill red.
- a*³. Less red on plumage; no crimson shade on mantle.
- a*⁴. Adult males, with a sharply defined vermilion band down the centre of lower breast.
- a*⁵. Sides of head and upper throat less pure white (South Africa and St. Helena).
- a*⁶. Rarely any trace of red on upper tail-coverts.
- a*⁷. Darker; upper parts more dusky brown . . . *cavendishi.*
- b*⁷. Paler; upper parts more earthy brown . . . *astrild.*
- b*⁶. Some crimson on upper tail-coverts or base of tail.
- c*⁷. Upper parts paler; less red on upper tail-coverts and tail *damarensis.*
- d*⁷. Upper parts darker; more red on upper tail-coverts and tail. *sanctæ-helenæ.*
- b*⁵. Sides of head and upper throat pure white. . . *minor.*
- b*⁴. Sexes alike in colouring; breast more pink, with no bright vermilion; sides of head and upper throat pure white or tinted with pink.

- c*⁵. More rosy shade on the neck and breast . . . *peasei*. 207
*d*⁵. Less rosy shade on the neck and breast.
*c*⁶. Upper parts darker and browner *occidentalis*. 208
*d*⁶. Upper parts paler and greyer *sousæ*. 208
*b*³. More red on plumage; a crimson shade on mantle. *rubriventris*. 208
*b*². Under tail-coverts not black; upper tail-coverts not barred.
*c*³. Upper tail-coverts black; under tail-coverts whitish.
*c*⁴. Bill red *cinerea*. 205
*d*⁴. Bill black *rufibarba*. 205
*d*³. Upper tail-coverts red; bill black; some red on wings *rhodopyga*. 205
*b*¹. Upper parts uniform olive brown, with the rump red; bill red, with the culmen and keel black; under parts mostly yellow or orange red.
*c*². A crimson band through the eye; abdomen and under tail-coverts orange red.
*e*³. Throat and breast strongly shaded with orange red. *subflava* ♂ ad. 207
*f*³. Throat and breast golden yellow with scarcely any orange. *clarkei* ♂ ad. 207
*d*². No crimson band through the eye; centre of breast, abdomen and under tail-coverts buff.
*g*³. Centre of breast and abdomen orange shaded buff. *subflava* ♀. 207
*h*³. Centre of breast and abdomen lemon shaded buff. *clarkei* ♀. 207
b. No crimson band through the eye; rump red; no olive shade on the mantle.
*c*¹. Sides of head with an orange red patch *melpoda*. 212
*d*¹. No red patch on sides of head.
*e*². Neither crown nor sides of head black.
*i*³. Upper parts not mostly lavender grey.
*e*⁴. Under parts more ashy white, with little or no yellow shade.
*e*⁵. Top of head grey *paludicola*. 214
*f*⁵. Top of head brown like the back.
*e*⁶. Upper parts paler, less rufous brown; flanks paler grey *roseicrissa*. 214
*f*⁶. Upper parts darker more rufous brown; flanks darker grey *marwitzi*. 214
*f*⁴. Under parts strongly washed with yellow.
*g*⁵. Sides of head grey; under tail-coverts golden brown *poliopareia*. 216

- h*⁵. Sides of head pale yellowish brown; under tail-coverts sandy buff *ochrogaster*. 2
- k*³. Upper parts mostly lavender grey.
- g*⁴. Tail and under tail-coverts red *cærulescens*. 2
- h*⁴. Tail black; under tail-coverts black or dusky grey.
- i*⁵. Abdomen and under tail-coverts slightly blacker.
- g*⁶. Less or no crimson on flanks *perreini*. 2
- h*⁶. More crimson on flanks *thomensis*. 2
- k*⁵. Abdomen and under tail-coverts slightly greyer.
- i*⁶. Upper tail-coverts a shade darker; under tail-coverts slightly more dusky *poliogaster*. 2
- k*⁶. Upper tail-coverts a shade paler; under tail-coverts slightly greyer *incana*. 2
- f*². Crown or sides of head entirely black in adults.
- l*³. Upper parts not distinctly barred.
- i*⁴. Some tiny white spots on sides of breast; sides of head and the upper throat black.
- l*⁵. Paler; black on under parts confined to upper throat, centre of abdomen and under tail-coverts; crown ashy grey.
- l*⁶. General plumage lavender grey *nigricollis*. 2
- m*⁶. General plumage vinous pink *vinacea*. 2
- m*⁵. Darker; entire throat black; breast black, with the exception of the front and sides, which are vinous red *larvata*. 2
- k*⁴. No white spots on the breast.
- n*⁵. Upper half of head black, or entire head sepia brown like the back *kandti*. 2
- o*⁵. Head, neck and mantle greyish brown; under parts washed with brown *nonnula*, juv. 2
- m*³. Upper parts very distinctly barred.
- l*⁴. Entire upper half of head black; some red on the flanks.
- p*⁵. A red patch on each side of culmen; under tail-coverts whitish.
- n*⁶. Under parts mostly pure white *nonnula*, ad. 2
- o*⁶. Under parts white, tinted with grey *elizæ*. 2
- q*⁵. Upper mandible entirely black; under tail-coverts blackish *atricapilla*. 2
- m*⁴. Sides of head black; crown brownish ash.
- r*⁵. Centre of breast, thighs and under tail-coverts black.

- p*⁶. Slightly darker; grey of neck not inclining to white next to the black ear-coverts; dark and pale bars on wings contrasting less strongly *erythronota*. 230
- q*⁶. Slightly paler and pinker; grey of neck fading into a whitish margin next to the black ear-coverts; bars on wings black and and white more sharply contrasting . . . *delamerei*. 231
- s*⁵. Breast more uniform rosy buff with no black on abdomen, thighs, nor under tail-coverts; a more distinct whitish band margins the black ear-coverts; throat rosy white with only a few black feathers on the chin *charmosyna*. 253

Estrilda astrild.

Loxia astrild, Linn. S. N. (x.) p. 173 (1858); id. (xii.) i. p. 303 (1766).
Estrilda astrild, Sharpe, Cat. B. M. xiii. p. 391 (1890); Butler, Foreign Finches in Captivity, p. 134, pl. 26, fig. 2 (1894); Ridgway, Proc. U. S. Mus. 1895, p. 518, *Amirante Isl.*; Shelley, B. Afr. I. No. 399 (1896); Nehr Korn, Kat. Eiers. p. 128 (1899) *egg*; Whitehead, Ibis, 1903, p. 224 *Orange R.*; Shortridge, Ibis, 1904, p. 177 *Pondoland*; Reichen. Vög. Afr. iii. p. 178 (1904); Clarke, Ibis, 1904, p. 524. *Natal*.

Subspecies a.

Estrilda cavendishi, Sharpe, Ibis, 1900, p. 110 *Mapicuti*.
Estrilda astrild cavendishi, Reichen. Vög. Afr. iii. p. 179 (1904).

Subspecies b.

Estrilda astrild damarensis, Reichen. Orn. Monatsb. 1902, p. 173; id. Vög. Afr. iii. p. 180 (1904) *Namaqua to Mossamedes*.

Subspecies c.

Estrilda sanctæ-helenæ, Shelley, Bull. B. O. C. xiii. p. 74 (1903) *St. Helena*.
Estrilda astrild sanctæ-helenæ, Reichen. Vög. Afr. iii. p. 179 (1904).

Adult male. Forehead, crown and back of neck ashy brown, shading into sandy brown on the back, scapulars, wing-coverts and upper tail-coverts, the whole, with the exception of the front half of the crown, crossed with numerous narrow blackish bars; quills and tail dark brown, with very narrow pale edges to the feathers, and some obscure bars showing mostly on the inner secondaries and centre tail-feathers; sides of the head with a sharply defined band of vermilion from the base of the bill, between the

nostril and gape to the upper portion of the ear-coverts and surrounding the eye; under parts sandy buff, whiter towards the bill, slightly greyer on the ear-coverts and of a pinkish shade on the throat; lower throat and sides of body with numerous narrow dusky bars; centre of breast rosy vermilion; lower abdomen and under tail-coverts black; under wing-coverts and edges of the quills isabelline buff. Iris brown; bill red; tarsi and feet brown. Total length 4.7 inches, culmen 0.35, wing 2.05; tail 2.4, tarsus 0.55. ♂, 4. 6. 81. Newcastle (Butler).

Adult female. Slightly paler, with scarcely any trace of red on the breast. ♀, 27. 1. 74, Ceres. (Shelley).

Type of E. cavendishi. Differs from the Newcastle specimen above described in the plumage being considerably darker both above and beneath. Wing 1.8, tail 1.9. ♂, 15. 9. 98. Mapicuti (Cavendish).

E. damarensis. Differs from the female above described in being paler and in having a slight shade of crimson on the upper tail-coverts. ♀, 16. 4. 65. Damaraland (Andersson).

Type of E. sanctæ-helenæ. Differs from the Newcastle specimen above described in having the upper tail-coverts and basal portion of the outer webs of the tail-feathers strongly washed with crimson. 4. 1. 74. St. Helena (Shelley).

The various forms of the Common Waxbill inclusively inhabit Tropical and South Africa southward from Sierre Leone and Abyssinia, also many of the surrounding islands.

In my key I have distinguished nine named forms; but out of these I recognise four only as distinct species, *E. astrild* (South Africa), *E. minor* (East Africa), *E. occidentalis* (West and North-east Africa), and *E. rubriventris* (Gaboon to Angola).

The Southern Common Waxbill ranges from the Cunene and Zambesi Rivers over South Africa, occurs on St. Helena, and has been introduced into the islands of Madagascar, Réunion, Mauritius, and the Ile Alphonse, one of the Amirante group.

The Natal, or typical race, is intermediate in shade of colouring between the single known specimen of *E. cavendishi*, obtained by Mr. H. S. H. Cavendish, near Sofala Bay, at

Mapicuti, and paler specimens from Damaraland, the *E. astrild damarensis*, Reichenow. The most northern range for *E. astrild* is the Zambesi, where it is plentiful, according to Mr. Boyd Alexander, who procured specimens there of it as well as of *E. minor*.

From this river southward to Cape Colony it is abundant and very generally distributed. In Mashonaland Mr. Guy Marshall "found it sometimes in very large flocks, along rivers and on cultivated lands." Frank Oates obtained specimens at Tati in Matabele. According to "Sharpe's ed. Layard's B. S. Afr.," they congregate in immense flocks throughout Cape Colony and do considerable damage to the grain crops. Their little shrill piping note may be heard even in the towns. They are said by Layard to breed in communities, and he was told that several pairs will at times make use of a single nest, laying and sitting in it promiscuously, and sometimes three or four together. "The nest," he writes, "is of a large structure, composed of straw, grasses, feathers, wool, paper, rags, &c. It is often as large as a stable bucket, round, and with an entrance in the side. The interior is a mass of feathers, and the eggs from eight to fourteen in number." Mr. Atmore writes: "The inside is very warm and comfortable, and what may be called the frame work of the nest is very nicely contrived so that all the ear-ends of the grasses are woven together to form the pipe where the entrance is. This nest was in a thicket of brambles and fern about six inches from the ground. Even after the bird flew out it required a good search before I could find it. There were twelve eggs in it (whether more than one lays in a nest, I cannot say, but only one flew out), they were in all stages of incubation—two not set, and four or five had the young birds so large I could not blow them." Mr. Ayres gives the following further notes: "I found several nests of these birds all built upon the ground,

generally in some convenient indentation sheltered by a clump of grass. The little elongated entrance of the nest is placed rather forward, with the end of it touching the ground. On the top of the nest is a sort of chamber, in which, the Caffres assure me, the male bird roosts at night during the incubation of the female." According to Stark: "Although several hens occasionally lay in the same nest, this is, according to my own experience, by no means always the case. More usually the nest is constructed by a single cock and hen, who both help in the building, and who generally sit alternately on the eggs; but at night, and occasionally by day, together. The eggs laid by a single hen are from three to five in number. They are pure white in colour; in shape usually elongated ovals, averaging 0.6×0.35 ." The Messrs. Butler, Feilding and Reid write: "Nests found at Richmond Road, in December, were tenanted by several birds," and further, "the eggs were of a lovely pink colour before being blown. From one nest examined by Reid five or six birds were seen to fly. Are they also polygamous like the Viduas." A nest I found, on March 17, 1874, was placed on the ground in a thick tuft of grass, and contained five white eggs. The nest was larger but of the same shape as that of our Common Wren, with a well-hidden aperture, was very thick and composed entirely, outside and in, of a wiry green grass.

The following notes should refer to *E. astrild damarensis*, Reichen. There are in the British Museum three specimens from Damaraland collected by Andersson, who found the species common in the southern districts of Damaraland, as well as in some parts of Great Namaqualand, and according to Mr. Fleck, it is generally distributed in large flocks over these countries and the Lake Ngami district. I do not find the pale colouring very constant in the three specimens above mentioned.

On St. Helena I shot the type of *E. sanctæ-helenæ*, January 4, 1874. This was the commonest species of wild bird I saw there. It is imported to Europe in such numbers from this island that it and its allied forms are known, to dealers in cage-birds, as the St. Helena Waxbill. According to Mr. Melliss: "It builds its nest in high trees, generally preferring the Scotch fir and Botany Bay willow (*Acacia longifolia*), and consequently suffer much by high winds blowing the nests down. The nest is spherical in form, about seven inches in diameter, with an almost closed tubular entrance on one side, and is generally built of grass and feathers, lined with cotton-wool." It is very remarkable how varied are the breeding habits of some of these closely allied forms.

Estrilda minor.

Habropyga minor, Cab. J. f. O. 1878, p. 229 *Voi R.*

Estrilda minor, Sharpe, Cat. B. M. xiii. p. 393 (1890) pt. *Melinda, Pangani, Ugogo.*

Estrilda astrild minor, Reichen. Vög. Afr. iii. p. 180 (1904) pt. *E. Africa.*

Very similar to *E. astrild* in all its plumages, differing only in the cheeks, chin and upper throat being purer white. Wing 1.9 inches. *Melinda* (Kirk).

The Lesser Common Waxbill ranges from the Zambesi River into Equatorial Africa.

The most southern known range for the species is the Zambesi River; here, as Mr. Boyd Alexander has proved, is the junction of its ranges with that of *E. astrild*, its southern representative. In the Shiré Valley it is, according to Mr. Percival, very common. Mr. Whyte has procured specimens at Zomba, also on the Milanji Plain, at 4,000 feet; and according to General Manning, who obtained it on Mount Moloza, it is known to the natives as the "Chijojola." Sir

John Kirk has collected specimens in the Shiré district, Ugogo, at Pangani and Melinda, all of which are in the British Museum. Dr. Stuhlmann informs us that the native name for the species at Quilimane is "Mrie," and at Zanzibar "Tongo."

Böhm obtained specimens on Zanzibar Island, in Ugogo, at Tabora and Kakoma, and records it as abundant there, frequenting the bush near habitations. In the middle of April he found their nests in a banana plantation adjoining a village; they were placed amongst the roots and rubbish at the base of banana stems, constructed of grass, hair, and a mass of feathers from the village poultry, and contained five white eggs. According to Fischer, the nests he found resembled those of *Spermestes scutatus*, but were more strongly and neatly constructed, with a shorter and flatter entrance passage. The eggs are white and measure 0.52×0.40 . He also found one of these nests built amongst the thick foliage at the end of a bough of a mango-tree, some six feet from the ground. He never met with more than one pair making use of any nest; but they are sociable and fly about in flocks with other species, and he has seen one perched on the same blade of grass in company with *Quelea æthiopica*. They were generally distributed through the country he explored from Bagamoyo to the Tana River. The type is a specimen procured by Hildebrandt at the Voi River, some fifty miles north of Mombasa. To this form I refer all Lord Delamere's specimens now in the British Museum, from the Athi River, Nairobi, Lake Elmenteita, Likipia, and North-east Kenia; Mr. Jackson's specimens from Machako's, Nyando Valley, Eldoma Ravine, and from Nandi. He records the species as abundant, in flocks varying in number from eight to more than a hundred, and he adds: "It keeps up a constant twitter when on the wing, but is quiet when feeding, its food consisting of small grass-seed. It makes a nest of fine grass, very compact,

lined with a few feathers. Eggs white. It is partial to the vicinity of habitations."

Estrilda occidentalis.

Estrilda occidentalis, Fraser and Jard, Contr. Orn. 1851, p. 156 *Fernando Po*.

Estrilda astrild occidentalis, Reichen. Vög. Afr. iii. p. 180 (1904).

Estrilda peasei, Shelley, Bull. B. O. C. xiii. pp. 74, 75 (1903) *Abyssinia*.

Subspecies a.

Estrilda astrild sousæ, Reichen. Vög. Afr. iii. p. 182 *St. Thomas Isl.*

Estrilda astrild (non Linn.), Bocage, Journ. Lisb. 1904, p. 81 *St. Thomas Isl.*

Adult male. Very similar to *E. astrild*; upper parts rather dark; cheeks, ear-coverts and upper throat white; remainder of throat and the centre of breast, down to the black abdomen, buff, with a pink shade and no trace of vermilion. "Bill waxy scarlet; feet and claws sepia." Total length 4.3 inches, culmen 0.3, wing 1.75, tail 1.75, tarsus 0.55. ♂. Bo, June and August (Kemp).

Adult female. Like the male. Wing 1.75. Bo, August (Kemp).

Type of E. peasei. Slightly paler above and a little more pink below. Jeffi Dunsä (Pease).

Type of E. astrild sousæ. "Similar to *E. astrild minor*, with the upper parts greyer and paler" (Reichenow).

Fraser's Waxbill ranges from Sierra Leone southward into Benguela, and eastward into Abyssinia.

Near Sierra Leone Mr. Kemp has collected twenty-three specimens in May, June, July and August, showing that the plumage of the sexes is always alike. He writes: "At Bo, in August and September, these birds were abundant in patches of a feathery grass called 'Foudie' by the natives, who cultivate it for food. They here assemble in compact little flocks, with other small Weavers, to feed on the ripened seed, and on one occasion, with a single cartridge, I killed seven head, including, besides the present species, specimens of *E. subflava*,

Spermestes cucullatus, *Vidua serena*, and a small kind of rat. In September, these and the other Waxbills pair for the breeding season and then cease to be gregarious." These Waxbills not having been recorded from anywhere between Sierra Leone and Fernando Po, shows how much we have yet to learn regarding the avifauna of Africa.

The species was discovered by Fraser on Fernando Po, where, according to Mr. Boyd Alexander, it is abundant. In Camaroons, it has been procured at Jaunde by Mr. Zenker, and further inland, at the Ja River, Mr. Bates obtained a male and female in May, 1904. The species is also represented in the British Museum by a specimen from Gaboon (Du Chaillu), one from Kibondo (Böhndorff) and another from Benguela obtained by Mr. Monteiro, who writes: "Very abundant in Angola, particularly to the south: gregarious in flocks of hundreds of individuals." Anchieta has obtained the species at Quissange, and gives "Maracaxong" as its native name, so to this species probably belongs a bird procured by Van der Kellen in Mossamedes, but I have not seen the specimen, nor have I seen any *Estrilda* from St. Thomas Island, so cannot express an opinion as to the specific merits of *E. astrild sousæ*, but presume it should have been compared in the original description to *E. occidentalis* rather than to *E. minor*. To *E. occidentalis* belongs a specimen from the Albert Edward Nyanza (Scott Elliot), also the specimens in Mr. Jackson's collection from Uganda and Toro near Katwe. I therefore presume that the specimens collected at Lado, Bukoba and Bujambo (Emin) belong to this species, to which I also refer the North-east African birds, my *E. peasei*, represented in the British Museum by a male and female from Dunsu (Pease), two males from the Lakes Harrar Meyer and Chercha (Lovat), and one from Abyssinia (Harris). Probably to this form belongs the *E. astrild minor*, Oustalet, from Somaliland.

Dr. Ragazzi obtained five specimens in Shoa, and it is, according to Heuglin, a summer visitor in its northern range, as he met with it from May to October only in Southern Nubia, Sennar, Abyssinia, and along the White Nile, generally scattered over the country up to 7,000 feet, in small or large flocks.

Estrilda rubriventris.

Fringilla rubriventris, Vieill. Enc. Méth. iii. p. 992 (1823).

Estrilda rubriventris, Sharpe, Cat. B. M. xiii. p. 393 (1890).

Estrilda rubriventris (*laps. cal.*), Shelley, B. Afr. I. No. 400 (1896).

Estrilda astrild angolensis, Reichen. Orn. Monatsb. 1902, p. 173 *Angola* ;
id. Vög. Afr. iii. p. 180 (1904).

L'Astrild à ventre rouge, Vieill. Ois. Chant. p. 36, pl. 13 (1805) *Cage-bird*.

Differs from *E. occidentalis* in having the mantle, upper tail-coverts, edges of tail-feathers and most of the under parts washed with rosy carmine. Wing 1.8. Gaboon (Verreaux).

The Loango Waxbill ranges from Gaboon into Angola.

The species is known to me by six specimens only; these are in the British Museum; from Gaboon (Du Chaillu), Landana (Lucan and Petit) and Quindumbo (Burton); of these, the specimens from Landana are the most strongly marked. The species, as I understand it, is apparently limited in range to a comparatively small area, and is surrounded to the north, east and south by *E. occidentalis*, so, as I have not seen the specimens from Melanje (Mechow) I hesitate to refer them to the present species, for I find I differ from Dr. Reichenow with regard to the range of this Waxbill, and I cannot agree with him in rejecting the name *Fringilla rubriventris*, Vieill., for this species; the type was a cage-bird figured as *L'Astrild à ventre rouge*, and that figure fairly represents the present, and no other species.

Dr. Reichenow divides the allied forms of this group into *E. astrild* and seven subspecies; I have not differed so greatly from this arrangement as it may appear at first sight; but by recognising four of these as good species, I hope to enable others to appreciate better the relative value of the remaining named forms, which are less distinctly characterised.

Estrilda cinerea.

- Fringilla cinerea*, Vieill. N. Dict. xii. p. 176 (1817).
Estrilda cinerea, Sharpe, Cat. B. M. xiii. p. 394 (1890); Butler, Foreign Finches in Captivity, p. 131, pl. 26, fig. 1 (1894); Shelley, B. Afr. I. No. 402 (1896); Nehr Korn, Kat. Eiers. p. 128 (1899) *egg*; Reichen. Vög. Afr. iii. p. 182 (1904).
Fringilla troglodytes, Licht. Verz. Doubl. p. 26 (1823) *Senegambia*.
Astrild nigricauda, Reichenb. Singv. p. 10. pl. 6, figs. 55, 56 (1863).
Estrelida melanopygia, Heugl. J. f. O. 1864, p. 251.
Estrilda jagoensis, Alexander, Ibis, 1898, pp. 85, 92, 99, 115, 281 *Cape Verde Isl.*

Adults. Upper parts drab brown, with a very faint rosy shade and indistinct narrow darker bars; rump, upper tail-coverts and the tail black, the three outer pairs of tail-feathers have white outer and terminal edges, most strongly marked on the outermost feathers; wing-coverts like the back; quills darker brown, with paler outer edges and white inner edges; under coverts tawny buff; a crimson band through the eye; cheeks, ear-coverts and breast rosy buff, slightly more ashy on the sides of the body, where the feathers are narrowly barred with indistinct brown lines; centre of the abdomen washed with crimson; thighs and under tail-coverts nearly white. "Iris brown; bill scarlet; tarsi and feet dark brown." Total length 3.4 inches, culmen 0.35, wing 1.8 and 1.75, tail 1.5, tarsus 0.5. ♂, ♀, 5. 5. 01. Karaga (Alexander).

Immature. Differs in having no red on the plumage; entire upper half of head brown with no red eyebrow; breast and under tail-coverts brownish buff. "Iris pale brown; bill dark yellowish brown; feet dusk brown." ♀, juv., 3. 8. 85. Wadelai (Emin).

The Common Black-rumped Waxbill ranges over Tropical Africa from 5° to 17° N. lat.

Its occurrence in the Cape Verde Islands was first recorded

by Dr. Dohrn, and Mr. Keulemans who accompanied his expedition to those islands informs me: "It was met with in flocks of considerable size along the banks of the streams. Native names, 'Gingerotte' and 'Boca vermillio.'" Mr. Boyd Alexander, who believed the birds of these islands to be distinct from those of the mainland, named the single specimen he brought home with him *E. jagoensis*, and according to his notes, it frequents the sugar-cane in large flocks, which keep up a constant twittering while on the wing and reminded him of the Lesser Redpole. It is locally known as the "Sugar-cane bird." He found it on Santiago, Brava, Sao Vicente and Boavista. On November 17, while on Sao Nicolau he took a nest of the species. "It was placed between the upper stems of a young orange-tree, domed like a Sparrow's, and composed of very fine freshly plucked grass. The eggs, four in number, were white and measured 0.6×0.45 ."

In the British Museum there are specimens from Dakar on Cape Verde, Gambia, Gold Coast, Niger, Wadelai, Lado and Fashoda.

In the Gold Coast Colony Ussher procured specimens from Denkeria, and Mr. Alexander met with it at Karaga and Krachi. Forbes found it on several occasions at Shonga on the Niger, which is the most southern range yet recorded for the species. It appears to be entirely replaced on Fernando Po and in Camaroons by *E. occidentalis*; but the present species occurs along the Upper White Nile, in Kordofan, Senaar and Southern Nubia. According to Mr. Hawker it is never very common at Fashoda, and Heuglin met with it in North-east Africa only during the early spring from January to May, when it appeared to him to live a roving life and was generally in large, closely packed flocks, at times descending, with harsh piping notes, to rest on the tufts of high grass or bushes.



1. *Estrilda rhodopyga*.
2.3. " *vinacea*.

Estrilda rufibarba.

Habropyga rufibarba, Cat. Mus. Hein. i. p. 169 (1851) *Arabia*.
Estrilda rufibarba, Sharpe, Cat. B. M. xiii. p. 394 (1890); Shelley B. Afr. I.
 No. 401 (1896); Reichen. Vög. Afr. iii. p. 182 (1904).
Estrela buccalis, Licht. Nomencl. p. 48 (1854) *Arabia*.

Adults. Upper parts barred with pale ashy brown and dark brown, the bars diminishing in width on the crown, the forepart of which and the forehead are uniform dark ashy brown; rump and upper tail-coverts jet black; tail brownish black, the two outermost pairs of feathers with their outer edges white, imperfectly barred with dusky brown; primaries and outer secondaries uniform brown; a crimson band extends back from the upper mandible round the eye and over the ear-coverts; cheeks, ear-coverts, chin and upper throat white; remainder of the under parts buff, with narrow dusky brown bars on the lower throat, chest and flanks. "Iris red; bill reddish black, with the culmen and keel black" (Heuglin). Total length 4 inches, culmen 0.35, wing 1.8, tail 1.9, tarsus 0.55. Lehej (Yerbury).

The Aden Waxbill occurs as a straggler along the east coast of Abyssinia, and ranges over Southern Arabia.

There is a specimen in the Berlin Museum labelled "Nubia," which belongs to this species, according to Dr. Finsch.

Estrilda rhodopyga. (Plate 32, fig. 1.)

Estrilda rhodopyga, Sundev. Öfv. K. Vet. Akad. Förh. Stockh. 1850,
 p. 126 *Senaar*; Sharpe, Cat. B. M. xiii. p. 396 (1890); Shelley,
 B. Afr. I. No. 403 (1896); Reichen. Vög. Afr. iii. p. 183 (1904).
Estrela rhodoptera, Sundev. (*laps. cal.*) Bp. Consp. i. p. 459 (1850).
Habropyga frenata, Cab. Mus. Hein. i. p. 169 (1851).
Estrela effrenata, Licht. Nom. Av. p. 48 (1854).
Estrela leucotus, Heugl. J. f. O. 1862, p. 29 *Keren*.

Adult. Forehead, crown and nape ashy brown, passing into sandy brown on the mantle, and finely barred with dusky brown; lower back and upper tail-coverts crimson; tail brownish black, washed with crimson towards the outer edges of the feathers; the two outer pairs, with the outer webs pale brown, with indistinct dark bars; wings brown; lesser coverts like the mantle; greater coverts and inner secondaries broadly edged with crimson; under wing-coverts sandy buff; inner edges of the quills whitish; side of

head with a broad crimson band separating the crown from the cheek and ear-coverts, which are buff like the chin, throat and centre of the breast; front and sides of body of a more rufous shade, faintly barred with dusky brown, and a slight wash of crimson near the thighs; vent and under tail-coverts darker, especially so in the male, the feathers being dusky black, barred with sandy-buff and faintly washed with crimson. Iris red; bill and legs black. Total length 4 inches, culmen 0.4, wing 1.8, tail 1.8, tarsus 0.45. ♂, 11. 11. 02; ♀, 1. 11. 02, Khartoum (A. L. Butler).

Sundevall's Waxbill inhabits Eastern Africa between 7° S. lat. and 16° N. lat.

The most southern range known for the species is Ugogo; here Mr. Oscar Neumann procured a specimen at Tisso, and Mr. Werther one at Irangi. Along the southern shore of Victoria Nyanza Emin obtained specimens at Bussisi, and in the White Nile district a fine series at Lado and Wadelai. Further down the Nile Mr. A. L. Butler found it "fairly common in the gardens of Khartoum (only noticed in winter and spring), feeding on grass-seeds, and going about in parties of seven or eight. A female, shot on November 1, and a male on the 12th of that month, were apparently breeding."

In Central Equatorial Africa Mr. Jackson obtained a specimen at Toro near Katwe, Dr. Ansorge met with it in Unyoro, and Mr. Neumann at Nguruman. From Somaliland it was first recorded by M. Oustalet, and has since been found there by Dr. Donaldson Smith at Webbe Shebeli and Sheik Husein. Elliot collected five specimens at Hillier, and Mr. Hawker saw a flock at the native wells of Gebili. In Southern Abyssinia Lord Lovat met with it at Feyambiro and the Kassim River, and Mr. Pease collected specimens in this district in November, December and February, and found them frequenting the bush in preference to the reed-beds; Dr. Ragazzi obtained it at Soddé, in Shoa, in August. The type came from Senaar. In Northern Abyssinia Heuglin met with the type of his *Estrellda leucotis* in the thick bush near Keren,

and observed that there was a specimen of it in the Berlin Museum labelled "Nubia." Dr. Blandford saw the species in flocks at Zoulla, and it has been procured by Mr. Jesse at Bejook.

Estrilda subflava.

Fringilla subflava, Vieill. N. Dict. xxx. p. 575 (1819) *Senegal*.

Estrilda subflava, Shelley, B. Afr. I. p. 404 (1896); Reichen. Vög. Afr. iii. p. 186 (1904).

Sporæginthus subflavus, Sharpe, Cat. B. M. xiii. p. 324 (1890); Butler, Foreign Finches in Captivity, p. 107, pl. 21, fig. 3 (1894); Nehr Korn, Kat. Eiers. p. 126 (1899) *egg*.

Fringilla sanguinolenta, Temm. Pl. Col. iii. pl. 221, fig. 2 (1823).

Pytelia mitchelli, Reichenb. Singv. p. 24, pl. 18, figs. 161, 162 (1863).

Sporæginthus miniatus, Heugl. J. f. O. 1863, p. 167 *Gazelle R.*

Estrilda subflava orientalis, Heugl. J. f. O. 1868, p. 11 *N. E. Afr.*

Adult male. Upper parts brown, with a slight olive shade; rump and upper tail-coverts scarlet-shaded crimson; tail dark brown, with the outer web, viewed from beneath, whitish and a white terminal margin to the next feather; under wing-coverts and inner edges of quills whitish; a deep crimson eyebrow from the nostril to above the ear-coverts; ear-coverts brown of the same shade as the sides and back of the neck; cheeks and under parts yellow, with the sides of the body barred with ashy olive and pale yellow; abdomen and under tail-coverts reddish orange, with which colour the lower throat and breast is strongly shaded. "Iris red; bill scarlet, with the culmen and keel black; feet flesh colour." Total length 3·8 inches, culmen 0·3, wing 1·7, tail 1·4, tarsus 0·45. ♂, 1. 12. 82. Lado (Emin).

Adult female. Differs in having no red band on the side of the head; less red on the rump and upper tail-coverts; under parts paler buff, slightly shaded with orange down the centre of the breast. "Iris crimson; bill as in the male; feet flesh colour." Wing 1·7. ♀, 6. 5. 01. Kaka (Hawker).

The Northern Zebra Waxbill ranges over North Tropical Africa between about 16° N. lat. and the Equator.

In its most northern known range, St. Louis, at the mouth of the Senegal River, Laglaise procured a specimen which is now in the British Museum. It has also been recorded from

the Gambia (Marche) and Casamance (Verreaux). Near Sierra Leone Mr. Kemp collected twenty specimens at Jagbamah and Bo, "where it was feeding in company with other small Weavers on the seed of a feathery grass, but is less common than *E. occidentalis*." It is further represented in the British Museum by one of Forbes's specimens from Shongo on the Niger, fourteen examples from the White Nile district, and three from Southern Abyssinia.

Mr. Jackson has obtained a richly coloured specimen in Uganda, and the species appears to be abundant along the Nile to as far south as Lado, where Emin has collected many specimens: others have been obtained at the mouth of the Zeraf River, by Capt. Dunn, and near Fashoda and Kaka, by Mr. Hawker, who writes: "Occurs in small flocks; I never noticed it north of Kaka."

Heuglin obtained the type of his *Sporæginthus miniatus* at the Gazelle River; he also met with the species on Req Island, and in Central Abyssinia on the Dembea Plains, living in small parties of five to ten, apparently preferring the tops of the higher trees, and uttering their note during flight. In Southern Abyssinia it has been procured by Lord Lovat. Dr. Butler, in his "Foreign Finches in Captivity," quotes from Dr. Russ the following interesting remarks: "With proper attention it keeps in good health in the dealers' cages for years, only it usually becomes black. It wonderfully soon takes steps to breed, whether flying at large in a bird room, or in a small cage. The power of production of this species is astounding; the first pair in my bird-room bred seven times in vain, and only the eighth time, when small fresh ants' eggs had been obtained, was a brood of five young ones satisfactorily reared. A pair belonging to Dr. Rey, of Halle, produced fifty-four young in the course of one year; however, all died; besides this, sixty-seven eggs were taken away. The love dance is

comical; the song scarcely more than a sparrow-like, yet not inharmonious, chirp, repeated an innumerable quantity of times in the early morning during the nesting season." He further remarks: "Laying three to four, even sometimes seven to nine, eggs, which are incubated alternately by the male and female for two hours at a time. Nestling-down whitish yellow. Expansions of beak yellowish white. Young plumage bright yellowish grey, to be distinguished by the weak, but clearly perceptible, reddish yellow colouring of the croup, little beak shining black; eyes dark brown; feet black brown. The change of colour begins after three weeks: in five weeks the feathering below is clear yellowish, upper surface darker brown; after eight weeks the yellow becomes deep and shining, the little bill red, and the superciliary stripe, which began to appear about the sixth week, is perfected. Then the bird is fit to propagate its kind. The lively orange red of the male is first shown in the second year; by the fifth year it has sometimes extended itself uniformly over the throat, breast and front of abdomen; males so coloured are, however, rare."

The eggs are described by Mr. Nehr Korn as pure white and measuring 0.6×0.44 .

Estrilda clarkei.

Coccygia clarkei, Shelley, Bull. B. O. C. xiii. p. 75 (1903) *Natal*.

Estrilda subflava (non Vieill.), Clarke, Ibis, 1904, p. 524 *S. Afr.*; Reichen.

Vög. Afr. iii. p. 186 (1904) *pt. S. of Equator*.

Adult male. Similar to *E. subflava*, from which it differs in the entire throat and centre of the breast being pale yellow, with, at most, a slight wash of orange on the crop. "Iris red brown; bill crimson, the ridge and gonys black; legs and feet flesh colour" (Stark). Total length 3.8 inches, culmen 0.3, wing 1.8, tail 1.4, tarsus 0.45. Type, ♂, 8. 12. 81, Richmond Road, Natal (Reid); also ♂, 3. 2. 00, Msara (Delamere).

Adult female. Differs in having no red band on the side of the head; less red on the rump and upper tail-coverts; throat and centre of the breast

buffy white, with a faint lemon shade on the breast and less orange red shade on the under tail-coverts. Wing 1.7. ♀, 15. 9. 81, Newcastle (Reid).

The Southern Zebra Waxbill ranges from Natal to the Equator.

In 1881 Professor Barboza du Bocage recorded a specimen as having been obtained by Welwitsch at Icolo, in Angola, between the Bengo and Quanza Rivers, otherwise this species has not been observed from anywhere further west than Natal.

I have separated this southern form from *O. subflava* (Vieill.) on account of the paler yellow on the under parts, the breast and cheeks never being washed with orange scarlet. "An old male," described by Stark, "under surface of body, below the throat, of a bright scarlet; the flanks barred with olive and pale red; under tail-coverts deep scarlet; sides of face red." Such a bird has, I venture to say, never been bred in a wild state in South Africa; it undoubtedly belongs to the more typical northern form.

The Southern Zebra Waxbill is a resident in Natal and the Transvaal, but has not been recorded from Cape Colony. Stark writes: "These very beautiful little Waxbills differ somewhat in their habits from the common *Estrilda astrild*. They prefer the borders of streams and marshes, where there is a thick growth of bushes and reeds, to the more grass lands, and they are much shyer and more easily alarmed. In Natal, where they are not uncommon from May to December, I have generally met with them in flocks of no great size, feeding on the ground on grass-seeds, but taking refuge in bushes if disturbed. When feeding they keep up a continuous chirping." He further writes: "The eggs of this species are pure white and measure on the average 0.52 × 0.40."

Capt. Savile Reid writes: "Lieut. Giffard and I met with a small flock near Newcastle in September, very shy indeed, and obtained several specimens, both male and female. I was somewhat surprised at meeting with a large flock also, frequenting a reed-grown stream at Richmond Road, near Pietermaritzburg in December. They stuck pertinaciously to the thick covert, perching, however, on the reeds." These were all he met with in Natal. I have named the species after my friend, Major S. R. Clarke, who found it to be abundant in small flocks along the Ingogo River, and his brother took three clutches of eggs, all out of deserted nests of *Pyromelana orix*, in reed-beds near Bronker's Spruit. Mr. Cavendish procured the species near Beira on the Mozambique Coast, and Mr. Boyd Alexander, during his journey up the Zambesi, at Senna, where it was in company with *E. astrild*, "frequenting the small waste islands in the river that are overgrown with tall grass, from which it is difficult to drive them away. The chattering notes are by no means unpleasant, and are far more musical than those of *E. astrild*. In immature males the upper and under tail-coverts are the first to assume the adult colouration, followed by the feathers of the sides of the chest and flanks becoming barred. In young birds the bill is black, while the iris is variable from a straw colour to a brown."

These Waxbills are apparently generally distributed over Nyasaland, where General Manning found them known to the natives as the "Kajojola." Böhm procured specimens at Karema, to the east of Lake Tanganyika, and at Qua Mpara on its western shores, frequenting the grass country and maize-fields, so that its occurrence at Icolo in Western Angola is not very surprising.

To this species should belong the specimens obtained in the Victoria Nyanza district, by Fischer at Kagehi, and by Emin at Bukoba; for Mr. Jackson procured an example at Witu,

and the most northern range I can suggest for the species is Mount Kenia, where Lord Delamere shot an adult male at Msara on the north side of that mountain in February, 1900, which agrees well with the type from Natal; but this may possibly be a specimen of *S. subflava* which has not assumed its full plumage, and if so, it is the only specimen in the British Museum, from north of the Equator, I could mistake for *E. clarkei*.

Estrilda melpoda.

- Fringilla melpoda*, Vieill. N. Dict. xii. p. 177 (1817).
Estrilda melpoda, Shelley, B. Afr. I. No. 405 (1896); Reichen. J. f. O. 1902, p. 37 *Togo*; id. Vög. Afr. iii. p. 186 (1904.)
Sporæginthus melpoda, Sharpe, Cat. B. M. xiii. p. 325 (1890); Butler, Foreign Finches in Captivity, p. 104, pl. 21, figs. 1, 2 (1894).
 "Fringilla lippa, Licht." Bp. Consp. i. p. 460 (1850).

Adults. Forehead and crown ashy grey; back of neck, mantle, wing-coverts and outer edges of the quills pale chocolate brown; rump and upper tail-coverts crimson; tail blackish brown, with whitish outer and terminal edges to the outer three pairs of feathers; under surface of the wing brown, with the inner edges of the quills and the coverts tawny buff; sides of head orange, shaded with crimson on the sides of the forehead and in front of the eyes; cheeks, throat, breast, thighs and under tail-coverts whitish ash, paler on the abdomen, which is partly washed with ochreous buff. "Iris light brown; bill scarlet; tarsi and feet deep horny" (Forbes). Total length 3.7 and 4.0 inches, culmen 0.35, wing 1.8 and 1.7, tail 1.6, tarsus 0.55. ♂, ♀, 11. 11. 00. Kumassi (Alexander).

Immature. Differs in the orange on the sides of the head being paler and less bright, and in the crimson being duller and more restricted to the upper tail-coverts; chest, abdomen and under tail-coverts tawny buff, contrasting with the ashy white throat. ♀, 30. 11. 00. Kintampo (Alexander).

The Orange-cheeked Waxbill ranges from Senegambia into Angola.

In the British Museum there is a specimen labelled "Senegal (Laglaise)"; Marche and De Compiègne collected

others at Daranka and the Gambia. In the latter district Dr. P. Rendall found its nest, hidden in long grass, lightly constructed of that material, and containing seven white eggs; these measure 0.52×0.4 . At Bo, close to Sierra Leone, Mr. Kemp has collected specimens in February, July and August. Dr. Buttikofer met with it in Liberia at Oldfield and Schiefelinsville. During my visit to the Gold Coast with T. E. Buckley we frequently saw it in small parties, feeding on the paths, near Cape Coast and Abrobonko; Drs. Reichenow and Lühder found it abundant on the plains of Accra, but neither they nor myself ever met with it in the hills. Mr. Boyd Alexander procured specimens at Kumassi, Kintampo and Kwabia, and writes: "The species is plentiful around Kumassi, consorting together in large flocks. We found a number of nests attached to the high elephant-grass, which we cleared away the day after the fort had been relieved." Inland, at Gambaga, Capt. Giffard procured a pair. In Togoland, at the Misahöhe station, Mr. Baumann found it known to the natives as the "Airedje."

W. A. Forbes met with it constantly during his expedition up the Niger, at Egga, Lukoja and Shonga, and it is equally abundant in Camaroons, towards the coast, where specimens have been obtained by Drs. Reichenow and Lühder at the Camaroons River, by Dr. Oberholser and by Mr. Bates in the Efulen province. Du Chaillu collected specimens at Cape Lopez and along the Camma River, and Marche at Doumé in the Ogowé district; Lucan and Petit found it at Landana, Bohndorff at Manyango, and the type of the species came from Angola, where it has also been met with by Major Mechow.

Dr. Butler, in his interesting work, "Foreign Finches in Captivity," writes: "It is one of the most frequently imported species, is very cheap and, unfortunately, like most of the African Astrilds, is nervous and delicate. For those who

cannot command a high temperature and who yet wish their African Waxbills to live indoors for more than eight or nine months, there is only one plan to be adopted. In one upper corner of a spacious breeding-cage, open only in front, hang up a box half filled with hay and turn your African Waxbills into this; on warm nights you will see these little Finches crowded together on the top of the box, but in cold weather they will crouch down inside upon the hay, and so keep comfortably warm; you will find that, by adopting this plan, you can keep all the more delicate Waxbills in health throughout the winter, and at a moderate temperature.”

“Dr. Russ thus speaks of this Waxbill: ‘Always smooth and clean in plumage, sprightly and active, exceedingly docile and peaceable, singularly shy and nervous; so that whenever anything unusual appears its shrill cry of warning is uttered; although saucy, and in particular very inquisitive.’” . . .

“‘Laying three to seven round white eggs. Both sexes always sit simultaneously, keep always close together most affectionately, never separate, whisk together out of the nest at every scare, on which account the brood comes to grief nearly every time.’”

Estrilda paludicola.

Estrilda paludicola, Heugl. J. f. O. 1863, p. 166; 1868, p. 9, pl. 1, fig. 2
Gazelle R.; Sharpe, Cat. B. M. xiii. p. 397 (1890); Shelley, B.
 Afr. I. No. 406 (1896); Reichen. Vög. Afr. iii. p. 184 (1904).
Habropyga palustris, Heugl. in Peterm. Geogr. Mitth. 1869, p. 415.

Adults. Upper half of head deep grey; back and sides of neck and the mantle brown, with a slight rufous shade and very indistinct narrow dark bars; rump, upper tail-coverts and edges of basal portion of tail-feathers crimson; remainder of tail brownish black; wing, with the coverts and outer edges of the quills like the back, remainder of quill darker brown, with the inner edges whitish; under coverts buff; sides of head grey, fading into

buff on the chin, throat, breast and under tail-coverts; flanks slightly more ashy, with faint traces of narrow dark bars. "Iris and bill coral red; feet blackish" (Heuglin). Total length 4.2 inches, culmen 0.35, wing 1.8, tail 2.1, tarsus 0.55. ♂, 31. 1. 83, Lado; ♀, 3. 7. 87, Tingasi (Emin).

Heuglin's Pale Waxbill ranges from the Gazelle River into Angola.

Heuglin, who discovered the species, found it along the Gazelle River, on Req Island, in Bongo and Dembo, in February, March and April, in small flocks frequenting the high grass and reeds in marshy places. It is an active, noisy little bird, and its call-note is a low chirp. Specimens have been collected in Unyoro and Uganda by Dr. Ansorge and Dr. Stuhlmann; Mr. Jackson has procured three specimens from the expedition to the Ruwenzori Mountains.

Emin, who met with the species at Lado, and as far west as Tangasi in the Mombuttu country, informs us that it frequents the herbage along the banks of streams in parties of five or six, and has a pleasing soft song resembling that of *E. astrild*.

Cabanis refers a specimen in the Berlin Museum, obtained by Major Mechow at Malange, in Angola, November, 1879, to this species, and Mr. Pemberton obtained an example in that country at Balundu, August, 1901.

Estrilda roseicrissa.

Estrilda roseicrissa, Reichen. J. f. O. 1892, pp. 47, 218 *Bukoba*; Shelley, B. Afr. I. No. 407 (1896); Reichen. Vög. Afr. iii. p. 184 (1904).

Estrilda marwitzi, Reichen. Orn. Monatsb. 1900, p. 40 *Uhele*.

Estrilda roseicrissa marwitzi, Reichen. Vög. Afr. iii. p. 184 (1904).

Adult male. Upper half of the head, back and sides of the neck and the mantle brown, with a slight rufous shade and very indistinct narrow dark bars; rump, upper tail-coverts and edges of basal portion of tail-feathers crimson, remainder of tail brownish black; wing, with the coverts and edges of the quills like the back, remainder of quills dark brown, with whitish inner edges; under wing-coverts buff; sides of head grey, fading into buff on the

chin and throat; breast and under tail-coverts also buff, the flanks more ashy, with faint traces of dark bars; lower flanks and lower abdomen bright pink, forming a broad band. "Iris light brown; bill red; feet grey." Total length 3·8 inches, culmen 0·35, wing 1·8, tail 1·9, tarsus 0·55. ♂, 9. 8. 01. Ngonga (Pemberton).

Emin's Rosy-flanked Waxbill, including *E. marwitzi*, inhabits Central Africa between 1° S. lat. and 15° S. lat.

The type, a hen, was discovered by Emin at Bukoba on the western shore of Victoria Nyanza, and is known to me by the description, from which I cannot find a character for separating *E. marwitzi* from it. I have taken my description from a male procured by Mr. Pemberton at Ugonga, in about 14° 30' S. lat. by 21° E. long., which is the most southern and western locality known to me for the species. This specimen, which is in the Tring Museum, was, I understand, named by Dr. Reichenow *E. roseicrissa*, and as it appears to me to agree well with the description of *E. marwitzi*, I think it probable that they are the two sexes of one species. The type of *E. marwitzi* was obtained by Mr. Marwitz at Malangali in the Uhehe country, and a second specimen by Dr. Fülleborn at Kalinga in the same country.

Estrilda poliopareia.

Estrilda poliopareia, Reichen. Orn. Monatsb. 1902, p. 185 Congo.; id. Vög. Afr. iii. p. 185 (1904).

Type. "Very similar to *E. paludicola*, but differing in the red of the upper tail-coverts being paler, more scarlet red; back and wing-coverts paler and more ashy; under parts ochre shaded golden brown, paler on the throat and crop and darker golden brown on the sides of the body, abdomen and under tail-coverts; under tail-coverts washed with red; under wing-coverts pale ochre yellow washed with red. Wing 1·92 inches, tail 1·8.

"From *E. ochrogaster* it differs in the grey not ochre yellow sides of the head, the paler red of the upper tail-coverts, and the golden brown under tail-coverts" (Reichenow).

Reichenow's Pale Waxbill inhabits the Congo district.

This bird is known only by the type, in the Berlin Museum, labelled as coming from the Congo, but the collector's name is not indicated.

Estrilda ochrogaster.

Estrilda ochrogaster, Salvad. Boll. Mus. Torino, xii. No. 287, p. 4 (1897) *Tigré*; Reichen. Vög. Afr. iii. p. 185 (1904).

Sporæginthus ochrogaster, Grant, Ibis, 1904, p. 258 *L. Tsana*.

Sporæginthus margaritæ, Weld-Blundell and Lovat, Bull. B. O. C. x. p. 20 (1899) *Gelongol*; Grant, Ibis, 1900, p. 130, pl. 3, fig. 1.

Adults. Upper parts brown, with a slight rufous shade and very distinct narrow dark bars; rump, upper tail-coverts and edges of basal portion of tail-feathers crimson; remainder of tail brownish black, with a whitish outer margin; under wing-coverts buff; inner edges of quills whitish; eyebrow and sides of head pale yellowish brown; chin, throat and breast sandy buff, shaded with ashy brown on the flanks; a shade of rosy pink on the sides of the abdomen. "Iris brown; bill red; legs blackish." Total length 4.5 inches, culmen 0.35, wing 1.9, tail 2.0, tarsus 0.55. ♂, 13. 3. 99. *Gelongol* (Lovat).

Salvadori's Buff-breasted Waxbill inhabits Abyssinia.

The most southern range yet known for this species is *Gelongol*, in about 8° 30' S. lat., 37° E. long. Here Lord Lovat met with a flock of about one hundred, all apparently in very similar plumage; they were feeding on the ground and he killed five as they rose, including the type of *Sporæginthus margaritæ*; and Mr. Dagon has obtained the species at Zegi on Lake Tsana. It is, however, apparently a rare bird, having previously been known to science only by the type, which was discovered by Dr. Muzioli in the Tigré province of Northern Abyssinia.

The characters of the species are well shown in the figure in the "Ibis" for 1900, but the under tail-coverts are rather too

pale, and, as Count Salvadori has already remarked, the forehead is a little too bright.

Estrilda cærulescens.

Fringilla cærulescens, Vieill. N. Dict. xii. p. 176 (1817).

Estrilda cærulescens, Shelley, B. Afr. I. No. 413 (1896); Reichen, Vög. Afr. iii. p. 193 (1904).

Lagonosticta cærulescens, Sharpe, Cat. B. M. xiii. p. 284 (1890) *Senegambia*; Butler, Foreign Finches in Captivity, p. 118, pl. 23 (1894); Nehr Korn, Kat. Eiers. p. 125 (1899) *egg*.

Habropyga fimbriata, Reichenb. Singv. pp. 12, 49, pl. 2, figs. 14, 15; pl. 18, figs. 165, 166 (1863).

Adult. General plumage lavender grey, with the lower back and upper tail-coverts bright crimson, and the upper surface of the tail strongly washed with that colour; the grey becomes whiter on the forehead, sides of head, chin and upper throat, and is strongly shaded with black down the centre of the breast and on the abdomen; a small black streak through the eye. "Iris brown; bill black, with a tinge of red on sides of upper mandible and base of lower one; feet dusky grey." Total length 3·5 inches, culmen 0·4, wing 2·0, tail 1·6, tarsus 0·55. ♂, Senegambia (Verreaux).

The Senegal Lavender Waxbill inhabits Senegambia and ranges eastward to Gambaga.

The information from field naturalists regarding the members of this little group of Lavender Waxbills is slight, but what is known regarding *E. incana* no doubt would apply equally well to all the species, excepting, of course, the country and breeding season; the latter depending upon the climate. All Finches and most other small birds time their breeding season so that their young may benefit by the greatest supply of insect food. The present species lays white eggs, which measure 0·62 × 0·46, and probably four to six in a clutch.

Laglaise procured the species near St. Louis, at the mouth of the Senegal River; Marche and De Compiègne obtained

specimens at Bathurst; Dr. Rendall had many of these birds in cages during his residence there; Payés procured it at Casamance, and Beaudouin at Bissao. I find no reliable evidence of its having been found anywhere further along the coast, for its occurrence in Gaboon, on the authority of Gujon's collection having contained a specimen, need not be considered. It has, however, been met with in the hinterland of the Gold Coast, at Gambaga, by Capt. Giffard.

With regard to their habits, I may extract the following notes from the observations made by Dr. Russ on these birds in confinement: "Incessantly restless and brisk, graceful and ornamental, throughout the whole day in perpetual motion. Their soft, sibilant call-note and louder flute-like cries sound pleasing and melodious." He also remarks that they are liable to die from the least chill, and adds: "Duration of the entire brood up to the flight of the young, barely four weeks."

Estrilda perreini.

- Fringilla perreini*, Vieill. N. Diet. Hist. Nat. xii. p. 179 (1817) *Congo*.
Estrilda perreini, Shelley, B. Afr. I. No. 415 (1896); Reichen. Vög. Afr. iii. p. 193 (1904).
Lagonosticta perreini, Sharpe, Cat. B. M. xiii. p. 285 (1890) *Landana*.
Estrela melanogastra, Swains. B. W. Afr. i. p. 194 (1837).

Subspecies a.

- Estrilda thomensis*, Sousa, Jorn. Lisb. 1888, p. 155 *St. Thomas Isl.*;
 Shelley, B. Afr. I. No. 416 (1896); Reichen. Vög. Afr. iii. p. 193 (1904).
Lagonosticta thomensis, Bocage, Jorn. Lisb. 1904, p. 81 *St. Thomas Isl.*

Subspecies b.

- Habropyga polioogastra*, Reichen. J. f. O. 1886, p. 121 *Inhambani*.
Estrilda polioogastra, Shelley, B. Afr. I. No. 418 (1896); id. *Ibis*, 1891, pp. 165, 169 *Karunguisi*.

Subspecies c.

Estrilda incana, Sundev. Öfv. Vet. Akad. Förh. Stockh. 1850, p. 98, Natal; Shelley, B. Afr. I. No. 417 (1896); Woodward, Ibis, 1897, p. 411 Zulu; Reichen. Vög. Afr. iii. p. 192 (1904 pt.).
Lagonosticta incana, Sharpe, Cat. B. M. xiii. p. 284 (1890).
Habropyga natalensis, Cab. Mus. Hein. i. p. 170 (1851).

Adults. Crown, mantle, scapulars, wing-coverts and edges of the quills lavender grey, remainder of quills dusky brown; lower back and upper tail-coverts crimson, tail entirely dusky black; sides of head and the under parts paler grey than the mantle; band in front of the eyes, eyelids and chin jet black; abdomen gradually shading into the dusky black of the thighs and under tail-coverts; occasionally there is some crimson on the flanks. Bill glossy greyish black, generally with a paler mark on the upper mandible; tarsi and feet black. Total length 4.15 inches, culmen 0.35, wing 1.9, tail 1.8, tarsus 0.65. ♂ and ♀, Landana (Lucan and Petit).

E. thomensis. "Similar to the above, but differs in its more vinous shade and in having the flanks carmine red like the rump" (Sousa).

E. poliogastra. Differs from *E. perreini* in having the red of the lower back and upper tail-coverts a shade darker and duller; abdomen and under tail-coverts slightly paler, the dusky black being confined to the vent and under tail-coverts. Wing 2.0, tail 2.0. Karunguisi (A. Sharpe).

E. incana. Differs from *E. perreini* in having the abdomen and under tail-coverts paler grey, with a dusky shade confined to the vent and under tail-coverts. "Iris red; bill grey; feet black." Wing 1.9, tail 1.9. ♂ and ♀, Durban (T. L. Ayres).

The Black-tailed Lavender Waxbills range from St. Thomas Island to Loango and the Congo, through Nyasaland to Inhambane, and occur in Natal and Zululand.

These Waxbills I divide into four subspecies. The St. Thomas Lavender Waxbill is represented by the type which is in the Coimbra Museum, nominally from the Island of St. Thomas, and supposed to have been obtained there in 1885 by Moller; but no mention is made of it in the list of his collection published in "L. V. Instituto," No. 11 (1887); and Mr. Almada Negreiros obtained a second specimen at Guadalupe. It is known to me by the description only, and I cannot help doubting its being a good species, as no other

example of it has ever been recorded, and it is not impossible for a specimen to have strayed from the mainland to that island.

Perrein's Lavender Waxbill is apparently a rare local form. In Loango, specimens have been collected by Falkenstein at Chinchonxo, and at Landana Lucan and Petit obtained several examples, of which three are in the British Museum and are very constant in their colouring, with the exception of the flanks in one of the specimens being mottled with crimson. The type was procured by Perrein at the Congo.

The Mozambique Lavender Waxbill ranges from Inhambane to Lake Tanganyika. The type was obtained by Peters at Inhambane on the Mozambique coast, just south of the Tropic of Capricorn. It was next procured by General Manning 15 degrees due north, in the Mambwe country, between the Lakes Nyasa and Tanganyika, and the only other specimen known to me was found by Sir Alfred Sharpe at the Kalongwesi River, which runs into Lake Moero.

The first specimen from British Central Africa was not in sufficiently good condition for me to distinguish it from Natal birds. This form differs from *E. perreini* and *E. incana* in the red of the lower back and upper tail-coverts being slightly duller and darker, and is intermediate between the two in the greyish black colouring of the abdomen and under tail-coverts. Dr. Reichenow, in his great work "Die Vögel Afrikas," includes this form in *E. incana* and gives specific rank to both *E. thomensis* and *E. perreini*.

As with, for instance, *E. astrild*, it is by no means an easy matter to treat the closely allied forms in a popular manner, they not being all equally constant, nor all equally restricted to distinct districts, yet they should not be ignored. The use of a third name for their recognition is simple. The ornithologist, having named his collection, may by comparing one

of his specimens with a type or description, find it belongs to a race already distinguished, he has then only to add on the label a third name of the special form to which it belongs, and can afterwards judge for himself as to the real value of that name.

These four forms appear to me to be scarcely recognisable.

The Natal Lavender Waxbill inhabits Natal and Zululand. The type was discovered by Wahlberg in Natal. The subspecies is not yet known from beyond the limits of Natal and Zululand, but is represented in Mozambique and Nyasaland by an extremely nearly allied form, *E. poliogastra* (Reichen.).

Stark writes: "I have on several occasions found the nest of this species near Pinetown in Natal, built both in bushes and low trees. It is domed, loosely constructed of dry grass, and lined with feathers. The eggs, from four to six in a clutch, are laid in December and March, for these birds are double brooded. They are pure white, and average 0.54×0.42 . The Grey Waxbill is nearly always in pairs, is very tame, and feeds on the ground on grass-seeds and small insects. Its note is a soft chirrup."

I found a nest with fresh eggs on March 8, close to Durban. It was placed in a creeper overhanging the footpath, and was easily reached from the ground. The Messrs. Woodward preserved a specimen at Eschowe in Zululand, and write: "We found the nest and eggs of *Estrelida incana*, it was built in a small tree in the open land, and was very loosely made of grass, lined with fowl's feathers. It contained six very small white eggs."

Estrilda nigricollis.

Lagonosticta nigricollis, Heugl. J. f. O. 1863, p. 273 *Djur*; Sharpe, Cat. B. M. xiii. p. 286 (1890); Shelley, B. Afr. I. No. 435 (1896); Reichen. J. f. O. 1902, p. 37 *Togo*; Reichen. Vög. Afr. iii. p. 191 (1904).

Adults. General plumage leaden grey, rather darker above than beneath; rump, upper tail-coverts and outer webs of the tail-feathers crimson; remainder of the tail black; wings dark brown, strongly washed with grey above, and beneath dusky brown, with pale inner edges to the quills, and fading into white on the inner half of the coverts; a narrow margin to the front of the forehead, sides of head, chin and upper half of the throat jet black; remainder of the throat, breast and thighs rather paler grey than the mantle, and with an obsolete rosy tinge; under tail-coverts dusky black; sides of breast with some small white spots, generally in pairs on the feathers to which they belong. "Iris brown; eyelids and bill pale greyish blue, the latter darker on the culmen and apex; legs dark grey." Total length 4·4 inches, culmen 0·45, wing 1·9, tail 1·8, tarsus 0·5. ♂, 28. 8. 82. Lokoja (Forbes).

Immature. Above pale brown, with a slight ashy shade on the crown and mantle, the latter with obsolete bars; upper tail-coverts and tail, with crimson of a duller shade than in the adults; no black on the head or neck; sides of head ashy brown scarcely paler than the crown; breast and under tail-coverts buffy brown; a few white spots on the sides of the chest. ♀, 24. 2. 01. Binduri (Alexander).

The Grey Black-faced Waxbill ranges from the Gold Coast into the White Nile district.

In its most western known range Capt. Giffard procured two males in January and August, 1898, at Gambaga, and Mr. Boyd Alexander writes: "Rare, found at Gambaga and Binduri." It has also been obtained by Mr. Zech at Kratchi on the Volta River. Its occurrence in West Africa was first made known in 1883, by W. A. Forbes procuring the species at Lokoja in the hills, amongst small bushy trees.

The type was discovered by Heuglin, at Djur in the Gazelle River district, where he found the species in pairs and family parties of four or five, frequenting the thick, high grass

in the open country of Wau, Djur and Bongo, apparently resident, but rarely met with in summer. In their habits they were shy, and on the least alarm quickly disappeared in the standing corn. In May the song of the male was loud and clear.

Estrilda vinacea. (Pl. 32. fig. 2.)

Estrilda vinacea, Hartl. Orn. W. Afr. p. 143 (1857) *Casamanse*; Reichen, Vög. Afr. iii. p. 191 (1904).

Lagonosticta vinacea, Sharpe, Cat. B. M. xiii. p. 286 (1890); Shelley, B. Afr. I. No. 433 (1860).

Adults. Forehead and crown leaden grey, with a few feathers next to the nostrils black, like the entire sides of the head, chin, and upper half of the throat; remainder of the plumage mostly vinous pink, darker and inclining to crimson on the upper tail-coverts and outer edges of the tail-feathers; remainder of tail dusky black; primary coverts, primaries, and inner webs of the secondaries dark brown; lining of wing more dusky, and whitish on the inner edges of the quills and the coverts; lower neck and breast vinous pink, tinted with the grey of the basal portion of the feathers, and shading into dusky black on the centre of the abdomen, the thighs and under tail-coverts; sides of breast, with minute white spots. Iris brown; bill and feet grey. Total length 3.9 inches, culmen 0.4, wing 1.85, tail 1.6, tarsus 0.7. ♂, 17. 11. 00. Cage-bird (Hopkinson).

Immature. Forehead and crown ashy brown; back, wings and tail as in the adult; sides of head ashy brown, shading into isabelline on the chin and upper half of the throat; remainder of the under parts tinted with isabelline, and the centre of the abdomen, thighs and under tail-coverts more rosy. ♂ and ♀, Senegal.

The Vinous Black-faced Waxbill inhabits Senegambia.

The species has been recorded only from Bissao (Leunier) and from Casamanse (Verreaux), and it is represented in the British Museum by three males and a female, all of which were cage-birds. I have figured the species in the hope that it may draw the attention of field naturalists to this very pretty and interesting species, of which we know so little. The small white spots on the sides of the breast is a very unusual

character to find in members of the genus *Estrilda*, but is also present in *E. nigricollis*.

Estrilda larvata.

Amadina larvata, Rüpp. N. Wirb. Vög. p. 97, pl. 36, fig. 1 (1835)
Semien.

Lagonosticta larvata, Sharpe, Cat. B. M. xiii. p. 286 (1890); Shelley,
B. Afr. I. No. 434 (1896); Reichen. Vög. Afr. iii. p. 191 (1904).

Adult. Upper parts slaty grey, washed with vinous red on the hind neck; lower back, upper tail-coverts and edges to the tail-feathers crimson; remainder of tail black; wings browner than the back, with the under-coverts and inner edges of the quills ashy white; entire sides of head, the chin and throat jet black; front and sides of the chest vinous red, the latter part with small white spots; centre of breast, abdomen and under tail-coverts black. "Iris brown; bill and legs dark slate colour." Total length 4.5 inches, culmen 0.45, wing 2.1, tail 1.7, tarsus 0.6. ♂, 13. 3. 99. Golongol (Lovat).

Rüppell's Black-throated Waxbill inhabits North-east Africa.

In its most western range, the species has been procured by Antinori in the Djur country of the Upper White Nile, and in Kordofan. Heuglin met with it in Western Abyssinia in April and June, frequenting beds of bamboos, at elevations of 3,000 to 5,000 feet; it was shy, active, and silent.

The type was discovered by Rüppell in Semien, which is the most northern range known for the species.

Through the kindness of Col. E. A. Butler I have seen a good specimen of this rare Weaver from Galabat, where it was procured by his son on March 13, 1899. In Southern Abyssinia, a year later, Lord Lovat shot a specimen at Golongol in about 9° N. lat. by 36° E. long. The egg has been described by Mr. Kuschel as white and measuring 0.56 × 0.43.

Estrilda kandti.

Estrilda kandti, Reichen. Orn. Monatsb. 1902, p. 184 *Kivu Lake*; id. Vög. Afr. iii. p. 188 (1904).

Type. Upper half of head, wings and tail black; neck, back and scapulars sepia brown; upper tail-coverts red; under wing-coverts whitish; cheeks white; entire under parts pale sepia brown, with the abdomen paler and more isabelline; bill black; feet blackish brown. Total length 2·8 inches, culmen 0·3, wing 1·6, tail 0·95, tarsus 0·55. ♂ (?) Lake Kivu (Kandt).

Female (?). Head, upper part of body and the wings sepia brown; upper tail-coverts red; entire under parts greyish brown. Bill dusky horn brown. Lake Kivu (Kandt).

Kandt's Black-crowned Waxbill inhabits Central Africa between the Albert Edward Nyanza and Lake Tanganyika.

The species was discovered by Dr. Kandt at Lake Kivu to the north of Lake Tanganyika. The only two specimens known were not sexed, and probably represent the adult and immature plumages.

Estrilda nonnula.

Astrilda nonnula, Hartl. J. f. O. 1883, p. 435 *Kudurma*; id. Zool. Jahrb. 1887, p. 321, pl. 13.

Estrilda nonnula, Sharpe, Cat. B. M. xiii. p. 400 (1890); Shelley, B. Afr. I. No. 409 (1896); Reichen. Vög. Afr. iii. p. 188 (1904).

Hypargus tenerrima, Reichen. J. f. O. 1887, pp. 213, 307 *Stanley Falls*.

Adult male. Upper part of head black; hinder neck, mantle and inner half of the wing-coverts with alternate bars of black and grey; lower back and upper tail-coverts glossy crimson-shaded scarlet; tail entirely black; remainder of wings brownish black, with grey bars on the secondaries, and the under surface, with the axillaries and inner half of the coverts white, and inner edges of quills more ashy white; cheeks, ear-coverts and under parts white, shading into grey on the sides of the lower throat, and slightly tinted with grey on the sides of the body, vent and under tail-coverts; flanks mostly rosy crimson; outside of thighs blackish. "Iris brown; bill black, with a patch on each side of the culmen and the base of the lower mandible

red; feet black." Total length 4.4 inches, culmen 0.35, wing 1.9, tail 1.9, tarsus 0.6. ♂, 27. 10. 85. Foda (Emin).

Adult female. Differs only in having a slightly greyer shade on the under parts. Wing 1.9. ♀, Yambuya (Jameson).

Immature. Differs in the bill being entirely black; back of neck and the mantle slaty brown, with scarcely any trace of bars; flanks tinted with brown, and with no red. "Iris brown; bill dusky black; feet black." ♀, 27. 10. 85. Foda (Emin).

Hartlaub's Black-crowned Waxbill ranges over Equatorial Africa from Camaroons into the Upper Congo, and eastward to Nandi on the Equator in about 35° 30' E. long.

In Camaroons both this species and its near ally, *E. atricapilla*, occur, the latter towards the coast, and is probably entirely replaced inland by this more highland form, which has been met with by Dr. Preuss at Buea and by Mr. Zenker at Jaunde. Mr. Sjöstedt found it at Bibundi only, but here it was abundant and in large flocks, frequenting the grasslands and perching on the scattered small trees and bushes, or seeking seeds on the ground.

In the Upper Congo district Jameson procured three specimens at Yambuya, and Bohndorff the type of *Habropyga tenerima*, Reichen., at Stanley Falls. Between this and the Victoria Nyanza it has been met with by Mr. Scott Elliot at the Albert Edward Nyanza, and by Emin at Bokober and as far south as Karagwe. The most eastern range yet known for the species is Nandi, where Mr. Jackson collected five examples in the forest, at an elevation of 6,000 to 6,500 feet.

Emin found the species in the Unyoro, Uganda, and Mombuttu countries, and discovered the type at Kudurma. According to his notes (J. f. O. 1889, pp. 46-49), the species selects wooded localities interspersed with glades in preference to the grassy plains or the rank vegetation of the river-banks, and is mostly seen in family parties of six or seven, flitting from bush to bush, or creeping through the foliage, descending

at times to the ground to feed on seeds, ants and other small insects. They were tame and abundant throughout the year from Uganda to the Mombuttu country, at an elevation of from 3,000 to 4,000 feet. The breeding season is usually about April, but in October, 1877, a whole colony began nesting in the trees close to his house. The nest, of an oval form, with a small round hole at the side, is strongly constructed of fresh grass, and concealed among the leafy boughs, with the inside deep and lined with vegetable down and feathers. The eggs were pure white and varied from four to six in number. Besides these breeding nests they construct others, apparently for the males to roost in, and he observed the same habit in *Philetairus arnaudi*. They took eleven days to hatch their eggs, and the young remained eight or nine days in the nest. In the centre of the colony he found a pair of *Spermestes cucullatus* nesting. Dr. Stuhlmann has procured specimens in Uganda, and Dr. Ansorge a fine series from Unyoro and Kampala, proving that *E. nonnula*, Hartl., was described from an immature bird and *Habropygæ tenerrima*, Reichen., from the adult.

Estrilda elizæ.

Estrilda elizæ, Alexander, Ibis, 1903, p. 354 *Fernando Po*.

Type. Very similar to *E. nonnula*, differing only in having the entire under parts tinted with grey and the under tail-coverts pale leaden grey. Total length 3·8 inches, culmen 0·4, wing 1·9, tail 1·7, tarsus 0·65. ♂, 14. 12. 02. Moka (Alexander).

Immature. Head, neck and mantle uniform greyish brown; entire breast and under tail-coverts washed with pale brown. Bill black, tarsi and feet blackish.

The Fernando Po Black-crowned Waxbill is confined to the island of Fernando Po.

I look upon this species as a local, island, representative

of the very closely allied, continental, *E. nonnula*. The fine series collected by Mr. Boyd Alexander show that the difference between it and *E. nonnula*, although extremely slight, are constant. The species was discovered on the southern side of the island, in the Moka Valley, frequenting the long grass, and was named in honour of Lady Eliza Alexander.

Estrilda atricapilla.

Estrelida atricapilla, J. and E. Verr. Rev. et Mag. Zool. 1851, p. 421
Gaboon; Sharpe, Cat. B. M. xiii. p. 399 (1890); Shelley, B. Afr. I.
No. 408 (1896); Reichen. Vög. Afr. iii. p. 188 (1904).

Adult. Upper part of the head black; back of neck, mantle and inner half of the wing-coverts with alternate narrow bars of grey and black; lower back and upper tail-coverts glossy crimson-shaded scarlet; tail entirely black; remainder of the wing brownish black, the inner secondaries with grey bars, under surface, with the axillaries and inner half of the coverts white, and the inner edges of the quills more ashy white; cheeks, ear-coverts, chin and upper throat greyish white, shading into leaden grey on the sides of the neck, lower throat and chest; abdomen, thighs and under tail-coverts dusky black; flanks glossy crimson-shaded scarlet. Iris brown; bill black, with the base of the lower mandible scarlet; tarsi and feet blackish. Total length 4 inches, culmen 0.35, wing 1.75, tail 1.75, tarsus 0.5. Gaboon (Ansell).

Immature. Differs in having the under parts more ashy grey, with obsolete narrow blackish bars, shading into brownish black on the under tail-coverts; little or no red on the sides of the body. Wing 1.8. ♀, Gaboon (Verreaux).

Verreaux's Black-crowned Waxbill inhabits the lowlands of Camaroons and Gaboon.

In the British Museum there is one specimen from Camaroons and five from Gaboon. In Camaroons, towards the coast, the species is recorded as abundant by Dr. Reichenow, and is apparently replaced in the highlands by the white-breasted *E. nonnula*. Gaboon appears to be the metropolis of the present species, from whence Verreaux procured the type,

and my late friend Du Chaillu, whose collection was not properly valued by the English nation, obtained a fine series at Cape Lopez as well as at the Camma and Muni Rivers. Marche and De Compiègne found it in the Ogowé district.

Estrilda erythronota.

Fringilla erythronotos, Vieill. N. Dict. xii. p. 182 (1817) *Caffraria*.

Estrilda erythronota, Gray and Mitch. Gen. B. ii. p. 368, pl. 90, fig. 1 (1849); Sharpe, Cat. B. M. xiii. p. 397 (1890); Shelley, B. Afr. I. No. 410 (1896); Reichen. Vög. Afr. iii. p. 189 (1904) pt. *S. Afr.*

Estrelida lipiniana, Smith, Rep. Exped. Centr. Afr. App. p. 49 (1836) *Kurrichaine*.

Adults. Upper parts ashy grey, with a slight crimson shade on the mantle; lower back and upper tail-coverts crimson; entire tail black; hinder half of crown, back of neck, mantle and lesser wing-coverts with narrow blackish bars; remainder of wing-coverts and the inner secondaries of alternate wider bars of brownish-shaded black and white; outer quills dark brown, with indistinct bars on the basal half of the outer webs; inner edges of quills and the under wing-coverts whitish; eyebrow, sides of head and upper throat jet black; remainder of throat crimson-shaded grey, with narrow dusky bars; front and sides of breast crimson; centre of breast, abdomen, thighs and under tail-coverts black. "Iris deep crimson; bill dark slate colour; legs black" (Oates). Total length 4.3 inches, culmen 0.4, wing 2.1, tail 2.3, tarsus 0.55. ♂, 11. 11. 76, and ♀, 14. 7. 66. Damaraland (Andersson).

Vieillot's Black-faced Waxbill ranges over South Africa generally to the north of 28° S. lat.

The species appears to be most abundant in German South-west Africa, for according to Andersson's and Mr. Fleck's notes, it occurs in large flocks in Damaraland, Great Namaqualand, the Lake Ngami district and the Kalahari. In Bechuanaland Sir Andrew Smith found his *E. lipiniana* inhabiting the country to the north and east of Kurrichaine, and this is the most southern range positively known for the

species. Mr. Haagner records it as common at Modderfontein, within ten miles of Johannesburg.

With regard to the habits, Stark writes: "Very like those of the common *E. astrild*. In the Transvaal during winter these pretty little birds feed on the ground in small flocks, generally near bushes, to which they fly if disturbed. Their food consists almost entirely of grass-seeds. They have a low, gentle, twittering note, frequently repeated when they are searching for food and also as they take flight. Towards spring the flocks break up and they remain in pairs until the following autumn."

Mr. T. Ayres met with the species along the banks of the Limpopo, but it was by no means plentiful there. Dr. Bradshaw found it to the north of that river, and Frank Oates at Tati in the Matabele country; but it has not yet been recorded from the Zambesi nor from British Central Africa.

***Estrilda delamerei*.**

Estrilda delamerei, Sharpe, Bull. B. O. C. x. p. 102 (1900) *Athi R.*

Type. Similar to *E. erythronota*, with the same amount of black on the throat, breast, thighs and under tail-coverts; but differs in being slightly paler, a more distinct pale marginal band behind the ear-coverts, and the bars on the wings more sharply defined clear black and white. In the two latter characters it most nearly resembles *E. charmosyna*. "Iris red; bill and legs black." Total length 4·7 inches, culmen 0·35, wing 2·1, tail 2·3, tarsus 0·6. 8. 11. 99. *Athi R.* (Delamere).

Delamere's Black-faced Waxbill inhabits Ugogo and the Victoria Nyanza district.

Emin has procured specimens at Matangisi and Irindi in Ugogo, and at Bussissi, which is situated on the southern shore of the Victoria Nyanza; Fischer met with it at Ngaruka, Mr. Neumann at Mori Bay in Kavirondo, and Dr.

Ansorge at Usoga. Lord Delamere discovered the type at the Athi River, and two specimens were collected for Mr. Jackson at Ankole during the expedition to the Ruwenzori Mountains, which are the only examples recorded from north of the Equator. The known range of this species and its nearest ally, *E. erythronota*, is separated by over 700 miles.

Estrilda charmosyna.

Habropyga charmosyna, Reichen. Orn. Centralbl. 1881, p. 78; id. J. f. O. 1881, p. 333 *Berbera*.

Estrilda charmosyna, Sharpe, Cat. B. M. xiii. p. 399 (1890); Shelley, B. Afr. I. No. 411 (1896); Reichen. Vög. Afr. iii. p. 190 (1904) pt. *Somaliland*.

Estrilda nigrimentum, Salvad. Ann. Mus. Genov. 1888, p. 281 *Shoa*; Sharpe, Cat. B. M. xiii. p. 399 (1890); Shelley, B. Afr. I. No. 412 (1896); Reichen. Vög. Afr. iii. p. 190 (1904).

Adult. Similar to *E. erythronota* in style of plumage, but differing in the crown, mantle, neck, throat and under parts being paler and more pink; black of under parts restricted to a few feathers on the chin; centre of breast, abdomen, thighs and under tail-coverts pinkish buff; a rather strongly marked white marginal band behind the ear-coverts. "Iris brown; bill and legs black." Total length 5 inches, culmen 0.35, wing 2.2, tail 2.5, tarsus 0.55. 14. 11. 97, Hargeisa (Hawker).

The Somali Black-faced Waxbill inhabits Somaliland, Southern Abyssinia and Shoa.

The type was discovered by Abden Gindi at Berbera on the Somali coast. This specimen is not in such full plumage as the type of *E. nigrimentum*, which came from Shoa, but I see no reason to suppose them to be separable as local forms. The species has been procured by Dr. Donaldson Smith at Bussarler in Western Somaliland, by Mr. Hawker at Hargeisa and Jifa Medir, by Erlanger in Arussi Gallaland, by Mr. Harrison at Tadechamulka, by Mr. Pease at Owaramulka, and the type of *E. nigrimentum* by Dr. Ragazzi at Farré in Shoa.

This is all the information I can find regarding the species, but no doubt in its habits it resembles *E. erythronota* as closely as it does in its plumage.

Genus XII. COCCOPYGIA.

Very similar to *Estrilda*, but distinguished by the bill being broader; upper mandible blackish, lower one, in adults, pale; culmen broader and flatter. Wing rounded, longer than tail; primaries 2 shorter than 6. Tail rounded and extending beyond the outstretched feet, graduation less than length of culmen. Entire lower back and upper tail-coverts red, no other red on the plumage.

Type.

Coccopygia, Reichenb. *Singv.* p. 23 (1861) *C. dufresnei*.

The genus is confined to Tropical and South Africa and comprises four species.

KEY TO THE SPECIES.

- a.* Abdomen and under tail-coverts pale isabelline buff.
*a*¹. Sides of head and the upper throat black . . . *dufresnei*, ♂, ad. 2 2 2
*b*¹. Sides of head grey, upper throat white . . . *dufresnei*, ♀. 2 2 2
b. Centre of breast and abdomen yellow.
*c*¹. Sides of head and the upper throat black . . . *bocagei*, ♂. 2 2 6
*d*¹. Sides of head grey, upper throat white . . . *bocagei*, ♀. 2 2 6
*a*². Slightly paler; breast more sulphur yellow . . . *quartinia*, ♂, ♀. 2 2 6
*b*². Slightly darker; breast more rufous buff . . . *kilimensis* ♂, ♀. 2 2 6

Coccopygia dufresnei.

Fringilla dufresni, Vieill. *N. Dict.* xii. p. 181 (1817).

Coccopygia dufresnii, Sharpe, *Cat. B. M.* xiii. p. 305 (1890); Shelley, *B. Afr. I.* No. 391 (1896).

Estrilda dufresnii, Shortridge, *Ibis*, 1904, p. 177 *Pondoland*.

Neisna dufresnei, Reichen. *Vög. Afr.* iii. p. 205 (1904).

Fringilla erythronotos, Vieill. *N. Dict.* xii. p. 242 (1817).

Fringilla melanotis, Temm. *Pl. Col.* iii. pl. 221, fig. 1 (1823).

Estrilda melanogenys, Sundev. *Œfv. K. Vet. Ak. Förh.* Stockh. 1850, p. 97 *Natal*.

Estrela neisna, Licht. *Nomencl.* p. 48 (1854) *nom. nud.*

Adult male. Forehead, crown and back of neck leaden grey; mantle olive tinted yellow, slightly mottled with scarlet, and narrow, nearly obsolete, dusky bars to the feathers; lower back and upper tail-coverts scarlet; wing dusky brown, the feathers of the inner half edged with the same colour as the mantle, the edges of the other feathers narrower and inclining to brownish buff; inner lining of the wing, with the axillaries and coverts isabelline; tail blackish, inclining to dusky on the outer feathers, which have their end quarter whitish; sides of head below the eye, ear-coverts, chin and upper throat black, surrounded towards the throat with white, shading into grey on the sides of the neck, the crop and flanks; remainder of the breast and the under tail-coverts isabelline buff. "Iris bright red; bill, upper mandible black, lower one bright crimson; tarsi and feet dusky black" (T. Ayres). Total length 3.9 inches, culmen 0.3, wing 1.8, tail 1.5, tarsus 0.4. ♂, 10. 78. Durban (Gordge).

Adult female. Differs from the last in having no black on the head, the sides of the head being grey like the crown and fading into white on the chin, upper and middle throat. Total length 3.7 inches, wing 1.9, tail 1.5. ♀, 16. 7. 74. Botha's Hill (T. L. Ayres).

Dufresne's Waxbill is confined to South Africa, where it ranges from Cape Colony to the Zambesi.

Its distribution is, as Stark observes, Eastern South Africa, occurring as far west as the George District, and at Heidelberg and Swellendam in Western Cape Colony, becoming more abundant to the east of Port Elizabeth and Grahamstown. In Natal and the Transvaal it is a resident. I cannot trace its range further north than the Zambesi, where Serpo Pinto procured the female specimen described by Prof. Bocage in his "Ornithologie d'Angola." The species was included in that work solely upon the authority of Brown's "Nouvelles illustrations de Zoologie" (1776).

Layard wrote: "Heidelberg, Swellendam, and the Kugela are the only places whence we have received this pretty species in the western province. Mr. Atmore says that it is common at George, wherever there is cultivation; it is restless in its habits and migratory, appearing in autumn. Mr. Rickard records it from Uitenhage and East London, and it

is also found near Grahamstown." It has not been recorded from German South-west Africa, but as Stark writes: "In Natal this pretty little species is, when not breeding, usually met with in small parties of ten or twelve, feeding on the ground on grass-seeds. When searching for food they keep close together, and constantly utter a sharp, chirping call-note. If disturbed they rise simultaneously with a prolonged 'chirrup' and fly for a short distance, to settle again on the ground. This Waxbill breeds in Natal not uncommonly, but not, so far as I have observed, near the coast. Not far from Howick, at a height of about 3,000 feet, I have met with their nests in some numbers. Unlike many of the Waxbills, they build in tall bushes and young trees, at a height of from six to ten feet. The nests are rough-looking, oval structures, with an entrance hole on one side, constructed of fine dry grass; the flowering ends of the grass being woven together, the stiff stalks are left projecting in all directions. The interior is lined with grass-tops, down and feathers. The eggs are very small, pure white in colour, and four to five in number. When first hatched the young are fed on small caterpillars."

In the British Museum there are six specimens procured by Andersson at the Knysna in the first four months of the year, so I should not be justified in calling it an autumn migrant in Cape Colony as Stark does; there are others from Grahamstown, Durban, Pinetown, Botha's Hill, Maritzburg, Rustenburg, and Lydenburg. In the Rustenburg district of the Transvaal Mr. Ayres shot a male with the black throat and ear-coverts on June 12, and met with one or two small flights in which most were in poor plumage. Dr. Rendall obtained one in the Barberton district at the end of April. With the exception of Serpo Pinto's specimen from the Zambesi, the species is not known to me from north of the Limpopo.

Coccopygia bocagei. (Plate 33, fig. 1.)

Coccopygia bocagei, Shelley, Bull. B. O. C. xiii. p. 56 (1903) *Huilla*,
Biballa.

Neisna bocagei, Reichen. Vög. Afr. iii. p. 206 (1904).

Type, adult male. Forehead, crown and back of neck deep leaden grey; mantle, wing-coverts and secondaries olive, with numerous well-marked, narrow dusky brown bars; rump and under tail-coverts crimson-shaded scarlet; primaries dark brown with narrow olive buff outer edges; tail-feathers black, with the outer webs of the side ones pale dusky brown, narrowly barred with blackish brown on the end half; lores, cheeks, ear-coverts, chin, and upper half of the throat jet black; front half of neck white, shading into pale ashy grey on the crop and front of the chest, and then into olive yellow down the flanks, and these coloured feathers have narrow dusky bars; centre of chest and the abdomen lemon yellow; under tail-coverts slightly paler. Iris red; upper mandible black, lower one red; tarsi and feet blackish. Total length 3·2 inches, culmen 0·35, wing 1·8, tail 1·3, tarsus 0·5. ♂, Huilla (Anchieta).

Adult female. Differs in having the sides of the head grey like the crown, and the entire throat white. Wing 1·8. *Biballa* (Anchieta).

Bocage's Waxbill inhabits Mossamedes.

The types, a male and female, were discovered by Anchieta at Huilla and Biballa, and through the kindness of my friend, Prof. Barbaza du Bocage, I have been enabled to describe and figure these specimens.

Coccopygia quartinea.

Estrela quartinia, Bp. Consp. i. p. 461 (1850) *Abyssinia*.

Coccopygia quartinia, Sharpe, Cat. B. M. xiii. p. 307 (1890); Shelley, B. Afr. I. No. 393 (1896).

Neisna quartinia, Reichen. Vög. Afr. iii. p. 204 (1904).

Fringilla (*Estrela*) *flaviventris*, Heugl. Syst. Uebers. p. 40 (1856 *nom. nud.*) *Abyssinia*.

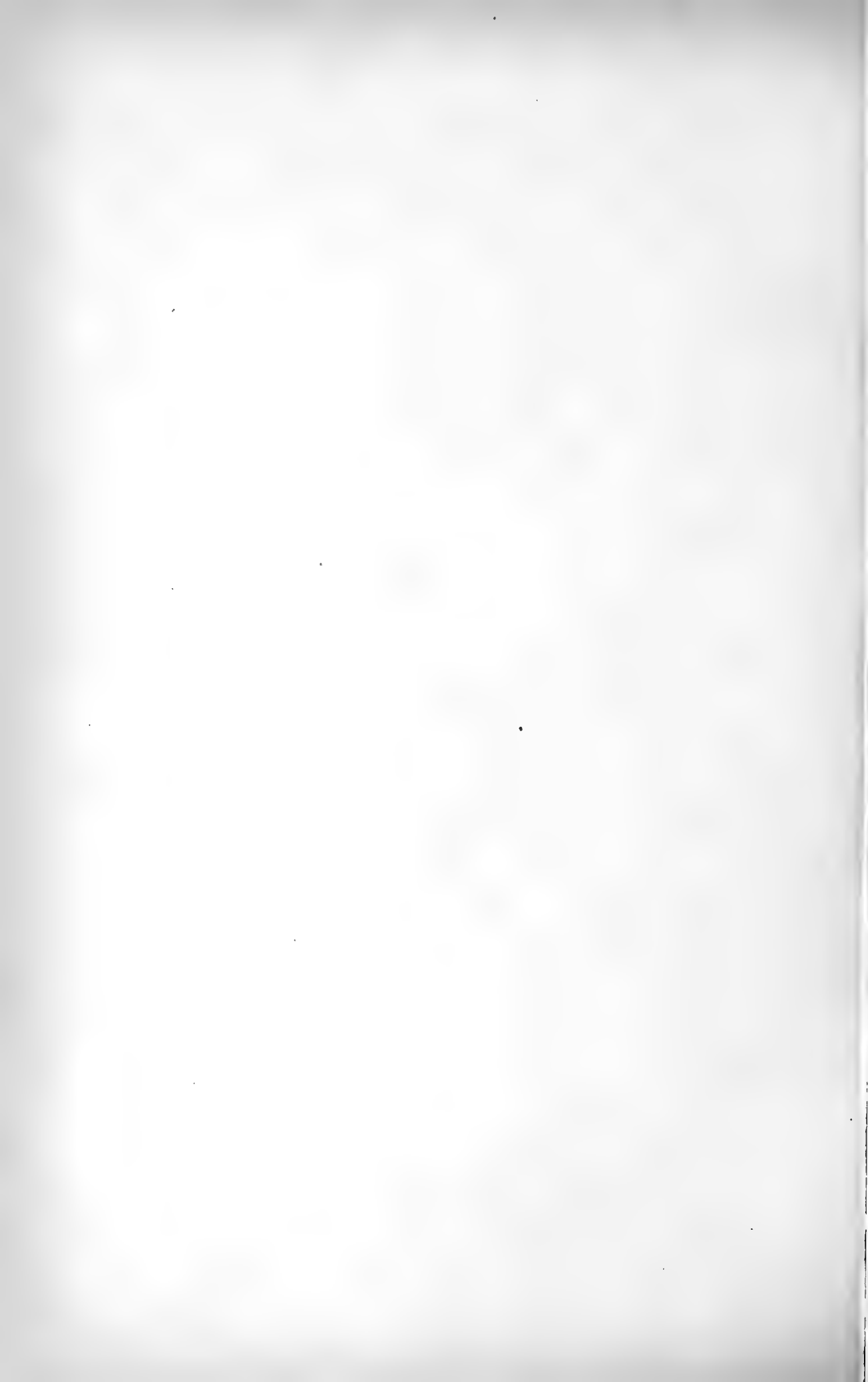
Estrela ernesti II, Heugl. J. f. O. 1862, p. 29 *Keren*.

? *Estrilda savatieri*, Rochbrune, Faun. Sénéq. Ois. p. 252, pl. 21, fig. 1 (1884) *Senegambia*.

Coccopygia savatieri (*laps. cal.*) Shelley, B. Afr. I. No. 394 (1896).



1. *Coccopygia bocagei*. ♂ & ♀.
2. *Lagonosticta cinereovinacea*.



Adults. Similar to the female of *C. dufresnei*, from which it differs in having the centre of the breast and abdomen bright sulphur yellow and the under tail-coverts of a slightly more sandy shade. Iris red; upper mandible black, lower one red; feet black. Total length 4 inches, culmen 0.35, wing 1.9, tail 1.6, tarsus, 0.55. ♂, 4. 1. 99, Chelungo (Lovat), and ♀, 3. 1. 03, Adis Ababa (Pease).

The Quartinea Waxbills inhabits North-east Africa.

The possibility of this species having been met with in Senegambia rests on the very doubtful authority of M. Rochebrune, and upon the probability of his *Estrellda savatieri* being founded on a specimen of this Waxbill. Heuglin's specimens came from Anseba, Tigré, Semien, Gonda and Wologalla, and finding that the sexes were alike in plumage he gave them the name *Estrellda ernesti*, under the impression that the sexes of *C. quartinia* (Bp.) differed in the same manner as in *C. dufresnei* (Vieill.). He found the species, paired or in flocks, generally distributed over Northern Abyssinia to nearly 17° N. lat., and breeding there in January, the nests containing from five to six white eggs.

In Shoa Dr. Ragazzi found them frequenting the neighbourhood of dwellings. Two of his specimens were immature, and these are described by Count Salvadori as differing from the adults in their smaller size; bill shorter and entirely black; red on rump more confined and inclining to orange; tail shorter. He also remarks that the specimens show some variation both in size and colouring; in the females the red of the lower back is less extended and duller, and the yellow of the abdomen and under tail-coverts less bright. To the eastward Lord Lovat found the species very abundant at Chelunco in January, and Mr. Pease met with it on the hill-sides near Adis Ababa. It has also been recorded from Harar and Arussi Galla (Erlanger).

Coccopygia kilimensis.

Coccopygia kilimensis, Sharpe, Cat. B. M. xiii. p. 307 (1890); Shelley, B. Afr. I. No. 392 (1896).

Neisna kilimensis, Reichen. Vög. Afr. iii. p. 205 (1904).

? *Coccopygia dufresnii* (non Vieill.) Shelley, Ibis, 1893, p. 26 *Milanji*; 1897, p. 530 *Nyika*.

Type. Very similar to *C. quartinea*; but differs in the mantle being darker with a browner shade, and the centre of breast, abdomen and under tail-coverts of a darker, more rufous buff shade. Wing 1.8. Kilimanjaro, G. S. 88 (Hunter).

The Kilimanjaro Waxbill ranges over Equatorial and East Africa from the Ruwenzori range of mountains into Nyasaland.

The type was discovered by Mr. Hunter on Kilimanjaro, and to this species belong Lord Delamere's specimens in the British Museum from Nairobi, Waso on the Myro River, and apparently a young male, with both mandibles black, from Irrigo on the north-west of Mount Kenya, shot on March 25; also all Mr. Jackson's specimens collected at the Eldoma Ravine, Sotik, Landiani and the Ruwenzori Mountains, which is the most western range known for the species. I therefore presume that to this form belong the specimens recorded from Uluguru (Stuhlmann) and Bukoba (Emin).

I feel more doubtful about those from the Marungu country (Marwitz) and from Nyasaland (Whyte), for they appear to me here to encroach upon the probable range of *C. bocagei*, and the females of these two species are hard to distinguish. The specimens from Nyasaland, two in number, were obtained by my friend Mr. Whyte on the Milanji plain and the Nyika plateau.

Genus XIII. HYPARGOS.

Similar in general structure to *Coccopygia*, but the base of the culmen forms a more acute angle on the forehead. Wing rounded, longest secondary reaching to the tip of the wing; primaries 4 and 5 longest, 2 shorter than 6, and broad throughout its length (never the least sulcated toward the end, as is the case in *Lagonosticta* and *Pytelia*). Tail strongly rounded, feathers of moderate width. In adults, many of the feathers of the under parts have rounded pale subterminal twin spots, one on each web.

Type.

Hypargos, Reichenb. Singv. p. 21 (1863) *H. margaritatus*.

The genus is confined to Tropical and South Africa, and comprises probably only four known species, for we may fairly presume that the types of *Spermophaga margaritata*, Strickl., and of *Amadina verreauxii*, Des Murs, were domesticated varieties of *H. niveiguttatus*, as the former was known to be a cage-bird and the latter was killed with a blow-pipe in Cape Town, and this form has not been met with since 1849. It also appears to me evident that *Pytelia schlegeli*, Sharpe, 1870, is identical with *Estrella nitidula*, Hartl., 1865.

H. harterti, first described as *Lagonosticta nitidula*, Hartl., 1886, belongs to *Hypargos* and is not a *Lagonosticta* according to my definitions of these genera.

KEY TO THE SPECIES.

- a. Some pairs of pale rounded spots on the breast or throat *Older birds.*
 - a¹. Spots confined to breast.
 - a². No green on plumage.
 - a³. Mantle brown.
 - a⁴. Spots on breast shaded with pink *margaritatus.* 29 c
 - b⁴. Spots on breast pure white *niveiguttatus.* 29
 - b³. Mantle red *dybrowskii.* 29
 - b². Mantle green *nitidulus.* 29
 - b¹. Spots numerous on the throat *harterti.* 29 c
- b. No spots on the plumage *Very young birds.*
 - c¹. Entire plumage greenish *nitidulus, juv.*
 - d¹. Entire plumage brown *harterti, juv.*

Hypargos margaritatus.

Spermophaga margaritata, Strickl. Ann. and Mag. Nat. Hist. xiii. p. 418, pl. 10 (1844).

Hypargos margaritatus, Shelley, B. Afr. I. No. 443 (1896); Reichen. Vög. Afr. iii. p. 158 (1904).

Lagonosticta margaritata, Sharpe, Cat. B. M. xiii. p. 275 (1890).

Amadina verreauxii, Des Murs, Icon. 1849, pl. 64.

Hypargos verreauxi, Reichenb. Singv. p. 22, pl. 6, fig. 49 (1863).

Type. "The whole of the upper parts are rich ferruginous brown, except the quills, which are dusky within; the upper tail-coverts and outer margins of the rectrices dull vinous red, and their inner webs and apical portions black. The circuit of the eyes, cheeks, throat and breast pale claret red, rest of lower parts deep black, spotted next the breast and on the sides with large pearl-like spots the colour of peach-blossom, of which two are placed transversely and subterminally on each feather. Total length 4.75 inches, culmen 0.5, wing 2.1, tail 2, tarsus 0.75" (Strickland).

Strickland's Twin-spot inhabited Cape Town.

The information regarding this species is extremely unsatisfactory; of the type H. E. Strickland writes: "This beautiful little bird was purchased at Cape Town, and was said to have been brought from Madagascar." The specimen figured in Des Murs' "Iconographie" was shot by Verreaux with a blow-pipe in a garden in Cape Town. As no others have been recorded during the last half century, the specimens known may have belonged to a race of cage-bred birds which has become extinct.

Hypargos niveiguttatus.

Spermophaga niveiguttata, Peters, J. f. O. 1868, p. 133 *Inhambane*; Dubois, Bull. Mus. H. N. Belg. 1886, p. 148 *Tanganyika*.

Hypargos niveiguttatus, Shelley, B. Afr. I. No. 444 (1896); Reichen. Vög. Afr. iii. p. 157 (1904).

Lagonosticta niveiguttata, Sharpe, Cat. B. M. xiii. p. 274 (1890).

Adult male. Forehead and crown dusky brown, passing into cinnamon-shaded brown on the hind neck, back and wings; rump and upper tail-coverts bright crimson; tail black, strongly washed with crimson on the outer webs of the feathers; quills, with the exception of the outer edges, dark brown above and the under side dusky, with their inner edges white; under wing-coverts white, with a portion on the pinion dusky; sides of head and neck and the entire throat crimson; remainder of the under parts jet black, thickly marked with large round white twin-spots on the feathers of the flanks. Bill slaty black; iris brown; tarsi and feet reddish brown. Total length 4.9 inches, culmen 0.45, wing 2.2, tail 2.0, tarsus 0.65. ♂, 17. 9. 98. Mapiicuti (Cavendish).

Adult female. Differs from the male in having the sides of the head dusky brown; chin and throat pale sandy brown, strongly washed on the middle and lower throat as well as on the sides of the neck with crimson; dark portion of breast dusky grey; the white spots with narrow black edges. Total length 4.8 inches, culmen 0.45, wing 2.2, tail 2.0, tarsus 0.65. ♀, 8. 2. 02. Kilimanjaro (Percival).

Variety, probably a cage-bird. Similar to male above described, but differs in having only six white spots on one side and a single one on the other side, the centre feathers of the breast have some faintly marked broad crimson edges. East Africa (Leadbeater).

Peters' Twin-spot ranges over the eastern half of Africa, from Inhambane to the Equator.

The species was discovered by the late Dr. Peters at Inhambane, and has since been met with in that locality by Mr. H. F. Francis, who writes: "It frequents thick undergrowth and apparently finds its food among the leaves on the ground, as it is generally seen scratching about there." Further north, along the Mozambique coast, Mr. Cavendish found it at Mapiicuti, and according to Dr. Stublmann it is known to the natives at Quilimane as the "Natandolia."

Mr. Boyd Alexander procured a single specimen at Tete and regarded it as a rare bird along the Zambesi. It is, however, apparently abundant in Nyasaland, from whence there are twelve specimens from different places in the British Museum, and is known in Angoniland, according to Gen Manning, as the "Chipalanganga." In its western range it

has been recorded from the Lualaba River (Böhm), Kibero (Bohndorff); from nearer the East Coast, at Rovuma River (Thomson), Lindi, Pare, Arusha (Fischer), Pangani, Melinda (Kirk), Nguru (Emin), Marangu (Neumann), Ndi (Hildebrandt). The Taita country is the most northern range known for the species.

Hypargos dybrowskii.

Lagonosticta dybrowskii, Oust. Le Naturaliste, 1892, p. 231 *Kemo*.

Hypargos dybrowskii, Shelley, B. Afr. I. No. 445 (1896); Reichen. Vög. Afr. iii. p. 160 (1904).

Type. "Head, neck and front of breast deep grey, slightly shaded with olive brown on the top of the head; back and upper tail-coverts rich carmine; tail bluish black; wing brown tinted with olive and marked with one or two scarcely visible black and white dots; abdomen jet black, with numerous white dots; under wing-coverts ashy white, mottled with black. Bill black; iris red; legs reddish brown. Total length 4.6 inches, culmen 0.8, wing 2.12, tail 1.6, tarsus 0.68." (Oustalet).

Dybrowski's Twin-spot inhabits the Northern Congo district.

The species is known, I believe, only by the type, which was discovered by M. Dybrowski on the Upper Komo River in about 5° S. lat., 20° E. long.

Hypargos nitidulus.

Estrela nitidula, Hartl. Ibis, 1865, p. 269 *Natal*.

Hypargos nitidulus, Shelley, B. Afr. I. No. 447 (1896); Reichen. Vög. Afr. iii. p. 159 (1904).

Pytelia nitidula, Sharpe, Cat. B. M. xiii. p. 305 (1890) *Natal*.

Amadina hartlaubi, Bianc. Spec. Zool. Mosamb. xviii. p. 324, pl. 4, fig. 2 (1867) *Mozambique*.

Pytelia schlegeli, Sharpe, Ibis, 1870, p. 482, pl. 14, figs. 2, 3 *Fantee*; id. Cat. B. M. xiii. p. 304 (1890); Reichen. J. f. O. 1902, 37 *Togo*.

Hypargos schlegeli, Shelley, B. Afr. I. No. 446 (1896); Reichen. Vög. Afr. iii. p. 159 (1904).

Adult male. Upper parts, including the wing-coverts, outer webs of quills and the tail, yellowish green; upper tail-coverts washed with reddish orange, remainder of quills and primary-coverts brown, with the inner edges of quills whitish; under wing-coverts pale dusky ash, slightly washed with greenish yellow; under surface of tail black with broad paler ends; entire sides of head and the chin vermilion; throat greener, strongly washed with vermilion; feathers of the chest and front of abdomen dusky ash, with broad black ends enclosing a rather large round white subterminal spot on each web; remainder of abdomen and the under tail-coverts yellowish green. "Iris red; bill crimson, with the culmen and basal portion violet black; feet brownish flesh colour." Total length 4.2 inches, culmen 0.45, wing 2.0, tail 1.3, tarsus 0.6. ♂, August, Bo (Kemp).

Adult female. Differs in having the upper tail-coverts only slightly yellower than the mantle; sides of head and a broad chin-patch sandy buff, faintly washed with red; remainder of throat green, with a wash of yellow strongest on the crop.

Immature. Upper parts more uniform green, sometimes with a dusky shade towards the crown; the sandy buff on the sides of the head and the chin with no trace of red; remainder of the under parts ashy, and with the exception of nestling, mottled, with white-spotted black end to some of the feathers on the sides of the breast. Culmen 0.4, wing 1.95 and 2.05, tarsus 0.6. Natal (Gordge), Yambuya (Jameson) and Efulen, ♀, 19. 4. 02, (Bates).

The Green-backed Twin-spot ranges southward from Sierra Leone and Mombasa into Natal.

The most northern range known for the species is Sierra Leone, where the late Sir E. Sabine procured a specimen, and in the same district Mr. Kemp has collected at Bo, in July and August, three males and a female. The protective colouring, or its shyness, may account for the apparent scarcity of this widely distributed species. In Liberia a few specimens have been obtained at Robertsport, Junk River and Cape Mount. The types of *Pytelia schlegeli*, apparently an adult male and a very young bird, figured "Ibis," 1870, pl. 14, were collected by the late Governor Nagtglas, in Fantee, in which country it has also been procured by Haynes at Accra. Specimens have been collected in Togoland by Mr. Baumann at the Misahöhe Station; in Camaroons, at Barombi by Mr. Zeuner, and towards the

eastern boundary of that country, at the Ja River, by Mr. Bates. Marche met with it at Doumé in the Ogowé district, and up the Congo Jameson obtained two specimens at Yambuya; but I do not find it recorded from further south in Western Africa.

In Southern Equatorial Africa Emin procured it at Bukoba, and Mr. Percival an adult specimen from Mombasa. The type of *Amadina hartlaui* was obtained in Mozambique by Fornasini, and the type of the species was discovered by Mr. T. Ayres in Natal. In this colony Mr. Gordge procured at Durban the only specimen he met with, and believed it to be a young male.

Hypargos harterti.

Hypargos harterti, Shelley, Bull. B. O. C. xiv. p. 30 (1903).

Lagonostieta nitidula (non. Hartl. 1865), Hartl. Bull. Mus. Nat. Belg. 1886, p. 145, pl. 4. figs. 1, 2 *Tanganyika*; Sharpe, Cat. B. M. xiii. p. 279 (1890); Shelley, B. Afr. I. No. 432 (1896); Reichen. Vög. Afr. iii. p. 195 (1904).

Adult male. Forehead and crown ashy grey; remainder of the upper parts brown, with the upper tail-coverts darker, and the tail entirely brownish black; under wing-coverts sandy buff, and the inner edges of the quills whitish; sides of head, throat, front and sides of body ashy grey, fading into buff on the remainder of the body and the under tail-coverts; sides of forehead and head, throat and crop strongly washed with crimson-shaded pink; lower throat and fore-chest with small, rounded, white twin-spots on each of the feathers. "Iris brown; bill purplish red; feet grey." Total length 4.1 inches, culmen 0.4, wing 1.9, tail 1.7, tarsus 0.6. ♂, 21. 5. 01. Sagua, on Quanza River (C. H. Pemberton).

Immature. Uniform light brown, paler beneath; no white spots, but the throat is slightly mottled with a wash of vinous red.

The Brown Twin-spot ranges from Lake Tanganyika to the Quanza and Zambesi Rivers.

The types, an adult male and an immature bird, were discovered by Storms during his expedition to Lake Tanganyika.

In the Tring Museum there is a full plumaged male, shot by Mr. C. H. Pemberton at Sagua, on the Quanza River, and Dr. W. L. Sclater has obtained a specimen at the Victoria Falls of the Zambesi.

Genus XIV. LAGONOSTICTA.

Bill conical, deeper than broad at the nostrils; basal half very slightly swollen, the sides being almost straight; nostrils rounded and covered by the frontal feathers. Wings rounded; primaries 1 narrow and pointed, shorter than the culmen; 2 with the end third very narrow, the inner web of this portion being generally distinctly cut away as in *Pytelia*; 4 and 5 longest; 2 shorter than 6. Tail fan-shape, with the feathers broad. Tarsi and feet moderate. Plumage, with the upper tail-coverts and portion of tail, red; some red on the breast, at least in adult males, and generally with small white spots on the chest; sexes usually differ somewhat in plumage.

Type.

Lagonosticta, Cab. Mus. i. p. 171 (1851)	<i>L. rubricata.</i>
Rhodopyga, Heugl. J. f. O. 1868, p. 13	<i>L. rhodopsis.</i>
Lichnidospiza, Heugl. Orn. N. O. Afr. App. p. cxxxvii. (1871).	<i>L. melanogastra.</i>

The genus is confined to Tropical and South Africa, and according to my key comprises thirteen species; but *L. rhodopsis* is known apparently by immature birds only, which, as Dr. Reichenow suggests, are probably young of *L. brunneiceps*.

I have separated the southern representative of *L. brunneiceps*, *L. rendalli*; these and *L. senegala* form a closely allied group, each with a very well-defined range, so I should hesitate to call them subspecies.

KEY TO THE SPECIES.

a. Under tail-coverts black.

a¹. Entire head and neck slaty grey like the mantle . . . *cinereovinacea.*

b¹. Some red on the head or neck.

a². Entire keel of lower mandible blackish.

a³. Basal half of lower mandible (with the exception of the keel) pale.

a⁴. A broad jet black band down the centre of chest *melanogastra*, ♂, ad.

- b*⁴. No jet black band down the centre of chest *melanogastra* ♀, and juv.
- b*³. Entire bill uniform blackish.
- c*⁴. Bill larger; culmen about 0.45 *polionota*. 240
- d*⁴. Bill smaller; culmen about 0.35.
- a*⁵. Mantle more olive shaded brown, with no trace of red.
- a*⁶. Crown and back of neck tinged with red *rhodopareia*, ad. 250
- b*⁶. Crown and back of neck not tinged with red.
- a*⁷. Red, on under parts less pink . . . *rhodopareia*, juv.
- b*⁷. Red, on under parts more pink . . . *congica*. 251
- b*⁵. Mantle more cinnamon brown, often tinged with red like the crown and back of neck *jamesoni*. 252
- b*². Entire basal half of lower mandible pale.
- c*³. Upper mandible entirely blackish; no red shade on crown, hind neck, or mantle. *rubricata*. 254
- d*³. Upper mandible pale, with the culmen black; crown and back of neck tinged with red. . . *landanae*. 255
- b*. Under tail-coverts pale.
- c*¹. Bill pale, with the culmen, keel and cutting edges black.
- c*². Red on plumage more scarlet; breast with or without round white spots. Females mostly brown; red confined to front of eyes, upper tail-coverts and tail.
- e*³. Nape and the entire crown red *senegala*, ♂, ad. 256
- f*³. Nape and generally part of crown brown.
- e*⁴. More red on hind-neck, mantle and breast *brunneiceps*, ♂, ad. 257
- f*⁴. Less red on hind-neck, mantle and breast *rendalli*, ♂, ad. 261
- d*². Red on plumage more pink; breast with white spots inclining to bars *rufopicta*. 262
- d*¹. Bill blackish, with only base of lower mandible pale, plumage dusky ash with no white spots *rhodopsis*. 264

Lagonosticta cinereovinacea. (Pl. 33, fig. 2.)

Lagonosticta cinereovinacea, Sousa, Journ. Lisb. 1889, p. 49 *Quindumbo*.
Estrilda cinereovinacea, Shelley, B. Afr. I. p. 414 (1896); Reichen.
 Vög. Afr. iii. p. 192 (1904).

Adult male. Entire head, neck, mantle, middle back and lesser wing-coverts deep slaty grey; remainder of the wings browner, with a few

indistinct narrow dusky bars on some of the greater coverts and inner secondaries; under surface of wing with a silvery gloss and whitish edges to the coverts; rump and upper tail-coverts deep crimson; tail brownish black, with numerous obsolete narrow bars, visible in certain lights; a broad track down the centre of the chest, abdomen and the under tail-coverts jet black; sides of body deep vinous-shaded crimson. "Iris red; eyelids paler red; bill violet-shaded black; tarsi and feet dusky rufous." Total length 5 inches, culmen 0.4, wing 2.1, tail 1.9, tarsus 0.65. ♂, 1. 93. Galanga (Anchieta).

Type, female. Similar, but with the irides brown. ♀, Quindumbo (Anchieta).

The Ashy-vinous Fire-finch inhabits Angola and Benguela.

In the Tring Museum there is a specimen of this rare species obtained by Mr. Pemberton at Bailundu in July. This is the only record I find of its occurring in Angola; the other specimens known to me were collected by Anchieta, the type, a female from Quindumbo and a male from Galanga, and was known by the natives at the former place as the "Ocequenua" and at the latter as the "Xemico." Through the kindness of my friend, Prof. Barbasa du Bocage, I have been able to describe both of Anchieta's specimens and have figured the male. This is a true *Lagonosticta*, in which genus it was originally placed.

Lagonosticta melanogastra.

Lagonosticta melanogastra, Heugl. J. f. O. 1863, p. 273 *Djur*; Hartert, Nov. Zool. 1901, p. 341 *Niger*.

Habropyga rara, Antin. Cat. p. 72 (1864).

Lagonosticta rara, Sharpe, Cat. B. M. xiii. p. 282 (1890); Shelley, B. Afr. I. No. 423 (1896); Reichen. Vög. Afr. iii. p. 201 (1904).

Habropyga hypomelas, Heugl. J. f. O. 1864, p. 252 *Djur*.

Rhodopyga hypomelas, Heugl. J. f. O. 1868, pl. i, fig. 4.

Habropyga hypomelæna, Heugl. Orn. N. O. Afr. p. 611 (1870).

Habropyga cenchroa, Hartl. J. f. O. 1882, p. 322 *Obbo*.

Adult male. Mostly crimson, the head, neck, back, scapular, lesser wing-coverts, edges of greater-coverts, upper tail-coverts, edges of tail-

feathers, front and sides of breast being of that colour; primary-coverts and quills dark brown, washed with crimson on the outer margins of the inner secondaries; under wing-coverts and inner margins of quills whitish; remainder of tail and chest, abdomen, thighs and under tail-coverts black; no white spots on the breast. " Iris olive brown; eyelids pale pink, portion of bill rosy red; upper mandible blackish; feet dark grey. Total length 4 inches, culmen 0.45, wing 1.9, tail 1.9, tarsus 0.55. ♂, Lokoja (Forbes).

Adult female. Differs in having much less red; head and neck greyish ash, with a patch of dark crimson in front of eye; chin and throat ashy buff, with rosy red towards the crop; mantle ashy brown, slightly shaded with crimson; wings brown, with scarcely any crimson on the edges of the feathers; crop, front and sides of breast rosy pink; centre of chest tawny buff, shading into black on the abdomen and under tail-coverts. Iris reddish; upper mandible black, lower one rosy red, with the keel and tip black; feet dusky; wing 1.9. Tingasi (Emin).

Immature. No red on the head, mantle and wings; under parts nearly uniform pale brown, with a slight shade of pink towards the crop. Portion of upper and under mandible pale. ♂, 27. 8. 82. Lokoja (Forbes).

Heuglin's Black-bellied Fire-finch ranges from the Niger into North-east Africa.

The late W. A. Forbes collected two specimens at Lokoga on the Niger, one an immature bird in August, the other an adult male out of a pair in September. These are in the British Museum, where there are also two obtained by Emin at Tingasi to the west of the Upper White Nile. In this latter district it is apparently most abundant, having been met with there by Emin, at Lado, Foda and Obbo; the type was discovered by Heuglin in the Djur country and was christened by him *Lagonosticta melanogastra* in 1863; in June of the following year he renamed it *H. hypermelas*, under the false impression that *Estrilda melanocephala*, Swains., which was previously named *Fringilla perrein* by Vieillot, belonged to the same genus.

Heuglin also met with the species at Wau, Bongo and Dombo, in pairs or family parties, frequenting the bush and coarse grass. They did not mix with other Finches, and being

by nature woodland birds, were not frequently seen. Antinori procured his specimens in Kordofan and Sennar, including the type of *Habropyga rara*.

Lagonosticta polionota.

Lagonosticta polionota, Shelley, *Ibis*, 1872, p. 141 *Cape Coast Castle*; Sharpe, *Cat. B. M.* xiii. p. 280, pl. 11, fig. 2 (1890); Shelley, *B. Afr. I.* No. 422 (1896); Reichen. *Vög. Afr.* iii. p. 200 (1904).

Adult male. Centre of forehead, crown and back of neck slate grey, with a very faint crimson shade; back and wings slightly browner; upper tail-coverts and basal half of outer webs of tail-feathers crimson, remainder of tail black; under wing-coverts and the inner margins of quill whitish; remainder of head, front of neck, fore-chest and flanks crimson, with a few white spots on the sides of the chest; sides of head shading gradually into the deep grey of the neck; lower breast, thighs and under tail-coverts black, fading into dusky ash towards the lower chest. Iris dark brown; bill deep blue grey; tarsi and feet slaty brown. Total length 3·8 inches, culmen 0·5, wing 1·9, tail 1·6, tarsus 0·55. Type, ♂, '6. 3. 72. Cape Coast Castle (Shelley).

Adult female. Differs in having less red on sides of head and under parts; sides of head ashy like the crown, with a rosy tinge and strongly washed with crimson in front of eye; throat and middle breast sandy buff, with broad rosy edges to the feathers of the upper throat; remainder of throat, chest and flanks rosy red, with an underlying ashy shade on the base of the feathers; abdomen and under tail-coverts as in the male. Wing 1·9. Bo, August (Kemp).

The Fantee Fire-finch ranges from Sierra Leone to the Niger.

The occurrence of this species so far north as Sierra Leone was first made known by Mr. Kemp, who has collected a large series at Tungie Bridge in June, and at Bo from March to September. He writes: "These Fire-finches are called by the Creoles here 'Thunder-birds.' They live in pairs, but some four to ten will meet to feed on any bare ground, such as paths, and a very favourite spot of theirs was in our compound at Bo, where the herbage had been closely cut and exposed the

scattered grass-seeds on the earth. They were shy, and quickly concealed themselves on our approach, both sexes uttering a peculiar low plaintive song or call-note." The species was not previously known from further west than the Gold Coast.

The typical specimens, three in number, I shot out of small flocks close to Cape Coast Castle on March 6, when they were in full plumage. Here the species is nearly as abundant as *L. rufopicta*, which it resembles in its habits, both being met with in small parties frequenting the thick bush, where they are often to be seen feeding in the paths.

Ussher also procured the species in Fantee, and Dr. Büttner one at Bismarckburg in Togoland. Dr. Hartert found these Fire-finches abundant at the Niger and obtained a specimen at Loko in May.

Lagonosticta rhodopareia. (Pl. 34, fig. 1.)

Lagonosticta rhodopareia, Heugl. J. f. O. 1868, p. 16 *Keren*; Sharpe. Cat. B. M. xiii. p. 282 (1890); Shelley, B. Afr. I. No. 424 (1896); Reichen. Vög. Afr. iii. p. 200 (1904).

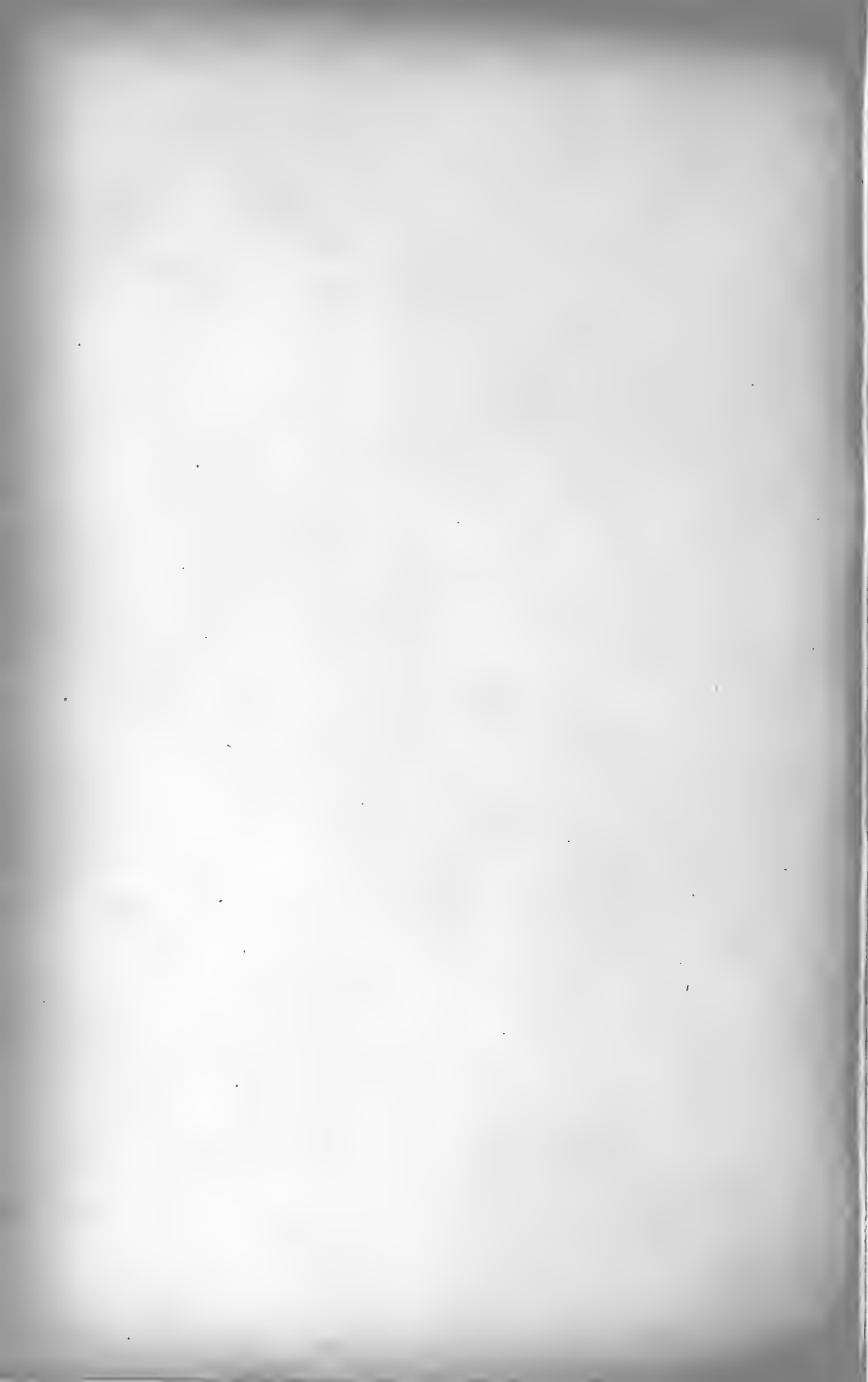
Adult male. Front and sides of forehead crimson; crown and back of neck slate colour, distinctly tinged with crimson; back and wings dark brown; upper tail-coverts and sides of basal half of tail-feathers crimson, with the remainder of the tail black; sides of head and neck, throat, chest and flank crimson, with a few white spots on sides of chest; centre of lower half of breast, thighs and under tail-coverts black. "Iris brown; bill dark slate colour; legs black." Total length 4.2 inches, culmen 0.35, wing 1.95, tail 1.8, tarsus 0.55. ♂, 30. 11. 99. Nairobi (Delamere).

Female. Differs from the adult male and resembles *L. congica* in having the crown, ear-coverts, back and sides of neck dusky grey, with no red shades. It differs from *L. congica* in having the head in front of the eyes and the forehead ruby crimson; chin, throat, chest and flanks buffy brown, strongly washed with crimson. "Iris brown; bill dark slate colour; legs black." ♀, 24. 1. 00. Gessima R. (Delamere).

The Rosy Black-bellied Fire-finch ranges from Nyasaland to Bogos.



1. *Lagonosticta rhodoparia*
2. *Pytelia citreior*



This is apparently the most abundant of the Fire-finches in Nyasaland, for Mr. Alexander Whyte procured specimens at Zomba in February, and from June to November, and others on the Nyika plateau and on Mount Mlosa. There is a specimen from Dar-es-Saam (Kirk) in the British Museum. Hildebrandt met with it at Mombasa and in Ukamba, and Mr. Jackson observed it for the first time at Nandi, July, 1896, and just two years later found it "plentiful in the vicinity of the Ichaka River," and procured it at Kakamega in Kavirondo. Lord Delamere collected specimens at Nairobi and the Gessima River, which are now in the British Museum.

The type was discovered by Heuglin at Keren, the most northern range known for these Fire-finches; here he found them in the highlands between 4,000 and 5,000 feet, living in pairs, and he also observed them in the warmer valleys of Gallaland.

Lagonosticta congica.

Lagonosticta congica, Sharpe, Cat. B. M. xiii. p. 280, pl. 11, fig. 3 (1890)
pt. *Kassongo*; Shelley, B. Afr. I. No. 421 (1896); Reichen. Vög. Afr.
iii. p. 199 (1904).

Type. Forehead, crown and back of head dusky grey, with no red shade, back and wings dark brown; upper tail-coverts and sides of basal half of tail-feathers crimson, remainder of tail black; under wing-coverts and inner margins to the quills buff; sides of head and neck ashy grey, shading into rosy pink on sides of forehead, front of eyes, cheeks and throat; the ear-coverts faintly tinted with that colour; chin, throat, chest and flanks buffy brown, strongly washed with rosy pink and shading into black on the abdomen, thighs and under tail-coverts; a few white spots on the sides of the chest. "Iris brown; bill and legs blackish" (Lovat). Total length 4.0 inches, culmen 0.45, wing 1.8, tail 1.5, tarsus 0.55. *Kassongo* (Bohndorff).

Sharpe's Black-billed Fire-finch ranges through the Congo and Upper White Nile districts into Southern Abyssinia.

Dr. Reichenow refers to this species specimens from

Chinchouxo (Falkenstein) and Leopoldsville (Bohndorf); therefore Falkenstein obtained both this Fire-finch and *L. landanæ* at Chinchouxo.

The species is represented in the British Museum by three specimens, the type discovered by Bohndorff at Kassongo in May, and a male and female shot by Lord Lovat in Southern Abyssinia, at Chercher Lake, January 2, and at Jawaha, February 23. These specimens are all extremely similar. I have also seen a male procured by Mr. Jackson at Katwe, during the late expedition to the Ruwenzori Mountains, and it has been recorded from Valsaco, near Rimo (Emin).

The species closely resembles in plumage the immature of *L. rhodopareia*, which it agrees with in size and colouring of bill, but may be readily distinguished by the pink shade on the red parts and absence of any red gloss on the crown and back of neck.

Lagonosticta jamesoni.

Lagonosticta jamesoni, Shelley, Ibis, 1882, p. 355 *Tatin R.*; Sharpe, Cat.

B. M. xiii. p. 283, pl. 11, fig. 1 (1890); Shelley, B. Afr. I. No. 425 (1896); Reichen. Vög. Afr. iii. p. 200 (1904).

Lagonosticta rubricata (non Licht.), Sharpe, Ibis, 1900, p. 110 *Mapicuti*.

Adult male. Similar to *L. rhodopareia* in the amount of red on the head, but differs from it and from all the other known species in the back being of a cinnamon shade with an obsolete crimson gloss; the red of the under parts is rosy pink; scarcely any small white spots on the breast. "Iris brown; bill bluish ash, with the culmen and tip dusky; tarsi and feet pinkish ash" (T. Ayres). Total length 4 inches, culmen 0.35, wing 1.9, tail 1.5, tarsus 0.55. ♂, 9. 12. 80. *Tatin R.* (Jameson).

Adult female. Upper parts as in the male; under parts paler, with broad pinkish buff edges to the black under tail-coverts. Wing 1.9. ♀, 17. 8. 80. *Umfuli R.* (Jameson).

Immature female. Differs from the adult female in having no tinge of red on the crown, neck, or mantle, and less red on the under parts, which are mostly sandy buff. ♀, 2. 11. 82. *Rustenber*g (Jameson).

Immature male. Differs from the last in having the forehead, crown and sides of the head washed with crimson, and the under parts tawny brown, mottled with a wash of rosy crimson, strongest on the chin and throat, under tail-coverts entirely jet black. ♂, juv., 20. 9. 98. Chiringoma (Cavendish).

Jameson's Fire-finch ranges over Eastern Africa between 25° S. lat. and the Equator.

In the British Museum there is a pair from Rustenberg, collected November 3, 1882, and presented by Mrs. Jameson, the types discovered by her husband at the Tatin and Umfuli Rivers, an immature male from the Chiringoma district in Portuguese South Africa, and a full plumaged male from Kibwezi in about 2° 30' S. lat., which is the most northern range known for the species.

Mr. T. Ayres, who accompanied the Jameson Expedition in 1882, wrote: "We met with but very few of these Finches; near the Umfuli we found them amongst the rough cover on the banks of the river, feeding on grass-seeds, and at Tatin they were always in pairs." Matabele name, "Tuitjustjui." Mr. Guy Marshall, in November, 1897, found "a few flocks along the river and among the granite kopjes close to Salisbury, but they disappeared shortly afterwards. In general habits they resembled the Common Waxbill."

Mr. Boyd Alexander met with the species at the Zambesi and writes: "Though observed on several occasions, especially at Zumbo, we only managed to obtain a single specimen near the Kafue River on January 12, out of a pair that frequented long grass close to the bank. In life they are easily to be distinguished from their close congener, *L. brunneiceps*, by their larger size and stouter tails, while they generally keep apart from the latter species and go in pairs."

From further north I find it recorded by Dr. Reichenow from Mombasa Island, and Mr. Jackson procured a specimen at Kibwezi in Ukamba.

Lagonosticta rubricata.

Fringilla rubricata, Licht. Verz. Doubl. p. 27 (1823) *Caffraria*.

Lagonosticta rubricata, Sharpe, Cat. B. M. xiii. p. 281 (1890); Shelley, B. Afr. I. No. 420 (1896); Sharpe, Ibis, 1897, p. 513 *Zulu*; Short-ridge, Ibis, 1904, p. 177 *Pondoland*; Reichen. Vög. Afr. iii. p. 199 (1904).

Le Sénégal rouge, Vieill. Ois. Chant. p. 29, pl. 9 (1805).

Adult male. Front of forehead crimson; no crimson shade on the crown, back and sides of neck, which are brownish ash, shading into clear brown on the mantle and wings; lower back and upper tail-coverts crimson; tail black, washed with crimson on the edges of the feathers, most strongly so towards their base; under wing-coverts and inner edges of quill whitish, shaded with rufous brown at the bend of the wing. Front half of sides of head, chin, front of neck, fore-chest and flanks crimson, with a few white spots on the sides of the chest; sides of head shading gradually into brownish ash on the nape and sides of neck; lower breast, thighs and under tail-coverts black, fading into dusky ash toward the lower chest. "Iris brown; bill bluish black; under mandible lilac at the base; tarsi and feet bluish ash" (Barratt). Total length 4.1 inches, culmen 0.45, wing 2.0, tail 1.8, tarsus 0.55. ♂, 2. 7. 75. Pinetown (T. L. Ayres).

Adult female. Upper parts as in the male; less red on the sides of head, throat and breast; lower breast brownish buff, with the vent and under tail-coverts only dusky black. Wing 1.8. ♀, 9. 12. 74. Macama (Barratt).

Young. Similar to the adults in the colouring of the back, wings and tail; but with the remainder of the upper parts, as well as the sides of the head and neck, of the same brown as the mantle; under parts entirely pale tawny brown. ♂, 18. 10. 95. Essex Vale (Selous).

The Cape Fire-finch ranges over Eastern South Africa from Cape Colony into Nyasaland.

The most western range known for the species is Eastern Cape Colony, where it is fairly common. I found it tolerably abundant about Pinetown, and Mr. T. L. Ayres collected a fine series from that place and Durban. In Zululand the Messrs. Woodward met with it at the Black Umfolosi River. In the British Museum there are specimens from Grahamstown, Eland's Post, Pretoria, Macomac, Matabele, and Zomba in Nyasaland. In the Lydenburg district, according to Mr. T.

Ayres: "This species is often to be seen about the jungle on the outskirts of the woods, where it attracts attention by its peculiar though not loud note. It is most frequently in pairs, though three or four are often to be seen together." He also writes: "Their food consists of grass-seeds; they frequent rough high grass, hedgerows, and low underwood at the edge of the dense bush. Their nest is generally placed a foot or two from the ground, supported amongst coarse grass." Stark adds: "It is circular in shape, with a side entrance, and is constructed of fairly coarse grass-stems loosely twined together. The interior is lined with feathers. The eggs, from four to six in number, are pure white and average 0.58×0.45 ."

In Matabele Mr. Selous obtained a specimen at Essex Vale, and the most northern range yet known for it is Zomba, in the Upper Shiré district, where it has been met with by Mr. Whyte, and here meets with its northern ally, *L. rhodopareia*.

Lagonosticta landanæ.

Lagonosticta landanæ, Sharpe, Cat. B. M. xiii. p. 283, pl. 12, fig. 2 *Landana*; Shelley, B. Afr. I. No. 426 (1896); Reichen. Vög. Afr. iii. p. 201 (1904).

Type. Upper parts dark brown, with a crimson shade on the crown and back of neck; upper tail-coverts and basal half of the outer webs of the tail-feathers crimson; entire sides of head, chin, throat, chest and flanks crimson, with the abdomen, thighs and under tail-coverts black, of a dusky shade towards the lower chest. Iris brown; bill red, with the tip and the edges of the upper mandible blackish; feet brown. Total length 4 inches, culmen 0.45, wing 1.85, tail 1.5, tarsus 0.5. ♂, 2. 83. *Landana* (Petit).

The Landana Fire-finch inhabits Loango.

The types, a male and female discovered by Lucan and Petit at Landana, were formerly in my own collection prior to their going to the British Museum. To this species should be

referred the *L. rubricata* (non Licht.), "Bocage," Orn. Angola, p. 362, and Reichenow, "J. f. O.," 1877, p. 29; for Dr. Reichenow refers Falkenstein's specimens from Chinchouxo to both this species and to *L. congica*, and I was surprised to learn that Böhndorff's specimen from Leopoldsville, which I have not seen, is also referable to *L. congica*. I should have expected to have found that the present species was the representative Fire-finch of the Lower Congo district.

Lagonosticta senegala.

Fringilla senegala, Linn. S. N. (xii.) i. p. 320 (1766).

Lagonosticta senegala, Sharpe, Cat. B. M. xiii. p. 275 (1890); Shelley, B. Afr. I. No. 427 (1896); Reichen. Vög. Afr. iii. p. 195 (1904).

Fringilla ignita, Gm. S. N. ii. p. 906 (1788).

Fringilla minima, Vieill. N. Dict. xii. p. 183 (1817).

Lagonosticta minima, Sharpe, Cat. B. M. xiii. p. 276 (1890); Butler, Foreign Finches in Captivity, p. 115, pl. 22, fig. 3 (1894); Shelley, B. Afr. I. No. 428 (1896); Nehrkorn, Kat. Eiers. p. 125 (1899) *egg*; Hartert, Nov. Zool. 1901, p. 341 *Niger*; Reichen. J. f. O. 1902, p. 37, *Togo*.

Fire-bird, Brown, Ill. Zool. pl. 2, fig. 2 (1776).

Le Petit Sénégalai rouge, Vieill. Ois. Chant. p. 31, pl. 10 (1805).

Adult male. Mantle brown, with a crimson wash, passing into almost uniform crimson on the entire head; lower back, upper tail-coverts and incomplete edges to the tail-feathers bright crimson; remainder of tail brownish black, wings dark brown, with the outer edges of the quills and the coverts paler, the latter slightly washed with crimson; sides of head and neck, chin, throat and chest crimson, shading into brown, of a somewhat variable shade, on the abdomen and under tail-coverts; on the sides of chest generally, but not always, a variable number of small white spots. Iris reddish brown; eyelids yellow; bill red, with the tip, culmen, edges of upper mandible and the keel black; tarsi and feet dusky brown. Total length 3·5 inches, culmen 0·35, wing 2·0, tail 1·5, tarsus 0·5. Sierra Leone (Kemp).

Adult female. Differs in being earth brown, paler below and inclining to brownish buff down the centre of the breast, on the abdomen and under tail-coverts; head in front of the eyes crimson or strongly washed with that

colour, front and sides of chest with some small white spots. Iris red; bill red, with the culmen, edges of upper mandible and the keel black; feet brownish flesh colour. Wing 1.9 inches. Gambia R. (Whiteley).

Immature. Differs from the adult female only in having no white spots on the chest. ♀, Cape Verde (Laglaize).

The Senegal Fire-finch ranges from Senegambia to the Niger.

The species is well represented in the British Museum by specimens from Cape Verde, Dakar, Gambia, Sierra Leone, River Volta and the Niger.

Dr. Rendall records it as "common, specially noted in flocks" at the Gambia, and Mr. Budgett found it on M'Carthy Island "very common about the native huts." From Sierra Leone Mr. Kemp writes: "Abundant at Rotifunk, roosting in the orange-trees of our compound, where my native boy, with a lantern, has caught them in his hand at night." Ussher met with the species in Fantee and along the Volta River, and Dr. Baumann at Sebbe, in Togoland. Among the four specimens in the British Museum from Lokoja there is one, an apparently adult male, obtained by Capt. M. Ferryman, which exactly resembles a South Abyssinian specimen of *L. brunneiceps*, labelled Harar, ♀, 17. 6. 02 (Zaphiro), so I presume that the range of *L. senegala* and *L. brunneiceps* meet at Lokoja on the Niger.

Dr. Russ gives the following description of the young birds: "Nesting-down brownish white; little wart at the angle of the beak bluish white. Young plumage almost uniform dirty grey; only the faint, still delicate dark red on the croup to centre of tail and the outer webs of the tail-feathers can be clearly recognised in this species; beak shining black; eyes black without yellow ring; the little spots on the sides are wanting. Change of colour commences in the third to the fifth week, completed in about six weeks."

Lagonosticta brunneiceps.

- Lagonosticta brunneiceps*, Sharpe, Cat. B. M. xiii. p. 277 (1890) *Maragaz*; Shelley, B. Afr. I. No. 430 (1896); Nehr Korn, Kat. Eiers. p. 125 (1899) *egg*; Grant, Ibis, 1904, p. 258 *Harar*; Reichen. Vög. Afr. iii. p. 196 (1904).
- Lagonosticta somalensis*, Salvad. Mem. R. Acc. Sc. Torino, 1894, p. 557 *Somali*; Shelley, B. Afr. I. No. 429 (1896).
- Lagonosticta brunneiceps somalensis*, Reichen. Vög. Afr. iii. p. 197 (1904).
- Lagonosticta brunneiceps ruberrima*, Reichen. Orn. Monatsb. 1893, p. 24 *Victoria Nyanza*; id. Vög. Afr. iii. p. 198 (1904).

Adult male. Upper parts brown, shading into crimson on the forehead and sides of crown, and the hind neck and mantle somewhat washed with that colour; rump, upper tail-coverts and incomplete edges to the tail-feathers bright crimson, remainder of the tail brownish black; under surface of the wings dusky brown, with the inner edges of the quills and the under wing-coverts buff; sides of head and neck, chin, entire throat and the chest crimson, shading off into dusky or sandy brown on the abdomen and under tail-coverts, which latter often have some white terminal edges; on the sides of the chest are generally, but not always, some small white spots which are very variable in number. Iris reddish brown; eyelids yellow; bill red, with the tip, culmen, edge of upper mandible and the keel black; tarsi and feet dusk brown. Total length 3 inches, culmen 0.35, wing 2.0, tail 1.5, tarsus 0.5. Type, ♂, 27. 76. 8. *Maragaz* (Jesse).

Adult female and young birds. Like those of *L. senegalæ*.

The Northern Brown-naped Fire-finch ranges from Nubia southward to the Rovuma River, and westward to the Niger and Upper Congo.

The species is represented in the British Museum by one of Capt. Ferryman's specimens from Lokoja on the Niger, and others from the following localities: Albert Edward Nyanza, White Nile, Soudan, Shendi, Bogos, the type from *Maragaz* (Jesse), Abyssinia, Shoa, Somali, Lake Baringo, Kenia, Athi River, Machako's, Lamu, Pangani, and Ujiji on the Upper Congo. With this fine series before me I cannot recognise *S. somalensis*, Salvad., as a pale form, nor *L. brunneiceps ruberrima* Reichen., as a constant redder form, as they both appear to me

to be equally well represented in the Northern Abyssinian district, where Jesse discovered the type of *L. brunneiceps*; but there is a South African representative, *L. senegala rendalli*, Hartert, which deserves recognition.

Heuglin met with these birds in the town of Dongola, at Berber, Senaar and Kordofan; they were generally in small flocks and single specimens, mostly seen in the warmer parts of Abyssinia and along the White Nile, and according to his notes, they assume the full plumage here in July and August, when they begin to breed, often placing their nests close to each other, at times under the roofs of houses and in holes in walls. The nest has a large, irregular outer coating of straw, covering a shallow depression for the eggs, and is composed of hairs, feathers, grass and wool. The eggs vary in number from three to seven. It is a lively little bird, associating freely with other Finches, and occasionally will enter a house to pick up the bread-crumbs. It is rarely seen in trees during the day-time, when it is generally seeking its food on the ground, often near dwellings. The Hon. N. C. Rothschild and Mr. Wollaston write: "These beautiful little birds were never observed far from the huts on the river-bank, where they were often seen picking up crumbs of dhurra-meal almost out of the hands of the natives."

My friend, Mr. A. L. Butler, has sent me the following note from the Soudan: "A common resident. Very fond of the vicinity of houses and villages. A charmingly fearless little bird, entering verandahs and outhouses freely to drink from jars. I have seen it at Khartoum (all the year), at Gedaref (April to June), at Gallabat (June), Wad Medani (April and June)." Mr. Hawker remarks: "Not noticed south of Goz-abu-gumar, but I found it at Fashoda and up the Bahr-el-Gazal to Meshra-es-Rek in March and April. I saw a pair feeding a newly fledged young one at Khartoum, January 19, 1903;

when I approached to look at the young, one of the parents fluttered about within a yard of me."

The type of *L. somaliensis* was obtained by Prince Ruspoli in Somaliland, and Dr. Reichenow proposed the name *L. brunneiceps ruberrima* for birds from the northern portion of the Victoria Nyanza district, which would include Mr. Jackson's specimens from the Athi River, Kangao and Ntebbe, and Dr. Ansorge's from Uganda and Unyoro. Fischer records the species as abundant from the Tana River to Bagamoio, and Böhm, as plentiful in small parties along the banks of the Kingani River, also, at Taboro and Kakoma. It has been recorded from Langenburg and Mtiras, close to the Rovuma River (Fülleborn), which is the most southern range known to me for this species.

Lagonosticta rendalli.

Lagonosticta senegala rendalli, Hartert, Nov. Zool. 1898, p. 72 *Shiré Valley*.

Lagonosticta brunneiceps (non Sharpe), Sharpe, Cat. B. M. xiii. p. 277 (1890 pt.) Specimens *a* to *q*; Shelley, B. Afr. I. No. 430 (1896 pt.), S.; Reichen. Vög. Afr. iii. p. 196 (1904 pt.) *S. Africa*.

Adult male. Similar to *L. brunneiceps*, from which it differs in being browner and less shaded with red; rarely any trace of red on the hind neck or mantle; under parts rather pale, with the brownish buff of the abdomen extending distinctly on to the chest, the red wash on the under parts being more restricted to the throat and front of the chest. Total length 3.6 inches, culmen 0.35, wing 1.9, tail 1.5, tarsus 0.45. Type, ♂, 9. 5. 95. Upper Shiré R. (Rendall).

Adult female. Like the female of *L. senegala*. Wing 1.9. ♀, 4. 3. 95. Upper Shiré (Rendall).

Rendall's Fire-finch replaces *L. brunneiceps* in South Africa, south from Benguela and the Shiré River.

These Fire-finches are represented in the British Museum by a full plumaged male obtained by Sala at the Katumbella

River, in Benguela, and by a male and female from Ondonga, in Ovampoland, collected by Andersson, who also met with the species at Ovaquenyama in Damaraland. I am not aware of its occurring further south in Western Africa, nor have I seen a specimen from south of the Transvaal; but Stark gives its range as "from the south of Natal northward through Zululand," &c.

The species is abundant and evenly distributed over the eastern half of South Africa, and is represented in the British Museum from Potchefstroom (T. Ayres), Rustenburg (W. Lucas), Pretoria (Pratt), Limpopo River (Oates), Tatin River (Jameson), Mozambique (Guinsius), Tete (Kirk), Zambesi (Alexander).

Stark writes: "Somewhat common in the Transvaal between Potchefstroom and the Limpopo River, in small flocks, or perhaps more often in single pairs. They feed on the ground, almost exclusively on grass-seed, keep close together when feeding, and are gentle and affectionate in their manners. While hopping about on the ground they constantly repeat a soft twittering note, which is changed to a sharp call when they take flight. Like many of the South African small birds they breed very irregularly in the Transvaal, both in the summer and winter. A nest taken towards the beginning of June was placed on the ground in the centre of a tuft of grass. It was domed with a small side entrance, and was loosely woven from coarse grass lined with feathers. It contained three white eggs averaging 0.56×0.45 ."

Mr. Boyd Alexander, when on the Zambesi, made the following remarks: "Frequents waste places, overgrown with long grass, near the river. On August 16, we found a nest placed in a small bush close to the ground. The nest was domed and composed of pieces of Indian corn-blades and lined with fine grass-bents and Guinea-fowl feathers. The eggs,

three in number and much incubated, were white, and had average measurements of 0.58×0.46 inch.

“In our series the adult males have the white spots on the sides of the breast well defined. An adult female shot on January 5, has these spots also clearly, and at the same time more numerous, marked; while two females obtained four months earlier, on September 6, do not possess any of these spots, and the crimson on the lores is less conspicuous. These breast-markings, therefore, appear to come with age. An immature male with a few feathers becoming crimson on the chin and forehead, obtained on August 10, resembles in plumage these two females.”

The most northern range known to me for this species in Eastern Africa is the Shiré Valley, where Dr. Percy Rendall discovered the types, a female in March, and a male with his nest containing seven eggs on May 9.

Lagonosticta rufopicta.

Estrela rufopicta, Fraser, P. Z. S. 1843, p. 27 *Gold Coast*; id. Zool. Typ. pl. 51 (1849).

Lagonosticta rufopicta, Sharpe, Cat. B. M. xiii. p. 278 (1890); Shelley, B. Afr. I. No. 431 (1896); Nehr Korn, Kat. Eiers. p. 125 (1899) *egg*; Reichen. J. f. O. 1902, p. 37 *Togo*; id. Vög. Afr. iii. p. 198 (1904).

Lagonosticta (Estrela) laterita, Heugl. J. f. O. 1864, p. 251 *Djur, Bongo, Kosanga*.

Adult male. Upper parts brown, slightly greyer on the crown; forehead bright crimson like the eyebrow; lower back, upper tail-coverts, and edges of basal half of tail-feathers crimson; edges of upper wing-coverts slightly washed with red; under coverts and inner margins of quills whitish brown; sides of head bright crimson, becoming pinker on the chin, throat, front and sides of breast; feathers of the crop, front and sides of chest with small white twin-spots, inclining to form bars; centre of breast, abdomen and thighs brown, fading into buff on the under tail-coverts. Iris brown; bill orange red, with the culmen black; tarsi and feet dusky brown. Total length 3.7 inches, culmen 0.4, wing 1.85, tail 1.5, tarsus 0.55. ♂, Abutchi (Forbes).

Adult female. Differs only in having no trace of red on the wings, and a less amount of white markings on the breast. Wing 1·85. ♀, August. Abo (Forbes).

The Bar-breasted Fire-finch ranges from Senegambia to the Niger and Upper White Nile districts.

Marche and De Compiègne procured the species at Daranka in Senegambia, and Bulger on Bulama Island. In the British Museum there are two specimens collected by the late Dr. Clark at Sierra Leone, eight from Fantee and inland, including the type, two from the Volta River, and three from the Niger.

T. E. Buckley and I found the species to be extremely abundant during the spring of the year, near Cape Coast, generally in small flocks feeding along the paths which intersect the thick bush. Ussher met with it along the Volta River, and Mr. Baumann at Sebbe in Togoland. W. A. Forbes obtained specimens at Abuchi and Abo on the Niger, and I do not find any mention of the species from further south in West Africa; but it ranges eastward to the Bongo and Wau countries of the White Nile district, where Heuglin procured the type of his *L. laterita*, and records it from the Djur and Kosango Rivers, along the banks of which streams he met with a few during the rainy season.

Regarding its habits, Ussher writes: "This pretty little Bengali is one of the commonest birds on the West Coast of Africa. It is extremely tame, frequenting the vicinity of houses, and hopping about the yards with the confidence of the common House Sparrow in England. They build in low grass, on the seeds of which they also feed, and are gregarious; in the bush they will associate in flocks with other Bengali."

According to Mr. Kuschel the eggs are pure white and measure 0·56 × 0·44.

Lagonosticta rhodopsis.

Estrela rhodopsis, Heugl. J. f. O. 1863, p. 166 *Gazelle R.*

Lagonosticta rhodopsis, Sharpe, Cat. B. M. xiii. p. 279.

Type. "Entirely dull dusky ash; paler underneath, middle of abdomen and under tail-coverts whiter; eyebrows, lores, cheeks and chin washed with rosy; tail rather graduated, above black, below smoky brown; rump and upper tail-coverts crimson, brown towards the base of the outer margin; bill blackish, washed with rose, with a white spot at the angle of the mouth; feet dusky, the soles ashy; iris brown. Total length 3.8, bill from forehead scarcely 0.4, wing 1.85, tail 1.6, tarsus 0.6. ♂, Gazelle River" (Heuglin).

Heuglin's Dusky Fire-finch inhabits the Gazelle River.

It is known to me by the description of the types only, these are a male and female discovered by Heuglin at the Gazelle River. He met with the species always in pairs frequenting the rushes and bushes in marshy places, and remarks that they feed on seeds, and are both shy and active.

Heuglin's typical specimens are probably, as Dr. Reichenow suggests ("Vög. Afr." iii. p. 198), immature birds of *L. brunneiceps*.

Genus XV. PYTELIA.

Bill conical, much compressed at the sides of the end half; nostrils rounded and covered by the frontal feathers; base of bill ends in a right angle on the forehead. Wings rounded, primaries 1 small, narrow and sharply pointed, not reaching to the end of the primary-coverts; 2 equal in length to 6, and, with the end portion compressed at the sides and pointed, as in *Lagonosticta*; 3, 4 and 5 nearly equal and the longest. Tail shorter than the wing and slightly rounded. Tarsi and feet moderate; claws rather short and curved. Plumage, with the upper tail-coverts and portion of the tail, red; sexes dissimilar in colouring.

Type.

Pytelia, Swains. Class. B. ii. p. 280 (1837). *P. phænicoptera.*

Zonogastris, Cab. Mus. Hein. i. p. 172 (1851) *P. phænicoptera.*

Marquetia, Reichenb. Singv. p. 48 (1863) *P. melba.*

The genus is confined to Tropical and South Africa, and comprises what I consider to be six good species, and four less distinct forms; these latter I treat as subspecies.

Swainson, in a note at the beginning of his "Classification of Birds," ii., mentions as a "subsequent volume" his "Birds of Western Africa," proving that this generic name should be spelt *Pytelia*, not *Pytilia*.

KEY TO THE SPECIES.

- a. Some red or yellow on the wings.
 - a¹. No yellow on throat.
 - a². Wings with some red and no yellow.
 - a³. Bill black.
 - a⁴. Under wing-coverts nearly uniform white . . . *phænicoptera*. 261
 - b⁴. Under wing-coverts strongly barred *emini*. 261
 - b³. Bill red *lineata*. 261
 - b². Wings, with some yellow and no red.
 - c³. Bill black; back and breast mostly grey . . . *hypogrammica*. 261
 - d³. Bill red.
 - c⁴. Some red on head; back and breast washed with yellow *afra*, ♂. 261
 - d⁴. No red on head. *Adult females of this and following species.*
 - b¹. Lower throat yellow; some red on head.
 - c². Red on throat not extending beyond the sides of head.
 - e³. Under parts whiter in both sexes; no trace of bars on under tail-coverts; no rounded spots on throat or chest *citerior*, ♂. 261
 - f³. Under parts more strongly barred in both sexes; under tail-coverts sometimes with a trace of bars; males with the pale bars inclining to spots near the crop *jessei*, ♂. 261
 - d². Red extending further down the throat.
 - g³. Breast slightly or much darker; rarely any trace of bars on under tail-coverts *melba*, ♂. 261
 - h³. Breast paler.
 - e⁴. Bars confined to front and sides of breast; under tail-coverts uniform sandy buff *kirki*, ♂. 261
 - f⁴. Breast more barred; under tail-coverts with a trace of bars in both sexes *soudanensis*, ♂.
- b. Wings and general plumage brown; under parts paler . . . *Young*.

Pytelia phœnicoptera.

Pytelia phœnicoptera, Swains. B. W. Afr. i. p. 203, pl. 16 (1837); Sharpe, Cat. B. M. xiii. p. 301 (1890); Butler, Foreign Finches in Captivity, p. 149, pl. 29, fig. 2 (1894); Shelley, B. Afr. I. No. 436 (1896); Reichen. Vög. Afr. iii. p. 161 (1904).
Estrellda erythroptera, Less. Echo du Monde\$ Sav. 1844, p. 295 *Gambia*.

Subspecies a.

Pytelia phœnicoptera emini, Hartert, Nov. Zool. 1899, p. 413 *Lado*; Reichen. Vög. Afr. iii. p. 161 (1904).

Adult male. Upper parts brownish grey, with the rump and upper tail-coverts crimson-shaded scarlet; tail black, with the outer webs of the feathers washed with red; wings dark brown, with broad crimson scarlet outer edges to all the feathers, which colour extends over nearly the whole of the lesser coverts; under wing-coverts white, with scarcely a trace of ashy brown bars; quills with the inner edges slightly paler; sides of head and neck, chin and throat nearly uniform grey, with only a few narrow indistinct whitish bars showing on the upper and lower throat; remainder of the under parts ashy grey, with white bars to the feathers, increasing in width towards the under tail-coverts. "Iris red; bill black; tarsi and feet reddish brown." Total length 4.1 inches, culmen 0.45, wing, 2.25, tail 1.5, tarsus 0.55. *Gambia* (Whiteley).

Subspecies P. emini.

Differs only in the under wing-coverts being much more distinctly barred. Total length 4.8, culmen 0.45, wing 2.3, tail 1.6, tarsus 0.6. ♂, 16. 8. 84. *Lado* (Emin).

The Black-billed Red-winged *Pytelia*, including *P. emini*, ranges from Senegambia and the Gold Coast into the Upper White Nile district.

The type of the species and the type of *Estrellda erythropterus* both came from Senegambia. It is represented in the British Museum by two specimens, one from the *Gambia*, and the other obtained by Emin at *Lado* on the Upper White Nile. Dr. Reichenow records it from *Accra*, and inland at *Gambaga* it has been met with, but according to Mr. Boyd Alexander it is not common there. At this latter place Capt. W. Giffard procured a male and female in July and August, 1889,

and Dr. Hartert remarks: "These specimens have the throat and ashy bars on the underside rather pale, and may be worthy of subspecific rank, if a large series can be compared." He then proposes to separate as a subspecies the two specimens known to him from Lado under the name of *P. phænicoptera emini*. "These birds differ from Senegambian specimens of *P. phænicoptera* in having the under wing-coverts barred with ashy grey, in having somewhat narrower white bars on the feathers of the breast and under tail-coverts, and in having the throat as dark ashy grey as the crown."

As I regard *P. phænicopterus emini* as a very doubtfully distinct form, I look upon Lado as the most southern and eastern known range for the present species. Heuglin records it from Wau and Bongo in the Gazelle River district, where he found it to be shy and scarce, generally in pairs frequenting the brush-wood and tall grass. The egg is, according to Mr. Kuschel, white and measures 0.6 × 0.43.

Pytelia lineata.

Pytelia lineata, Heugl. J. f. O. 1863, p. 17 *Demba*; Sharpe, Cat.

B. M. xiii. p. 301 (1890); Shelley, B. Afr. I. No. 437 (1896);

Reichen. Vög. Afr. iii. p. 162 (1904).

"*Fringilla polyzona*, Würt.," Heugl. J. f. O. 1867, p. 303.

Male. Very like *P. phænicoptera*; but differs in the bill being red, and in the present specimen the under tail-coverts are mostly white. Total length 4.7 inches, culmen 0.45, wing 2.3, tail 1.6, tarsus 0.65. 12. 1. 99. Chercher Lake (Lovat).

Female. Differs from the male in being duller, browner, and obsoletely barred on the breast. Upper parts brown, with some rufous-shaded scarlet, confined to the outer edges of the quills, upper tail-coverts and tail; sides of the head, neck and under parts generally brownish ash, fading into white on the lower chest and abdomen, and with indistinct buff bars; most of the under tail-coverts buff. Total length 4.2 inches, culmen 0.45, wing 2.3, tail 1.5, tarsus 0.6. ♂, 21. 3. 99. Didera (Lovat). Neither of these birds are in full adult plumage, and in both the iris was brown, which is probably a sign of immaturity, for it should be red in adults.

Heuglin's Red-winged *Pytelia* inhabits Abyssinia from 8° to 14° N. lat.

In the most southern range known for this species Lord Lovat shot the two specimens I have above described at Lake Chercher and the Didera River between Zeila and Shoa, in about 8° N. lat. It is, as far as we know, confined to Abyssinia, and is a very rare bird there. In the country between the Blue Nile and the Atbara River, Heuglin procured two specimens, including the type from Dembea, and remarked that they lived in flocks, with other small Weavers, frequenting the clumps of bamboos and the neighbouring pools. Prince Paul of Würtemberg's collection contained a specimen from Fazogl, on the label of which he had written "*Fringilla polyzona*," a name uselessly published by Heuglin in 1867.

Pytelia hypogrammica.

Pytelia hypogrammica, Sharpe, *Ibis*, 1870, p. 56 *Fantee*; id. *Cat. B. M.* xiii. p. 302, pl. 12, fig. 2 (1890); Shelley, *B. Afr. I.* No. 438 (1896); Hartert, *Nov. Zool.* 1901, p. 341 *Niger*; Reichen. *Vög. Afr.* iii. p. 161 (1904).

Adult female. Like the adult male of *P. phænicoptera* in the colouring of the bill, head, neck, body, tail, legs and feet, but differs in the wing having the outer edges of the feathers deep yellow. Total length 3·8 inches, culmen 0·45, wing 2·2, tail 1·4, tarsus 0·6. ♀, 26. 2. 72. Abokobi (Shelley).

Adult male. Differs from the female in having the forehead, sides of head, chin and upper throat crimson-shaded scarlet, and the centre of the crown mottled with red ends to the feathers; the pale bars on the breast and under tail-coverts are narrower. Total length 4·4 inches, culmen 0·45, wing 2·2, tail 1·6, tarsus 0·6. Type, *Fantee* (Higgins).

The Black-billed Yellow-winged *Pytelia* ranges from the Gold Coast to the Niger.

In the British Museum there are: the type discovered by

Higgins in Fantee; a female specimen I shot at Abokobi, which is situated in the forest, at the base of the Aquapim Mountains and close to the edge of the Accra Plain; another hen from Gambaga (Northcott), and a male from Loko on the Niger (Forbes). The species has also been obtained in Togoland at Krachi (Zech) and Bismarckburg (Büttner).

Pytelia afra.

- Fringillaria afra*, Gm. S. N. i. p. 905 (1788).
Pytelia afra, Sharpe, Cat. B. M. xiii. p. 302 (1890); Butler, Foreign Finches in Captivity, p. 147, pl. 29, fig. 1 (1894); Shelley, B. Afr. I. No. 439 (1896); Reichen. Vög. Afr. iii. p. 162 (1904).
Pytelia cinereigula, Cab. Orn. Centralbl. 1877, p. 182; id. J. f. O. 1878, p. 101 Zanzibar, Mombasa.
Pytelia wieneri, Russ, Gefied. Welt. 1877, p. 317; Forbes, P. Z. S. 1880, p. 476, pl. 47, fig. 2; Dubois, Bull. Mus. H. N. Belg. 1886, p. 149 Tanganyika.
 "Pytelia pyropteryx, Böhm," Shalow, J. f. O. 1884, pp. 177, 178.

Male. Similar to *P. hypogrammica*, but differs in the bill being red; body both above and below shaded with chrome yellow; more white on the under parts, the white bars broader and the centre of the abdomen uniform white. Iris brown, bill and legs red. Total length 4.1 inches, culmen 0.45, wing 2.35, tail 1.5, tarsus 0.6. Kassongo (Bohndorff).

Female. Similar in plumage to the male, from which it differs in having no red on the head; upper parts browner, with only a slight yellow shade on the mantle; sides of head, chin and upper throat greyish ash, the latter with obscure narrow buff bars; whitish bars on the body broader. "Iris light brown; bill and legs dusky." Total length 4.1 inches, culmen 0.45, wing 2.35, tail 1.5, tarsus 0.6. ♂, 12. 1. 99. Chercher Lake (Lovat).

The Grey-necked Yellow-backed *Pytelia* ranges from the Loango Coast into Benguela, and in East Africa from Nyasaland to Southern Abyssinia.

In West Africa, the most northern known range for the species is the Loango Coast. Here Lucan and Petit have both collected specimens at Landana. Along the banks of the

Congo River Bohndorff met with it at Manyango and Kassongo. In Benguela, according to Anchieta, it is known to the natives of Galanga as the "Cossocia," and at the Capangombe River as the "Kabalacaxungo," and I find no mention of it from further south.

In Eastern Africa it is not uncommon in Nyasaland, where specimens have been collected at Zomba and Fort Lister by Mr. A. Whyte, and at Songwe and Karungu by Sir Alfred Sharpe. Storms met with it on the western side of Lake Tanganyika, and in German East Africa Böhm procured a specimen at the Lufuku River, which he called in his notebook *P. pyroplūterya*. There are, in the British Museum, specimens from Dar-es-Salaam, Mamboio and Lamu, collected by Sir John Kirk. At Zanzibar Fischer met with the species in parties of four to six, and found them breeding in the orange-trees. The nest resembled that of *Spermestes scutatus*. At Mombasa, Hildebrandt procured the type of *P. cinereigula*, and at Kaden, in Kavirondo, Mr. Oscar Neumann obtained a specimen. In South Abyssinia Lord Lovat met with it at Lake Chercher and at Fayambiro, which is the most northern range known for the species.

Pytelia citerior. (Pl. 34, fig. 2.)

Pytelia citerior, Strickl. Contr. Orn. 1852, p. 151; Shelley, B. Afr. I. No. 440 (1896); Reichen. Vög. Afr. iii. p. 165 (1904).

Zonogastris citerior, Sharpe, Cat. B. M. xiii. p. 299 (1890 pt.) *Senegambia*; Reichen. J. f. O. 1891, p. 389; 1902, p. 37 *Togo*.

Pytelia melba (non Linn.), Reichen. J. f. O. 1877, p. 3 *Bonny, Old Calabar*.

Subspecies a.

Pytelia jessei, Shelley, Bull. B. O. C. xiii. p. 76 (1903) *Anseba R.*

Zonogastris citerior, Sharpe, Cat. B. M. xiii. p. 299 (1890 pt.) *Abyssinia*.

Adult male. Forehead, sides of head, chin and upper third of throat bright scarlet; crown, back and sides of neck ashy grey; mantle, middle back and wings uniform olive-tinted yellow, with the inner portion of the quills brown; upper tail-coverts crimson-shaded scarlet; tail black strongly washed on the outer webs of the feathers with crimson; under wing-coverts white, with a few brown bars and the pinion shaded with yellow, and occasionally one or two scarlet feathers; inner edges of the quills buff; remaining two-thirds of the throat and the crop bright yellow, passing into white on the breast; crop obscurely, and the chest and sides of the abdomen sharply, barred with dusky brown; thighs and under tail-coverts entirely white. "Iris, tarsi and feet light brown; bill dull red" (Witherby). Total length 4.6 inches, culmen 0.45, wing 2.2, tail 1.8, tarsus 0.6. ♂, St. Louis (Laglaise).

Adult female. Differs from the male in having no red or yellow on the head and throat; forehead ashy brown like the crown, sides of head paler ash; chin and throat white, with narrow ashy brown bars most strongly marked on the lower half, where they are as broad as the alternate bars of white; the dark bars on the body are paler, slightly broader, and more confined to the sides of the body. Wing 2.3. Senegambia (Whiteley).

Subspecies, Pytelia jessci.

Distinguished from *P. citerior* by the white on the feathers towards the crop inclining to rounded spots in full plumaged males, in the breast being more strongly barred in both sexes, and in the under tail-coverts generally showing traces of bars. Wing 2.3. ♂, 27.7.68, Anseba (Jesse); ♀, 4.2.68, Annesley Bay (Blanford).

The Senegal Yellow-throated *Pytelia* ranges from the Senegal River to Old Calabar, eastward to the Nile, and is represented in Northern Abyssinia by an extremely nearly allied subspecies, *P. jessci*.

Of the typical form there are, in the British Museum, three adult males and a female from Senegambia, including one obtained by Laglaise at St. Louis; also a cock and two hens from the Nile. The type is one of Verreaux's specimens from Casamance, and Beauduin procured the species at Bissao. In Togoland it has been met with by Dr. Büttner at Bismarckburg, and to this species probably belong the "*P. melba*," recorded in Falkenstein's collection from Bonny and Old Calabar.

In the British Museum there are two female specimens, one from Khartoum and the other from El-Dueim, which I refer to this form, and a full plumaged male from Shebesha in the same district, obtained by Mr. Witherby, who writes: "Wherever the Sont-trees were thick enough to form a wood these birds were generally to be found." Mr. A. L. Butler has shown me a typically coloured specimen he shot January 2, 1903, at Fatasha, twenty miles west of Omdurman, and he writes: "Common in the Sont-trees round Fatasha and breeding there in January. Its call-note is a long plaintive whistle. Capt. Dunn procured the species at the Habeish Well in West Kordofan. I also found it abundant in the thorny bush round Gedaref in April and May, when they were just getting the red feathers on the face and were in full plumage by June. At Om Muttra Meila (north of Rahad) they were plentiful when I camped there, January 7 and 8, hopping freely about close to my tent."

P. jessei is represented in the British Museum by three males collected by Mr. Jesse at the Anseba Valley, Bejook and Rairo, and a female from Annesley Bay obtained by Dr. Blanford, who writes: "Occasionally met with near the coast and also in the Anseba Valley up to 4,000 or 4,500 feet above the sea." The specimen shot by Lord Lovat at the Blue Nile is in immature plumage.

According to Heuglin, the species inhabits the warmer parts of North-east Africa, the Samhar coasts, Bogos, the southern parts of Nubia and Takah, the Blue and White Nile and Kordofan. They were generally met with singly or in pairs frequenting clumps of trees and bushes and hopping to and fro from the lower branches and the ground; they were never found among rocks and rarely in the open grass country.

Pytelia melba.

- Fringilla melba*, Linn. S. N. (x.) p. 180 (1758); (xii.) i. p. 319 (1766).
Pytelia melba, Shelley, B. Afr. I. No. 441 (1896); Reichen. Vög. Afr. iii. p. 163 (1904).
Zonogastris melba, Dubois, Mus. H. N. Belg. 1886, p. 149 *Tanganyika*; Sharpe, Cat. B. M. xiii. p. 296 (1890).
Fringilla speciosa, Bodd. Tabl. Pl. Enl. p. 12 (1783).
Fringilla elegans, Gm. S. N. ii. p. 912 (1788).

Subspecies a.

- Pytelia kirki*, Shelley, Bull. B. O. C. xiii. p. 76 (1903) *Lamu*.
Zonogastris melba, pt. Jackson, Ibis, 1899, p. 606 *Kibwesi*.
Pytelia melba, pt. Reichen. Vög. Afr. iii. p. 163 (1904).

Subspecies b.

- Zonogastris soudanensis*, Sharpe, Cat. B. M. xiii. p. 298 (1890) *Keren, Khartoum*.
Pytelia soudanensis, Shelley, B. Afr. I. No. 442 (1896).
Pytelia melba soudanensis, Reichen. Vög. Afr. iii. p. 164 (1904).
Zonogastris melba affinis, Elliot, Field Columb. Mus. Orn. i. No. 2, p. 24 (1897) *Somali*.
Pytelia affinis, Grant, Ibis, 1904, p. 258 *Danakil*.
Pytelia melba, pt. Jackson, Ibis, 1899, p. 606 *Njemps*.

Adult male. Similar to *P. citerior*, from which it differs in having more red on the throat; white portion of feathers towards the crop inclining to round twin-spots; the blackish and white bars on the body of about equal amount. "Bill crimson; iris red; legs and feet light brown" (Alexander). Total length 4.6 inches, culmen 0.5, wing 2.25, tail 1.9, tarsus 0.65. Transvaal (T. Ayres).

Adult female. Similar to that *P. citerior*, but differs in the chin and throat being uniform greyish ash. "Bill crimson; iris red; legs dark brown" (T. E. Buckley). Wing 2.3. Transvaal (T. Ayres).

Young male. No yellow on the plumage; crown, back and wings ashy brown; upper tail-coverts and outer edges of tail-feathers red; sides of head and the under parts pale ashy brown, fading into white on centre of abdomen; a few scarlet feathers on the throat; breast with a few blackish feathers with broad white bands inclining to twin-spots on front of chest. ♂, 29. 7. 66. Otjimbingue (Andersson).

Subspecies a. P. kirki.

Differs from the South African form in having the breast paler; the dark bars browner and confined to the front and sides of the breast; under tail-coverts entirely uniform sandy buff. Wing 2.25. ♂, Lamu (Kirk).

Subspecies b. P. soudanensis.

Most similar to the South African bird, but differs from both of the former ones in having on the under tail-coverts narrow, more or less distinct, brown bars. "Bill and iris red; feet pale grey." Wing 2.25. Lado (Emin).

The Melba Pytelia ranges from Loango and the Congo into Damaraland on the west, and eastward from Natal to the Equator.

It has been obtained in Loango, at Chinchonxo (Falkenstein), and at Landana (Petit); on the Upper Congo at Ujiji (Bohndorff); in Angola at Malandje (Mechow). In the British Museum there are two full plumaged males from the Quanza River, and one from Benguela, procured by Mr. Monteiro, who also met with it at Loanda, Katumbella and Dombe, where he found it "called by the Portuguese 'Marachao,' and much esteemed as a cage-bird on account of its marvellously sweet song"; according to Anchieta it is known to the natives as the "Maracaxongo" in the Quissange district, and as the "Kangungo" at Biballa; it has also been recorded from Humpata (Kellen). Andersson writes: "This Finch is found sparingly in Damara and Great Namaqualand, and usually occurs in pairs; its favourite resort is low bush and old abandoned village fences, whence the Damaras call it the 'Kraal Bird.' Its food consists of insects." They live generally in pairs in the thick bush near the ground and are not shy.

I do not find it recorded from Cape Colony; but it is well represented in the British Museum by specimens from Natal, the Transvaal, Bamangwato, Matabele, Zambesi and Nyasaland. The species has been met with also at Eschowe in Zululand by the Messrs. Woodward, and at Inhambani by Peters.

At the Zambesi Mr. Boyd Alexander found the species

“locally distributed, the male sex predominating. In September the young were abroad. On one occasion, September 8, we observed a pair of birds feeding four young ones perched in a row on a branch, and they were by no means shy, allowing of a close approach. The adults had then commenced to moult and were not in good plumage again till the middle of January. In the males the colouration of the plumage varies considerably in intensity. The scarlet of the rump and tail is very conspicuous in flight.”

In the Shiré district, according to Mr. Percival, it is rare and always found in pairs; an adult male he procured here at Ruo River, in February, 1899, and now in the British Museum, has traces of bars on the under tail-coverts as well developed as in at least one specimen of *P. soudanensis*. Mr. Whyte obtained a single specimen in Nyasaland at Tshiroma.

The only specimen from East Africa, in the British Museum, is the type of *P. kirki*, which differs far more than *P. soudanensis* does from the typical *P. melba*; but Dr. Reichenow refers to *P. melba* all the specimens from Cape Delgado (Cardosa), Malangali (Marwitz), Kionga (Stuhlmann), Kakoma and Karema (Böhm), Dar-es-Salaam (Buxton), Kibiro, Nyanglu and Ugogo (Emin), Usegua, Massa, Nguruka, Pare, Kagehi and Lamu (Fischer), Ndi (Hildebrandt), Lamu (Kirk), Manda⁷ Island, Kibwesi and Njemps (Jackson), Makindos (Ansorge), Kwa Kissero and Kwa Kitoto (Neumann).

When I described *P. kirki*, I expected that it would prove to be the East African representative of *P. melba*, between Lake Nyassa and the Equator.

It is, however, still known to me only by the type, and two specimens from Southern Ukamba. Regarding the latter, Mr. Jackson writes: “Nos. 72, 73, ♂ ad. Kibwesi, April 10, 1892. Iris hazel, with crimson tint; bill bright red; feet

bluish flesh colour. No. 73 was shot as it left its nest, which was built of dry grass very roughly put together, with no extra lining, and placed in a low stunted bush, about three feet from the ground. The egg is pure white. The species is fairly plentiful throughout the country." All the specimens from other localities I have seen in Mr. Jackson's collection belong to *P. soudanensis*.

The Soudanese *Pytelia* ranges over North-east Africa from the neighbourhood of the Equator to 16° N. lat.

This bird is represented in the British Museum from Manda Island (Jackson), Lado and Kibiro (Emin), Lake Stefanie (Donaldson-Smith), Shibili (Gillett), Aruweina (Pease), Danakil (Degan), Keren (Esler), and the type from Kordofan. I have also found this form represented in Mr. Jackson's collection from Lake Baringo, Uganda, and the Albert Nyanza. In one of his specimens, labelled "Butiaba, ♂," the barring on the under tail-coverts is scarcely traceable, not being more strongly developed than in Mr. Percival's male from the Shiré district; but this is the only specimen I have seen from north of the Equator, in which the characteristic bars on the under tail-coverts have not been fairly distinct. To this subspecies should be referred *Zonogastris melba affinis*, Elliot, and I doubt the specimens referred to *P. melba* by Dr. Reichenow from the northern parts of its range belonging to the typical race.

Genus XVI. CRYPTOSPIZA.

Bill stout, shorter than the head, as deep as broad at the nostrils; culmen rounded and moderately curved; cutting edges of upper mandible slightly festooned near the gape; nostrils basal and hidden by the frontal feathers. Wing rounded; primaries 1, small, narrow, and sharply pointed; 2, entire, shorter than 7. Tail fan-shaped, shorter than the wing. Tarsus moderate, toes and claws rather long and slender; outstretched feet reach

beyond the end of the tail. Plumage with some red on the wings, rump and upper tail-coverts; tail entirely black as in *Nigrita*.

Type.

Cryptospiza, Salvad. Ann. Mus. Genov. 1884, p. 180 . . . *C. reichenowi*.

The genus is confined to Tropical Africa, and comprises five species.

KEY TO THE SPECIES.

- a.* Flanks with bright crimson; lower mandible blackish like the upper one.
- a*¹. No greyish black on the under parts.
- a*². Under parts olive green; males only, with sometimes a patch of red on the sides of the head.
- a*³. Under tail-coverts tinted with red *salvadorii*.
- b*³. No red on under tail-coverts *reichenowi*.
- b*². Under parts brown, with scarcely any olive shade . . . *australis*.
- b*¹. Under parts greyish black *jacksoni*.
- b.* Flanks cinnamon; lower mandible red *shelleyi*.

Cryptospiza salvadorii.

Cryptospiza salvadorii, Reichen. J. f. O. 1892, pp. 187, 221 *Siotalit*; Shelley, B. Afr. I. No. 379 (1896); Reichen. Vög. Afr. iii. p. 174 (1904).

Type. Head, neck and under parts dusky olive; throat yellower; back, upper tail-coverts, wing-coverts and edges of the inner secondaries crimson; sides of body washed with crimson; under tail-coverts slightly tinted with red; under wing-coverts dull yellowish; tail black. "Iris hazel; bill black; tarsi and feet reddish; eyelids bare and red." Total length 4.1 inches, culmen 0.4, wing 2.3, tail 1.7, tarsus 0.7. ♂, 23. 9. 79. *Siotalit* (Antinori).

Female. Similar to the male in plumage, but with the eyelids dusky (Antinori).

Salvadori's Crimson-wing inhabits Eastern Africa between 8° S. lat. and 10° N. lat.

In its most southern range the species has been met with by Dr. Stuhlmann at Uluguru. Antinori discovered the type at *Siotalit* in Shoa, and remarks that the sexes are distinguishable in colouring only by the eyelids, which are bright red in

the males, and dusky in the females. Dr. Reichenow further records it from Kikuyu, and doubts *C. australis* from Nyasaland being distinct from *C. salvadorii*; but as that has not been proved to be the case, I have retained the former as a separate species.

Cryptospiza reichenowi.

Pytelia reichenowi, Hartl. Ibis, 1874, p. 166 *Bondongo*; Reichen. J. f. O. 1875, p. 41, pl. 2, fig. 1 *Camaroons*.

Cryptospiza reichenowi, Sharpe, Cat. B. M. xiii. p. 254; Shelley, B. Afr. I. No. 378 (1896); Reichen. Vög. Afr. iii. p. 174 (1904).

Cryptospiza ocularis, Sharpe, Bull. B. O. C. xiii. p. 8 (1902) *Ruwenzori*.

Cryptospiza elizæ, Alexander, Bull. B. O. C. xiii. p. 38 (1902) *Fernando Po*.

Adult male. Head and neck olive green, paler and yellower on the chin and throat; a large patch of deep scarlet surrounds the eye and extends to the side of the bill; back, scapulars and upper tail-coverts crimson; wings and tail blackish brown, with some edges to the inner coverts and inner secondaries crimson, like the back; breast, thighs and under tail-coverts dusky olive, paler and yellower down the centre of the chest; flanks crimson. "Iris black; bill slaty black; feet brown" (Alexander). Total length 4.4 inches, culmen 0.45, wing 2.15, tail 1.7, tarsus 0.65. ♂, 10. 2. 02. Ruwenzori (Jackson).

Adult female. Differs in having no red on the side of the head, which is pale olive, fading into buff in front of the eyes. Wing 2.1. Camaroons (Preuss).

Reichenow's Crimson-wing ranges from Fernando Po through Camaroons to the Ruwenzori Mountains.

The occurrence of the species in Fernando Po was first made known by Mr. Boyd Alexander, who procured, near Bakaki, at an elevation of 4,000 feet, the type of *C. elizæ*, an adult male, and two immature males, "similar to the adult, but lacking the red round the eyes and on the lores, the latter being buffish brown, while the carmine red on the back, rump,

and upper tail-coverts is less pronounced. Legs and feet whitish brown."

In Camaroons, the type, a female, was discovered by Dr. Reichenow at Bondongo, and Dr. Preuss obtained an adult male at Buea.

In the Ruwenzori range of mountains Mr. Jackson procured a full plumage male, which was made the type of *C. ocularis*, Dr. Sharpe believing the red patch in proximity to the eye to be a specific character, but this has been proved to be only a distinguishing character of the male in full plumage.

Cryptospiza australis.

Cryptospiza australis, Shelley, Ibis, 1896, p. 184 *Milanji*; 1897, p. 529 *Masuku*; 1898, p. 554 *Chiradzulu*.

Cryptospiza reichenowi (non Hartl.), Shelley, Ibis, 1893, p. 26; 1894, p. 471 *Milanji*.

Type. General plumage dark brown, with a very faint olive shade, under parts generally slightly paler; tail entirely brownish black; rump, upper tail-coverts, and broad edges to the outer webs of the four innermost secondaries, bright crimson; remainder of the back, the ends of the greater wing-coverts, and the flanks are slightly washed or mottled with crimson. Iris brown; bill black; tarsi and feet dark brown. Total length 4·4 inches, culmen 0·45, wing 2·2, tail 1·8, tarsus 0·7.

In one specimen there are a few minute crimson feathers at the gape.

The Southern Crimson-wing inhabits British Central Africa.

Mr. Alexander Whyte discovered the type in the Shiré highlands, where he met with the species on the Milanji Plateau and further north at Kombi on the Masuku range at an elevation of 7,000 feet. Other specimens have been procured by Sir Alfred Sharpe on Chiradzulu, a high mountain between Zomba and Blantire. In the British Museum there are five of these specimens collected in June, July and

November, one is sexed as male, and three others females by Sir Alfred Sharpe, and I cannot detect any seasonal or sexual difference in their plumage.

Cryptospiza jacksoni. (Pl. 35, fig. 2.)

Cryptospiza jacksoni, Sharpe, Bull. B. O. C. xiii. p. 8 (1902) *Ruwenzori* ; Reichen. Vög. Afr. iii. p. 175 (1904).

Type. General plumage crimson and greyish black. Forehead, crown, sides of head, sides of upper neck, upper tail-coverts, broad outer edges to the secondaries, broad ends to the median wing-coverts, and broad ends to some of the feathers of the flanks crimson; nape, neck, chin, throat, most of breast, thighs and the under tail-coverts greyish black; remainder of the wings and the entire tail dusky black. "Iris brown; bill, tarsi and feet black." Total length 4.5 inches, culmen 0.45, wing 2.35, tail 1.75, tarsus 0.9. ♂, 10. 2. 02. Ruwenzori (Jackson).

Jackson's Crimson-wing inhabits the Ruwenzori Mountains of Equatorial Central Africa.

Mr. Jackson, who discovered the type in the Ruwenzori Mountains, obtained three other specimens there, and no doubt he will shortly publish some notes on the habits of this handsome bird.

Cryptospiza shelleyi. (Pl. 35, fig. 3.)

Cryptospiza shelleyi, Sharpe, Bull. B. O. C. xiii. p. 21 (1902) *Ruwenzori* ; Reichen. Vög. Afr. iii. p. 175 (1904).

Male. Forehead and crown, as well as the back and sides of the neck, olive green; back, scapulars and upper tail-coverts crimson; wings and tail blackish brown; sides of head slightly paler olive than the crown and with a rufous tinge in front; chin, throat and centre of chest paler yellowish olive, gradually shading into cinnamon on the sides of the chest, and into dusky black on the abdomen, thighs, under tail-coverts and sides of the rump. "Iris brown; bill with the upper mandible blackish and the lower one red; legs dark brown." Total length 5.1 inches, culmen 0.5, wing 2.5, tail 2.1, tarsus 0.85. ♂, 22. 2. 02. Ruwenzori (Jackson).



1. *Pyrenestes minor*.
2. *Cryptospiza jacksoni*. 3. *C. shelleyi*.



Pyrenestes sanguineus.

Pyrenestes sanguineus, Swains. B. W. Afr. i. p. 156, pl. 9 (1837).

Pyrenestes ostrinus (non Vieill.), Sharpe, Cat. B. M. xiii. p. 252 (1890 pt. ♀) *Senegambia*; *Salvad. Ann. Mus. Genov.* 1901, p. 776, *Bulama Isl.*

Pyrenestes personatus, Du Bus, Bull. Acad. Brux. xxii. p. 151 (1855) *Senegal.*

Adult. Head, neck, lower back, upper tail-coverts, front and sides of the breast glossy crimson; upper surface of tail very strongly washed with crimson; remainder of the plumage brown, with a shade of red near the under tail-coverts. Iris brown; bill glossy blackish blue; tarsi and feet dark brown. Total length 6 inches, culmen 0·7, wing 2·8, tail 2·4, tarsus 0·8. Gambia River.

Swainson's Notch-billed Weaver ranges from Senegambia to Sierra Leone.

The type of *P. personatus* is in the Brussels Museum, labelled "Senegal." In the British Museum there are four specimens, all from the Gambia, and I have not seen any other examples of this large species, but believe the type came from Sierra Leone, for Hartlaub records a specimen from that locality in Swainson's collection.

On the island of Bulama, Fea procured two males and a female all in the brown plumage which caused Count Salvadori to express his doubt as to their belonging to the same species as *P. ostrinus* (Vieill.).

Pyrenestes coccineus

Pyrenestes coccineus, Cass. Proc. Philad. Acad. 1848, p. 67 *Sierra Leone, Monrovia*; id. Journ. Philad. Acad. i. p. 242, pl. 31, fig. 2 (1848); Sharpe, Cat. B. M. xiii. p. 253 (1890 pt.); Shelley, B. Afr. I. No. 357 (1896).

Adult male. Rather pale chocolate brown, with entire head, rump, upper tail-coverts, throat, front and sides of breast glossy crimson; upper

surface of tail dark crimson with a brownish tinge. "Iris dark crimson; eyelids, with the portion above and below the eye pure white; bill glossy blue black; tarsi, feet and claws brownish flesh-colour." Total length 5 inches, culmen 0.5, wing 2.45, tail 1.9, tarsus 0.7. Sierra Leone (Kemp).

Adult female. Differs in having the nape and back of neck brown, the former slightly tinted with red; the red not extending below the centre of the crop, and the flanks only slightly washed with that colour. Wing 2.4. Sierra Leone (Kemp).

Immature. More olive brown, with the red duller and confined to the upper tail-coverts and tail. Sierra Leone (Kemp).

Cassin's Notch-billed Weaver inhabits Sierra Leone and Liberia.

When Cassin first named the species he had several examples from Sierra Leone and Monrovia, and evidently figured an adult male. Mr. Kemp has recently collected a series of sixteen specimens from Rotifunk (October), Jambamah and Bo (August and September), proving that this species is distinct from the larger and more northern form, *P. sanguineus*, which it closely resembles in the brown colouring of both sexes, and differs from *P. ostrinus* chiefly in the brown colouring of the males. He writes: "In habits, these birds closely resemble *Lagonosticta polionota*, and frequent the same swamps and farms as *Spermospiza hæmatina*. They are extremely wily, and in moving from one place to another rise high in the air and fly rapidly, with many twists and undulations, and are difficult to approach within gun-shot; but by placing snares among the young rice, in localities they were known to frequent, I obtained the present species and *Spermospiza hæmatina*, in about equal numbers. A hen obtained on August 22 contained an egg, from which I conclude they breed here in August and September."

In the month of October Mr. Büttikofer found a colony of about ten nests, placed in a clump of trees growing in a marsh near Robertsport. The nests were very large and

consisted of a heap of dead reed-leaves, and were hidden in the forks amongst the thick foliage, at the height of about four feet. A narrow aperture, on one side of the nest, leads into the interior, which is lined with soft grass. The eggs, generally six in number, are pure white and measure 0.68 × 0.52. In one instance the fresh nest was built on the top of an old one.

He justly remarks, that the fact of his never having seen nor collected a male with black plumage, though he observed the colony during several days, and got a series of undoubted adult males, females and young specimens, is strongly in favour of *P. coccineus* being a good species. He afterwards collected seven specimens at Oldfield on the Mussurad River, and adult males at Shieffelinsville and Gallilee Mountain, but never saw one in the black plumage.

Pyrenestes ostrinus.

Loxia ostrina, Vieill. Ois. Chant. p. 79, pl. 48 (1805, *bad*).

Coccothraustes ostrinus, Vieill. Gal. Ois. p. 70, pl. 60 (1825, *good*).

Pyrenestes ostrinus, Sharpe, Cat. B. M. xiii. p. 252 (1890 pt.) *Niger*; Emin, J. f. O. 1894, p. 170; Kuschel, J. f. O. 1895, p. 336 *egg*; Shelley, B. Afr. I. No. 356 (1896); Reichen. J. f. O. 1897, p. 38 *Togo*; Nehr Korn, Kat. Eiers. p. 125 *egg*, *Chinchonzo*; Hartert, Nov. Zool. 1891, p. 341 *Niger*; Reichen. J. f. O. 1902, p. 36 *Togo*; id. Vög. Afr. iii. p. 106 (1904 pt.).

Pyrenestes coccineus (non Cass.), Bouvier, Cat. Ois. Marche, &c. p. 25 (1875) *Gaboon*; Sharpe and Bouvier, Bull. Soc. Z. France, 1878, p. 74 *Landana*; Sharpe, Cat. B. M. xiii. p. 253 (1890) *Gold Coast, Gaboon, Leopoldville, Tingasi*; Shelley, Ibis, 1890, p. 166 *Yambuya*; Reichen. J. f. O. 1890, p. 123 *Camaroons*; Oberholser, Pr. U.S. Mus. xxii. p. 17 *Camaroons*; Reichen. J. f. O. 1892, p. 45 *Sesse Isl.*

Pyrenestes personatus (non Du Bus), Reichen. J. f. O. 1875, p. 41 *Gaboon*; 1887, p. 305 *Leopoldville*; 1890, p. 123; 1896, p. 33 *Camaroons*.

Adult male. Head, neck, lower back, upper tail-coverts, edges of the tail-feathers, crop and sides of body uniform glossy crimson; upper surface

of tail very strongly washed with crimson; in front of the forehead an extremely narrow line of black, and the remainder of the plumage is black, with a faint brown tinge on the wings. "Iris chestnut brown; bill blue black; culmen basally greyish blue; eyelids black, with pale blue grey median spots on each; legs dark horn colour." Total length 5.6 inches, culmen 0.6, wing 2.85, tail 2.5, tarsus 0.9. ♂, 19. 11. 82. Shonga (W. A. Forbes).

Adult female. Differs chiefly in the parts which are black in the male being pale chocolate brown, and also in the nape as well as the back and sides of the neck being brown. "Iris dark yellowish carmine; eyelids white; feet light horn colour" (Zeuner). Total length 4.6 inches, culmen 0.5, wing 2.4, tail 1.9, tarsus 0.8. Gaboon (Verreaux).

Vieillot's Notch-billed Weaver ranges from the Gold Coast to Angola and the Victoria Nyanza.

Unlike the other known species of this genus, the present one varies considerably in size, in the strength, and even in the form of the bill, and the sexes are readily distinguishable by the plumage, which is black in the adult males where it is brown in the females. To prove that none of these characters are of specific value is difficult, but I believe this to be a fact, for the following reasons: The black and the brown plumaged birds, which I call males and females, have apparently the same distribution. In the British Museum only four of the specimens have been sexed by their collectors, these are all males and in the black plumage. Of these, by far the largest is Forbes's specimen from the Niger; in other males the measurements are: culmen 0.5 and 0.6, and the width of the bill varies to the same extent; wing 2.4 and 2.5; the former is a bird labelled "Fantee (Swanzy)," and the latter "Gaboon (Verr.)." The females measure: culmen 0.5 and 0.55; wing 2.3 and 2.65. The smaller of these is labelled "Gaboon (Verr. Sharpe Coll.)," and the larger one was procured for me by Mr. Kirby, on the Gold Coast near Accra.

The species appears to be scarce, but fairly evenly dis-

tributed throughout its range. In Ashantee Pel procured a specimen which Hartlaub refers to the black male form, and in the British Museum there is one black and three brown specimens, all unsexed. The latter vary considerably in size, but not at all in their colouring. In Togoland Mr. Baumann obtained a male in the black plumage.

The only specimen yet recorded from the Niger is the unusually large bird from Shongo, to which Forbes referred in his notebook: "Nov. 19. Down to palm-grove in morning. Got two new birds (*Pyronestes ostrinus*, ♂, and two *Ægialitis tricoloris*) in the rice-fields." The latter bird is *Oxyechus forbesi*.

In Camaroons Dr. Reichenow found apparently both sexes near the coast; Dr. Zeuner met with a flock in brown plumage, possibly the females with their young, at Baromi Station, and Mr. Bates has procured a small male in the black plumage at the Ja River. In Gaboon Du Chaillu collected specimens at the Moonda and Camma Rivers, and in Loango Falkenstein and Petit have both met with it. Along the Congo River Bohndorff obtained the two forms at Manyango and Leopoldville, and from Yambuya, on the Aruwimi, there are two males in the black plumage, collected by Jameson. Another black male, obtained by Emin at Tingasi, is now in the British Museum. The species has been obtained by Dr. Stuhlmann on the island of Sesse in Victoria Nyanza, which is the most eastern range known for these birds. They have also been recorded from Angola (Mechow).

It is strange how seldom the brown female specimens have been sexed by their collectors; also that the eggs of this species should be spotted, while they are pure unspotted white in *P. coccineus*, according to Mr. Büttikofer.

Both Mr. Kuschel and Mr. Nehr Korn describe the eggs of the present species as of a salmon colour with underlying

yellowish brown marks and clear reddish brown spots, and measuring 0.8×0.56 .

Pyrenestes minor. (Pl. 35, fig. 1.)

Pyrenestes minor, Shelley, Ibis, 1894, p. 20 *Zomba, Milanji*; id. B. Afr. I. No. 358 (1896); Reichen. Vög. Afr. iii. p. 107 (1904).

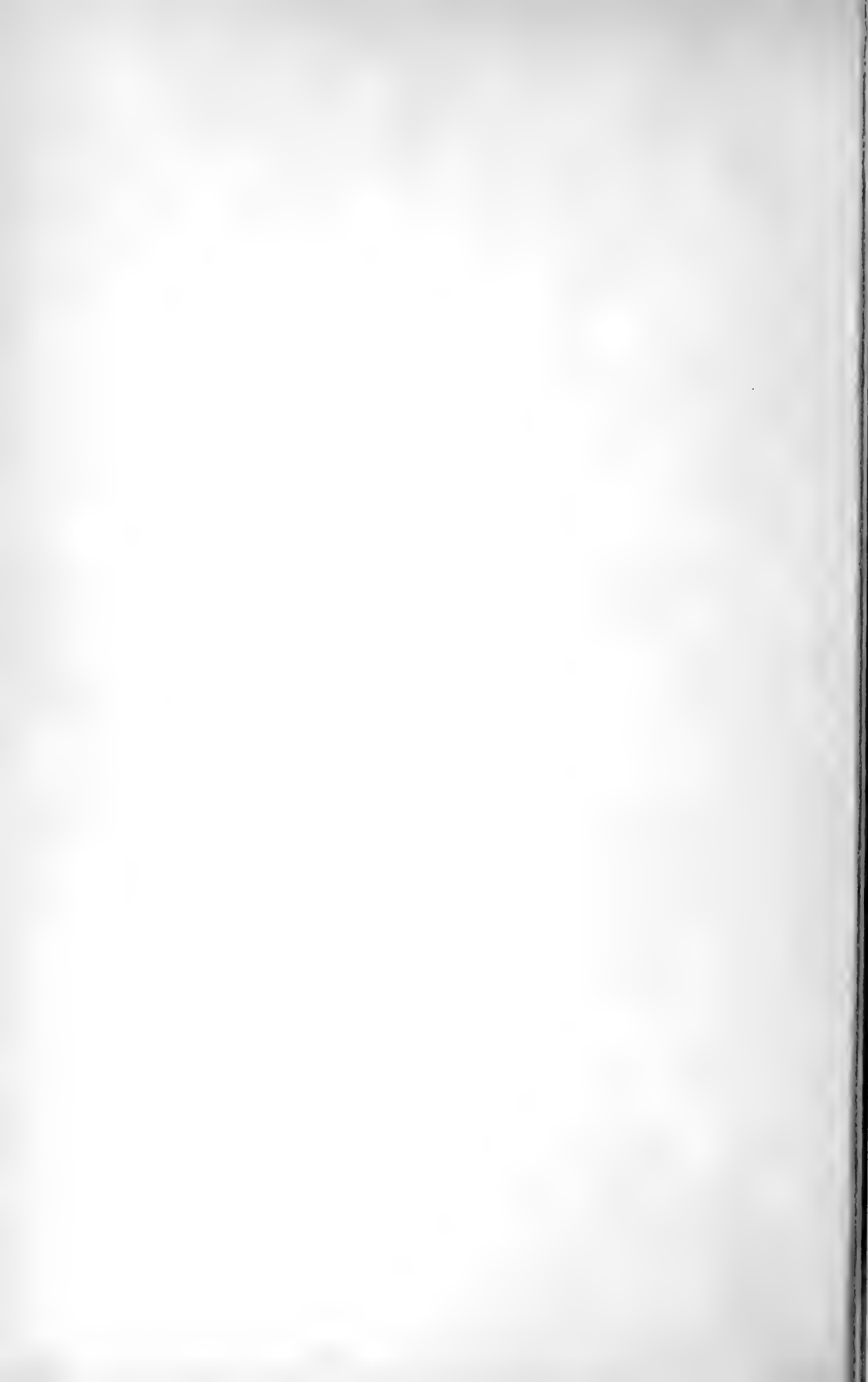
Type. General plumage earthy brown; wings rather darker; centre of breast slightly washed with buff; forehead, sides of head, chin, upper throat and the upper tail-coverts bright crimson; upper surface of the tail strongly washed with crimson; under wing-coverts brown with buff edges. Bill glossy blue black; tarsi and feet brown. Total length 5.2 inches, culmen 0.4, wing 2.3, tail 2.2, tarsus 0.7. ♀, 8. 92. Milanji Plain (A. Whyte).

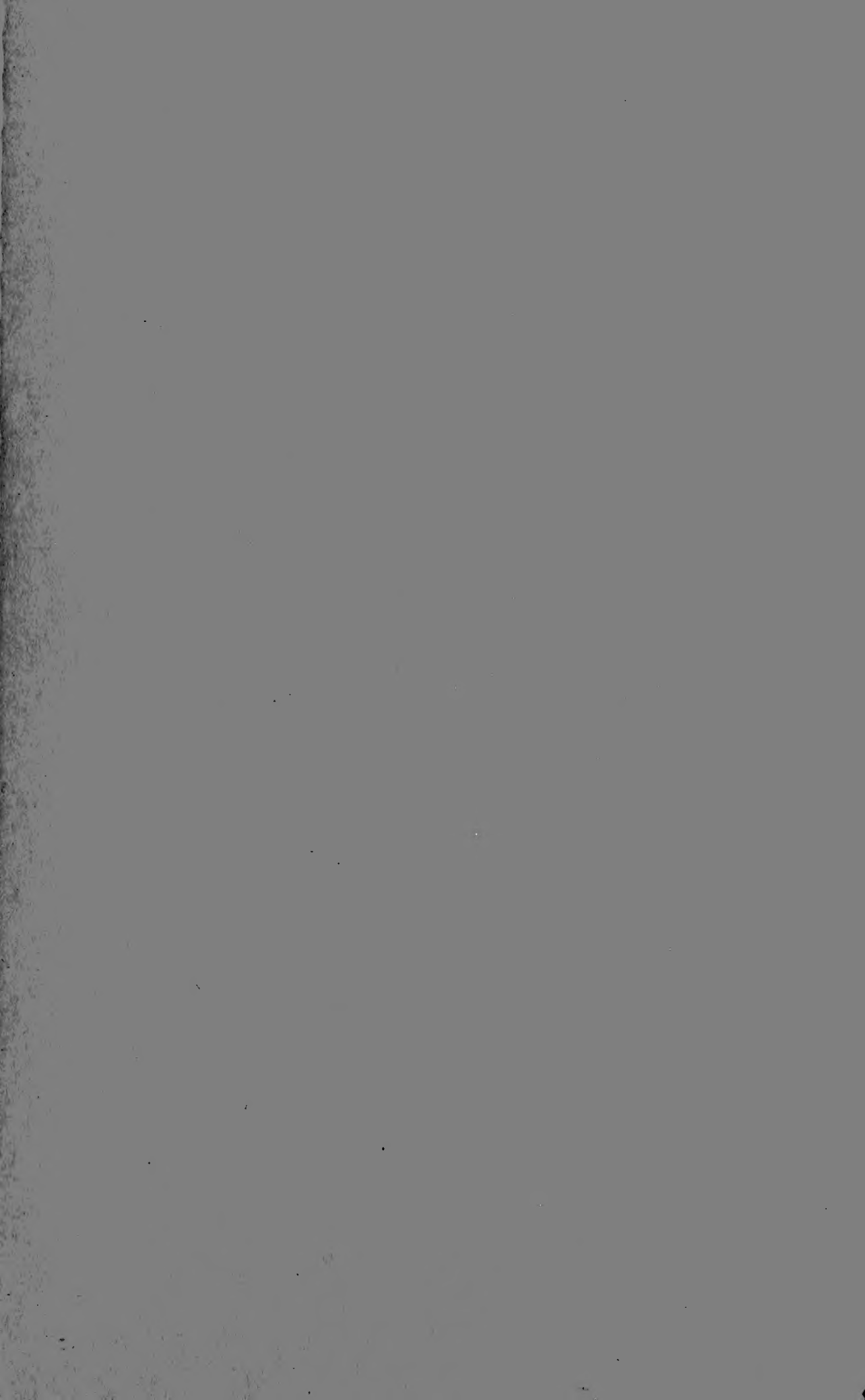
The Lesser Notch-billed Weaver inhabits the country between the Shiré River and Lake Shirwa.

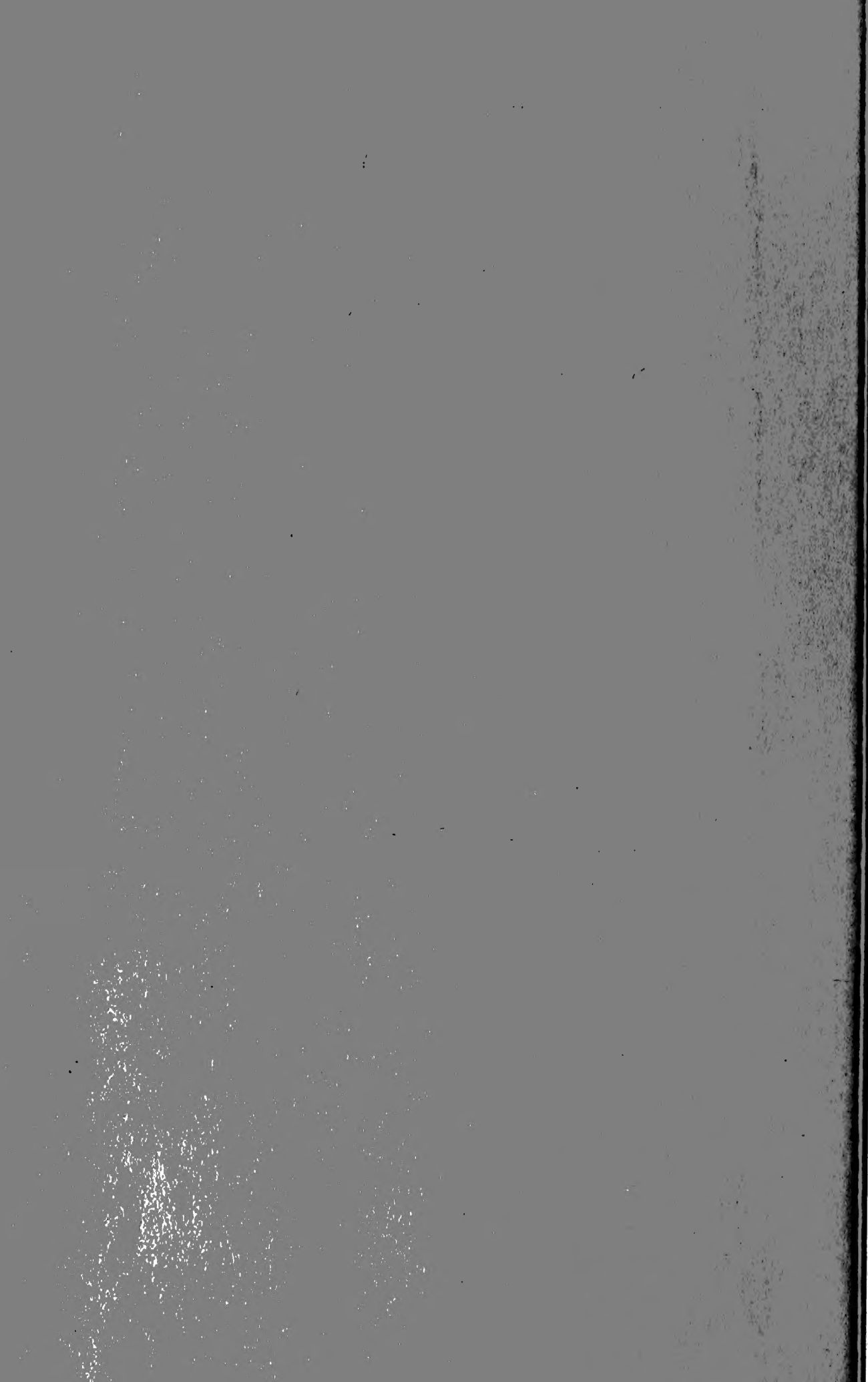
It is known at present only by the two specimens obtained by Mr. Alexander Whyte at Zomba and on Mount Milanji, between 15° and 16° S. lat.

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