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THE
BIRDS OF AFRICA,

COMPRISING ALL THE SPECIES WHICH OCCUR

IN THE

ETHIOPIAN REGION.

BY

G. E. SHELLEY, F.Z.S., F.R.G.S., &c.

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VOL. V.

PART I.

LONDON :

PUBLISHED FOR THE AUTHOR BY

R. H. PORTER, 7, PRINCES STREET, CAVENDISH SQUARE, W.

1906.



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Section IV. CORVI.

The members of this Section have the plumage of the young birds duller than that of the adults, sometimes more streaked or blotched, but never more barred, as in the *Lanii* or Shrikes, nor more spotted, as in the *Turdi* or Thrush group, and never brighter than the adults, as is the case in the *Silvæ* or Warblers. They differ from the *Fringillæ*, or Finches, in the form of the bill; from the *Alaudæ*, or Larks, in the back of the tarsus being plain, not scutellated, and the secondaries never reach to the tip of the wing; from the other four Sections they differ in their mode of feeding, often perching on the ground for that purpose and they are more omnivorous.

Flight powerful; wings pointed; bill and feet strong; generally gregarious; not migratory (*Oriolus galbula* excepted); sexes generally alike in plumage; size about that of a Thrush, excepting in the *Corvidæ*, the largest of which is the Raven.

Nest cup-shaped and placed among boughs or in holes. Eggs, generally five in a clutch, are uniform or spotted.

KEY TO THE FAMILIES.

- a. Tarsus short, never more than 1.1 inches and is not longer than the culmen, otherwise they are Thrush-like in form and size, with no metallic gloss. All the Ethiopian species have a considerable amount of yellow on the upper parts, head or neck, as well as upon the breast, and the bill is pale reddish brown in adults *Oriolidæ*.
- b. Tarsus comparatively longer. No yellow feathers on the upper parts, head or neck, which are generally strongly glossed; bill never pale reddish brown.
 - a¹. Rarely with any notch on the upper mandible; form and size generally more Thrush-like; tail of twelve feathers, square or graduated *Sturnidæ*.
 - b¹. A notch on the upper mandible near the end; size variable from that of a Thrush to that of a Raven; tail, when of twelve feathers is square or rounded and when of only ten feathers is generally graduated and longer than the wing. *Corvidæ*.

Family I. ORIOOLIDÆ.

Bill moderately strong, pale reddish brown in adults and generally black in young birds; a slight notch on the upper mandible near the tip; nostrils exposed; rictal-bristles obsolete. Wing of ten primaries; first primary more than half the length of the second one. Tail of twelve feathers, rounded and shorter than the wing. Tarsus rather short, not longer than the culmen.

Sexes often similar in plumage; young streaked. An Autumn moult only. Nest cup-shaped and suspended between small branches.

The family is confined to the Eastern Hemisphere and comprises some fifty species, of which eight are confined to the Ethiopian Region, and one, *O. galbula*, migrates into Europe to breed.

Genus ORIOLUS.

	<i>Type.</i>
Oriolus, Linn. S. N. i. p. 160 (1766)	<i>O. galbula.</i>
Galbulus, Bp. C. R. xxxviii. p. 535 (1854)	<i>O. galbula.</i>
Baruffius, Bp. t. c. p. 538.	<i>O. brachyrhynchus.</i>

KEY TO THE SPECIES.

- a.* Head mostly yellow or green, with no black on the crown.
 - a*¹. Head mostly yellow in adults; no bluish grey edges to the wing-feathers.
 - a*². Wings with no bright yellow edges to the feathers *galbula.*
 - b*². Wings with bright yellow edges to the feathers.
 - a*³. Outer tail-feathers black at the base *auratus.*
 - b*³. Outer tail-feathers almost entirely yellow *notatus.*
 - b*¹. Head entirely green in adults; some broad bluish grey edges to the wing-feathers *chlorocephalus.*
- b.* Head black, at least in adult males.
 - c*¹. Tail yellower, no black bases to the feathers *monachus.*
 - d*¹. Tail with black bases to the feathers.
 - c*². Breast golden yellow.
 - c*³. Primary coverts with white ends.
 - a*⁴. Larger, wing more than five inches; bill longer *larvatus.*
 - b*⁴. Smaller, wing less than five inches; bill slightly shorter *brachyrhynchus.*
 - d*³. Primary-coverts entirely black *nigripennis.*
 - d*². Breast yellowish white *crassirostris.*

Oriolus galbula.

Oriolus galbula, Linn. S. N. i. p. 160 (1766) *Europe*; Dresser, B. Eur. iii. p. 365, pl. 144 (1875); Sharpe, Cat. B. M. iii. p. 191 (1877); Shelley, B. Afr. I. No. 568 (1896); A. L. Butler, Ibis, 1905, p. 323 *Khartoum*.

Coracias oriolus, Linn. (x.) p. 107 (1758) *Europe*.

Oriolus oriolus, Reichen. Vög. Afr. ii. p. 654 (1903).

Adult male. General plumage bright golden yellow, with the wings and tail mostly black; in front of eye a broad black band; wing black above, with broad pale yellow ends to the primary coverts; quills with whitish terminal margins, broadest on the outer webs of some of the secondaries and a few of the larger quills have very imperfect white outer edges; under wing-coverts yellow; under surface of quills dusky ash, fading almost into white on their inner edges; tail, with the base and centre black, the yellow ends to the feathers rapidly increasing in extent towards the outer ones. Iris crimson; bill pale brownish red; feet grey. Total length 9.4 inches, culmen 1.0, wing 6.1, tail 3.6, tarsus 0.85. Bogos (Esler).

Adult female. Differs in having the wings and tail paler; upper parts shaded with olive; throat and breast white, shading into olive yellow on the sides and under tail-coverts, and with some blackish shaft-stripes; wings dusky brown, with a wash of olive yellow on the inner secondaries, greater-coverts and edges of the lesser-coverts; tail with the centre feathers olive and the dark portion of the others dusky olive extending nearly to the ends of the feathers.

Immature. Similar in plumage to the adult females, or, in the younger specimens, the wing-coverts have whitish terminal margins, the under parts more strongly striped and the tail more olive.

The European Golden Oriole breeds during its migration in Europe and Western Asia, and has been met with as far north as 60° N. lat. It ranges over the whole of Eastern and Southern Africa, and North-western Africa to as far south as Senegambia.

The greater portion of the specimens migrate from Africa in April, and return to that continent again in September, but some apparently remain in Tropical Africa throughout the year, for Dr. Hinde procured an example at Nairobi, on June 1, 1899. It has not been recorded from Western Africa,

between Senegambia and Damaraland, so it apparently migrates from the latter country and Cape Colony, through the eastern side of the continent, and according to Hartlaub (Vög. Madag., 1877, p. 159), has been met with on the island of Madagascar in October. When I was in Egypt these Orioles were first seen on April 20, and soon became plentiful in parties of five or six, all hurrying northward on their migration.

They are shy birds, and naturally keep to the thickest foliaged trees they meet with, so consequently are not easy to observe, but may be attracted into view by imitating their loud flute-like note, which has been compared to the words, "Who are you," which is an appropriate remark for these birds to make, as they are very wary and careful not to show themselves in dangerous company. Mr. Dresser gives good figures of the adult male and female (Birds of Europe, iii., p. 365, pl. 144) and writes: "It devours all sorts of insects that inhabit the woodlands, but is especially fond of the large green caterpillars which are found on the leaves of the trees. It also feeds largely on berries and fruit when in season, but is not more destructive in a garden than many other birds, and amply repays any mischief it may do by the number of noxious insects it kills. It is most partial to cherries, of all garden-fruit, but will also feed on currants, and especially on mulberries.

"In Germany, where I have several times found its nest, it commences nidification soon after its arrival in May, the place chosen being usually in a dense wood or grove, the nest being placed on the upper part of a tolerably small tree, and neatly suspended amongst the smaller branches. It is always placed in a fork of a small branch, the nest being basket-shaped, and neatly woven to the slender branches on each side, and is one of the most artistic structures amongst the nests of our

European birds. Both male and female co-operate in the construction of the nest. One I have before me is built in the fork of a slender oak branch, and is made of strips of pliable bark, straw, dried grass-bents, &c., closely and firmly constructed, and carefully twisted and woven round the branch. The outside is ornamented with strips of paper-like white birch bark; and the interior is lined with fine grass-bents. In size it measures 4 inches one way and $5\frac{1}{2}$ the other in outside diameter, the inside cup measuring $3-3\frac{1}{2}$ inches in diameter, and $2\frac{1}{2}$ inches in depth. As the nest is not built until the foliage is fully developed, it is by no means easy to find it."

The eggs, four or five in number, are laid in the latter part of May or early in June. They are glossy white, spotted with reddish brown, and measure about 1.2×0.85 .

Mr. A. L. Butler writes: "A very considerable immigration of Golden Orioles occurs at Khartoum at the beginning of September, when the lime and fig-trees are full of them, mostly immature birds. After this they pass on, and are comparatively scarce until March again. I have never heard them utter their beautiful flute-like notes in their winter quarters. From Halfa in the north their migration follows the Nile Valley up to Uganda, Gedaref is the most eastern point at which I have observed it."

Oriolus auratus.

- Oriolus auratus*, Vieill. N. D. xviii. p. 194 (1817) *Hab?*; Swains. B. W. Afr. ii. p. 33, pl. i. (1837); Sharpe, Cat. B. M. iii. p. 195 (1877); Shelley, B. Afr. I. No. 569 (1896); Reichen. Vög. Afr. ii. p. 655 (1903); Grant, Ibis, 1905, pp. 201, 202 *Uganda*; Neum. J. f. O. 1905, p. 232 *N. E. Afr.*
- Oriolus bicolor*, Licht. Verz. Doubl. p. 20 (1823) *Senegambia*.
- Oriolus chryseus*, Heugl. Syst. Uebers. p. 31 (1856) *N. E. Afr.*
- "*Oriolus icterus*, Würt." Heugl. J. f. O. 1867, p. 299 *N. E. Afr.*
- Le loriodor, Levaill. Ois. Afr. vi. p. 49, pl. 260 (1808).

Adult male. General plumage bright golden yellow; a broad black band from above the gape surrounds the eyes and includes the upper half of the ear-coverts; wing, with the quills and greater coverts black, the latter as well as the secondaries, with strongly marked bright yellow edges; primaries and primary-coverts, with narrow yellow or white terminal margins and an indication of a white outer margin to some of the primaries; under surface of quills dusky black with whitish inner margins; tail with the centre feathers and the entire base of all the others black, each feather with the end bright yellow, which colour increases in extent towards the outer ones. Iris red; bill pale brownish red; feet dusky grey. Total length 9.6 inches, culmen 1.15, wing 5.75, tail 3.6, tarsus 0.9. Gambia (Strachan).

Adult female. Differs from the adult male in its more olive colouring; black patch on sides of head more obscurely marked; dark portion of tail larger and extending on the outer webs of the feathers nearly to their ends and is washed with olive yellow most strongly towards the base.

Immature. Similar to the female, or, in younger specimens, with no trace of the dark mark on the side of head; throat and chest white streaked with black.

The Northern African Golden Oriole inhabits Northern Tropical Africa between about 4° and 18° N. lat.

This bird closely resembles our European Oriole in its general colouring, voice and habits, but may be readily distinguished by the olive yellow on the wing, the black band on the side of the head extending back behind the eye; and like all the other African members of the genus it is not of a migratory nature, and is generally to be met with in pairs, or accompanied by the brood after the nesting season.

The species has been recorded from many places along the Senegambian coast and from the Island of Bulama. Dr. Rendall, while at the Gambia, wrote: "Common on the mainland all the year round; occasionally stragglers seen on the island." It has not been recorded from Liberia, and is known to me from Fantee by one of Swanzy's specimens. Inland from Fantee, Captain W. Giffard obtained five examples at Gambaga from August to January, and Mr. Boyd Alexander, who met with it at the same place, writes:

“This Oriole is not found in the forest region. It is generally observed in pairs, frequenting open country, and is probably a resident in the Hinterland.” In Togoland specimens have been collected at many places and at all seasons. At the Niger, Thomson obtained a specimen at Abo, and Dr. Hartert a pair at Loko, and considered it to be rare in that district. I cannot trace the range further south on the West Coast, although the type was supposed to have been discovered in Angola by Perrein.

Specimens have been collected by Bohndorff at Sassa in the Niam Niam country, by Emin at Redjaf, Kiri, Mabero, Rimo and Wandu, and by Antinori in the Djur country.

According to Heuglin it is a resident in the warmer parts of North-east Africa, but does not range into Abyssinia. He met with it on the western slopes of the Amhara highlands on the Upper Rahab, at Galabat and at Fazogl.

Oriolus notatus.

Oriolus notatus, Peters, J. f. O. 1868, p. 132 *Tete*; Sharpe, Ibis, 1870, p. 218, pl. 7, fig. 2; id. Cat. B. M. iii. p. 196 (1877); Shelley, B. Afr. I. No. 570 (1896); Reichen, Vög. Afr. ii. p. 656 (1903).
Oriolus anderssoni, Bocage, Journ. Lisb. 1870, p. 342.

Adults. Very similar to *O. auratus*, from which it differs in the bill being slightly shorter and stouter, and in the colouring of the quills, primary-coverts and tail; quills with the yellow edges of the secondaries wide to the base of the feathers; primaries with stronger white margins; primary-coverts with broad yellow ends; tail bright yellow with the exception of the four centre feathers, which are black with golden ends and margins, the remainder of the black being almost confined to the basal portion of the shafts of the four pairs of outer feathers. Iris red; bill pale brownish red; feet dusky grey. Total length 9.0 and 9.8 inches, culmen 0.95 and 1.05, wing 5.5 and 5.6, tail 3.3, tarsus 0.9. Okovango R. (Andersson) and Kilimanjaro (Johnston).

Immature. Differ from the adults in having the dark patch on sides of head less distinctly marked; upper parts more olive; pale ends of primary

coverts narrower; tail mostly dusky olive, with the yellow of the outer webs confined to their ends, but the yellow extends further down on the inner web.

The yellow on the tail gradually increases in amount with age; first it expands on the inner webs and gradually extends over the external webs of the four outer pair of feathers, without their being shed; throat and centre of breast at first buff, with flanks yellow and streaked with black, gradually changing into uniform yellow. This gradual change is well shown by the following five specimens in the British Museum: *a*, Benguela (Monteiro); *b*, Karugwe, June (Whyte); *c*, Ikawa (A. Sharpe); *d*, Lake Shirwa, Aug. (A. Sharpe); *e*, Nyasaland (Whyte).

The Southern African Golden Oriole replaces *O. auratus* to the south of the Equator, and ranges over the whole of Eastern Africa to nearly as far south as the Limpopo and crosses the Continent into Western Africa from the Congo to Damaraland.

In West Africa this Oriole has been procured by Bohndorff at Kassongo and Kibondo in the Upper Congo district, by Storms during his expedition to Lake Tanganyika, and in Angola by Schutt and Mechow at Malandje and along the Kuango River. It is generally distributed over this part of the continent from the Congo to Damaraland, but never extends beyond the limit of Tropical South Africa, and is rarer to the south than to the north of the Cunene and Zambesi Rivers. Monteiro calls it abundant at Benguela, and in the Portuguese Possession it is known to the natives, according to Anchieta, by the many following names: the "Kimuxoco" at Biballa, the "Cupio" at Quillengues, the "Unguloyombia" at Caconda, the "Xirongo" or "Xirombo" at Quissange and Quindumbo, and as the "Dicole" at Humbe.

Andersson writes: "I have only obtained the adult of this splendid Oriole in Damaraland on a few occasions, and that always during the rainy season; the young, however, are frequently met with; and at the Okavango River the

species is more common than in Damaraland proper. The young birds are easily obtained, but the old are excessively shy and difficult to procure, as they always perch on the most elevated and conspicuous trees and retire into the densest parts of tangled brakes and thickets on the least approach of danger."

In the country between the Limpopo and Zambesi Rivers, Holub obtained the species at the Pandamatinka River to the south of the Victoria Falls of the Zambesi; Jameson and Ayres procured a specimen at the Ganyani River and record it as "shy, but not uncommon in Mashonaland." Mr. Guy Marshall writes from Mashonaland: "Not uncommon in the summer months, arriving about October. It is solitary in its habits, except for a short time after its arrival, when it remains in small flocks." He further remarks: "*O. notatus* undoubtedly breeds in Mashonaland, and young birds with mottled breasts are fairly plentiful during January and February."

The type of the species was discovered by Dr. Peters at Tete on the Zambesi, and there is one of Sir John Kirk's specimens from the same locality in the British Museum. From further up the Zambesi, Mr. Boyd Alexander writes: "Scattered individuals observed for the first time at Zumbo on December 12, frequenting the thick woods, and in company now and again with young birds. The adults were then in a moulting condition and were difficult to approach, their clear whistling note being more often heard." In this neighbourhood, according to M. Foa, it is known as the "Kondiomomo" (Oust. Bull. Mus. 1898, p. 60). The species is abundant and very generally distributed over Nyasaland, and, according to General W. H. Manning, it is called by the natives of Angoniland the "Hisundambawala."

It is apparently equally plentiful throughout German East

Africa, and according to Stuhlmannis, in common with the other Orioles, known to the natives of Usegua as the "Kubuiru."

In its more northern range it has been procured on Kilimanjaro (Johnston), in Taveita (Hunter), on Manda Island, and at Witu (Jackson), at Melinda and Lamu (Kirk), and at the Tana River (Fischer).

Oriolus chlorocephalus.

Oriolus chlorocephalus, Shelley, *Ibis*, 1896, p. 183, pl. 4 *Mount Chiradzulu*; Reichen. *Vög. Afr.* ii. p. 662 (1903).

Type. Entire head and throat uniform bright sage green; a broad collar, breast and under tail-coverts rich golden yellow; remainder of upper parts mostly olive green, a shade darker than the head; on the wings the green shades into blue grey on the outer webs of the greater and primary coverts and the quills, and, with the exception of the inner secondaries, the remainder of the quills are greyish black, with imperfect ashy inner margins; five outer pairs of tail-feathers with yellow ends rapidly increasing in breadth towards the outer feathers, remainder of these feathers have the shafts and portion of the inner webs black; under wing-coverts bright yellow, a few of the larger ones mottled with olive, and the outer greater series white with some dusky marks. Iris red; bill pale reddish brown; feet grey. Total length 10 inches, culmen 1.1, wing 5.3, tail 4.3, tarsus 1.0. ♀, Mount Chiradzulu (A. Whyte).

The Green-headed Oriole inhabits Eastern Africa between 5° and 15° S. lat.

The type was discovered by Mr. Alexander Whyte in July, 1895, when he visited Mount Chiradzulu, which is situated in the Shiré highlands between Blantyre and Zomba. The late Captain Sclater described Chiradzulu as "a striking mountain, rising to a level ridge about two miles long, which runs north and south to an elevation of nearly 5,000 feet. The upper slopes are well forested and watered by numerous small streams."

The Tring Museum has also received a fine pair of this beautiful and rare Oriole from Uguru, due west of Zanzibar Island.

Oriolus monachus.

Turdus monacha, Gm. S. N. ii. p. 824 (1788) *Abyssinia*.

Oriolus monachus, Sharpe, Cat. B. M. iii. p. 216; Shelley, B. Afr. I. No. 571 (1896); Reichen. Vög. Afr. ii. p. 657 (1903); Grant, Ibis, 1904, p. 256 *S. Abyssinia*; Neum. J. f. O. 1905, p. 232.

Oriolus meloxita, Rüpp. N. Wirb. Vög. p. 29, pl. 12, fig. 1 (1835) *Abyssinia*.

Oriolus meneliki, Blundell and Lovat, Bull. B. O. C. x. p. 19 (1899) *Burka*; Grant, Ibis, 1900, p. 122, pl. 2; Reichen. Vög. Afr. ii. p. 657 (1903).

Oriolus monachus permistus, Neum. O. M. 1905, p. 145 *Gadat*; id. J. f. O. 1905, pp. 233, 235.

The Nun Thrush, Lath. Gen. Syn. ii. p. 77 (1783).

Adult. Entire head, upper half of neck and the throat black; remainder of neck, the upper tail-coverts, breast, thigh and under tail-coverts golden yellow; the neck shading into a slightly more olive yellow tinge on the back, scapulars and lesser wing-coverts; tail, with centre feathers and more than the basal half of the others yellowish olive, with dark shafts and a trace of a broad blackish bar; remainder of the tail including the shafts bright yellow (the amount of the bright yellow and of the dark bar on the tail is very variable, the former increasing and the latter decreasing as the bird grows older); most of the greater wing-coverts and the secondaries have broad grey edges and a wash of yellow towards the back; primaries with narrow ashy-white edges; primary coverts with broad white ends; under surface of quills dusky ash, whitish towards their inner edges; under wing-coverts yellow, with a few feathers next to the quills white. Iris red; bill brownish red; feet pale grey. Total length 9·1 inches, culmen 0·9, wing 5·6, tail 4·0, tarsus 0·9. *Abyssinia* (Schaufuss).

The Nun Black-headed Oriole is confined to North-east Africa, where it ranges over Shoa and *Abyssinia* into Bogosland.

Although this was the earliest purely African Oriole recognised, it is one of the rarest and most localised forms. It was discovered by Bruce, probably in Shoa, and was

originally described from a painting made by that traveller. It was first called the Nun Thrush by Latham, a few years before it received its Latin name. Heuglin records it as abundant in Abyssinia, at elevations varying from 2,000 to 8,000 feet, frequenting the belts of trees which line the banks of the streams and form one of the prettiest features of the country. In habits and voice it much resembles the better known European Golden Oriole. In its more northern range, Dr. Blanford considered the species to be rare, and remarks: "It has a peculiar harsh double call-note."

With regard to *O. meneliki*, Lord Lovat writes: "This Oriole is a native of the thickets, south of the Hawash Valley. It is locally plentiful, and is always met with singly or in pairs, feeding in forest trees with yellow leaves (name unknown) and, notwithstanding the bright colour, is difficult to see. The note is a melodious whistle, and the answer is a harsh double note."

Both Dr. Reichenow and Mr. Oscar Neumann regard *O. meneliki* as specifically distinct from *O. monachus*; this I do not believe to be correct. The type of *O. monachus* is a fully adult bird, and that of *O. meneliki* an immature specimen. That the former is a highland race, ranging from 2,000 to 8,000 feet, and the latter a lowland form, appears to me to be based upon no evidence, and the variation in the colouring of the tail-feathers and bill can be accounted for by age, and in no other manner.

Oriolus larvatus.

Oriolus larvatus, Licht. Verz. Doubl. p. 20 (1823) *Kaffraria*; Monteiro, Ibis, 1862, pp. 335, 341 *Quanza R.* Sharpe, Cat. B. M. iii. p. 217 (1877); Shelley, B. Afr. I. No. 572 (1896); Reichen. Vög. Afr. ii. p. 658 (1903); Shortridge, Ibis, 1904, p. 175 *Pondoland*; Grant, t. c. p. 256 *S. Abyssinia*; 1905, p. 203 *Uganda*.

- Oriolus capensis*, Swains. *Classif. B.* ii. p. 237 (1837).
Oriolus arundinarius, Burch. *Trav. S. Afr.* i. p. 464 (1822).
 " *Oriolus chloris*, Cuv." Hartl. *Orn. W. Afr.* p. 81 (1857).
Oriolus rolleti, Salvad. *Atti R. Acad. Torino*, vii. p. 151 (1864).
Oriolus larvatus rolleti, Reichen. *Vög. Afr.* ii. p. 659 (1903); Neum. J. f. O. 1905, p. 324.
Oriolus personatus, Heugl, 1867, p. 203 *White Nile*.
Oriolus larvatus, var. *minor*, Sharpe, *Ibis*, 1870, p. 225 *Abyssinia and Angola*.
 ? *Oriolus percivali*, Grant, *Bull. B. O. C.* xiv. p. 18 (1903) *Kikuyu*.
Oriolus larvatus angolensis, Neum. J. f. O. 1905, p. 236 *Malange*.
 Lorient coudougnau, Levaill. *Ois. Afr.* vi. p. 52, pl. 261 (1808).

Adult. Entire head and throat jet black; remainder of the plumage, with the exception of the wings and tail, uniform yellow of a more olive shade on the mantle; wings black, with pale edges to the quill and broad white ends to the primary-coverts; the pale edges to the quills are white on the primaries and outer secondaries, increasing in breadth and becoming yellow on the inner quills; lesser wing-coverts like the back, median and greater-coverts slightly greyer with some black on their inner webs or base; under surface of wings dusky black fading into ashy white on the inner webs of the quills and the adjoining wing-coverts, remainder of the latter bright yellow; tail olive yellow, with a black band across all but the centre feathers separating the olive yellow from the clear bright yellow ends of the ten outer feathers; both the yellow ends and the black band increasing in width towards the outer feathers. Iris red; bill pale brownish red; feet dusky ash. Total length 9.2 inches, culmen 1.0, wing 5.5 and 5.4, tail 3.7, tarsus 0.95. ♂ and ♀, 3. 74. Pinetown (Shelley).

Immature. Differs from the adult in having the feathers of forehead and crown edged with dull yellow; back of neck and mantle with obscure blackish stripes; chin and throat yellow with black shaft-stripes, chest with narrower black stripes. Iris reddish brown; bill black; feet dusky ash. ♀, 5. 3. 74. Durban (Shelley).

Lichtenstein's Black-headed Oriole ranges from Angola to the Cunene River, and over the eastern half of the continent from the Knysna in Cape Colony to about 12° N. lat.

The species has often been divided into two subspecies; a nominally large South African form, *O. larvatus*, and a smaller race, *O. roletti*. The size of the individual probably depends on the nutrition of the food it receives when young, and might vary to some extent with the nature of the sur-

roundings. Upon this theory alone can I suggest the reason for the slight difference in size of some individuals, which does not appear to be a character either constant or restricted to any special districts.

According to Dr. Reichenow, the Tropic of Capricorn separates the range of *O. larvatus*, Licht. and *O. roletti*, Salvad.

To this species belong the Oriole, obtained by Bohndorff at Kibondo, between the Congo and Lake Tanganyika (the *O. brachyrhynchus*, Reichen., J. f. O. 1887, p. 309), and it is abundant from Angola to the Cunene River, for specimens have been collected at Malange by Mechow in August, October, November and February, by Schutt in May, and by Sala at the Rio Dande. Mr. Monteiro found it known to the natives of Massangana, on the Quanza River, as the "Muenho" and it was very abundant in the wood at Benguela. According to Anchieta it constructs its nest among the top branches of trees and is known to the natives by the following names: "Cupio" at Humbe, "Angologombia" at Kakoma, pronounced "Golagombia" at Galanga, and "Ungologombia" at Quindumbo. It has also been obtained by Kellen in the Upper Cunene district, and by Eriksson at the Okovango River.

Stark writes: "An abundant resident in all the forest and wooded districts in Cape Colony, Natal, Zululand, Portuguese East Africa and the Transvaal. This beautiful Oriole is found usually on the outskirts of forests, among detached groves of trees, and the large growth on the banks of streams and rivers. In such localities its rich flute-like notes may be generally heard. These Orioles are almost invariably in pairs. They pass most of their time among the upper branches of fairly lofty trees, preferring those of thick growth, in which their brilliant plumage is concealed by a mass of foliage. They rarely settle on the ground. Their flight is undulating and

seldom prolonged for any great distance. They feed on caterpillars, small beetles and other insects, also on berries and small fruits, occasionally on seeds. The young are fed exclusively on caterpillars. The nest is suspended from a fork near the end of a horizontal branch of a tree, at a height of from twenty to fifty feet. It is saucer-shaped, woven from a long grey lichen that grows on the higher forest trees, often where it is hidden by the natural growth. The eggs, three to five in number, resemble those of the Golden Oriole in size, shape and colour."

Mr. Shortridge, in his article on "Birds from Pondoland" ("Ibis," 1904, p. 175), observes: "It is often seen in company with, or following flocks of, *Lamprocolius melanogaster*."

Layard gives the following picturesque sketch of a haunt of this bird: "On the left bank of the Kearboom's River, which falls into Plottenberg's Bay, about half a mile from where the mountains narrow down to the river, there is a lovely kloof, which opens to the water's edge, and stretches back inland for about a couple of miles. A clear running stream flows through the centre of it, and on each side rocky, inaccessible precipices hem in a splendid forest. In this lovely spot the silence was only broken by the babbling brook and the loud pipe of the Oriole, which frequented the summits of the gigantic yellow-wood trees, whose mighty heads, hung with dense masses of grey moss, seemed, like vegetable Titans, to watch over the solitude around them." The Messrs. Woodward found this Oriole in Zululand, frequenting the high trees, and flying "up and down the kloofs uttering its loud pleasant cry. Besides this cry it possesses an excellent song, with clear, mellow notes."

Can this Oriole be migratory in Mashonaland? Jameson and Ayres met with the species at the Umfuli River and write: "Occasionally we saw a specimen and heard its loud

call amongst the trees, but none, however, appear to remain." Mr. Guy Marshall writes from the same country: "Common during the winter months, but with the exception of a few pairs it evidently goes south to breed, shortly after the arrival of *O. notatus*. It is a much less wary bird than the latter." Mr. Boyd Alexander also believed it to be migratory at the Zambesi, but he only obtained a single specimen in July.

In the Nyasa district it is apparently a common resident, and according to General Manning is known to the natives of Angoniland as the "Lisondambamala." Dr. Stuhlmann records its Usegua name as "Kubuiru." Böhn mentions it as abundant but shy in the Marungu country on Lake Tanganyika, and Fisher observed that it was a plentiful species in Mangrove woods of East Africa, and that its note resembles that of our Golden Oriole. Dr. Hinde procured specimens at Ngong and along the Athi River, and writes: "When the wild figs are ripe, dozens of these birds may be seen in a single tree, consorting with *Lamprocolius chalybeus* and *Oriolus galbula*."

The type of *O. roletti* was obtained by Brun Rollett in the Upper White Nile in about 7° N. lat. According to Heuglin it ranges northward to 8° N. lat., and the vague locality "Nubia" on a specimen in the Leyden Museum, we cannot accept as evidence of its occurring further north.

The type of *O. percivali* was obtained by Mr. A. Blayney Percival, in the Kikuyu Forest, March 29, 1902, and differs from typical *O. larvatus* in having the four centre tail-feathers entirely black, in which character, as well as in the form and size of the bill, it resembles *O. nigripennis* (wing 5.5). There is a second specimen of this form, not quite mature, in the British Museum, obtained by Mr. Digget, in the Nandi Forest. These I here treat of as varieties of *O. larvatus*, as they do not apparently have any distinct range.

Oriolus brachyrhynchus.

Oriolus brachyrhynchus,* Swains., B. W. Afr. ii. p. 35 (1837) *Sierra Leone*; Sharpe, Ibis, 1870, p. 226, pl. 8; Shelley and Buckley, Ibis, 1872, p. 288, *Abouri*; Sharpe, Cat. B. M. iii. p. 218 (1877); Shelley, B. Afr. I. No. 573 (1896).

Oriolus larvatus brachyrhynchus, Reichen. Vög. Afr. ii. p. 660 (1903).

Oriolus baruffi, Bp. Consp. i. p. 347 (1850) *Ashantee*.

"*Oriolus intermedius* Temm." Hartl. Orn. W. Afr. p. 81 (1857) *Ashantee*.

Oriolus lætior, Sharpe, Bull. B. O. C. vii. p. 17 (1897) *Gaboon*; id. Ibis, 1904, p. 91 *Efulen*.

Oriolus larvatus lætior, Reichen. Vög. Afr. ii. p. 661 (1903).

Adult. Very similar in colouring to *O. larvatus*, but smaller, and with a little more bluish grey on the outer greater wing-coverts and secondaries. Wing 4·3 to 4·7 inches.

Immature. Differs from that of *O. larvatus* in having no black on the head and no black streaks on the throat or body; head and throat yellowish green, paler and yellower on the lores, cheeks, chin and throat, the feathers of the latter part having yellow edges; terminal margins to the median and greater-coverts yellowish white; bill reddish brown, only slightly darker than in the adult.

In adults, from both the Gold Coast and Gaboon, the colour of the back of the neck varies from greenish-shaded yellow (*O. brachyrhynchus*, Swains.) to bright yellow (*O. lætior*, Sharpe), the latter probably being the older birds.

The Short-billed Black-headed Oriole ranges over Western Africa from Sierra Leone into Gaboon, and eastward to about 31 E. long.

The species has been divided, in my opinion, wrongly, into two, a northern and southern subspecies. The former and typical race, with a range from Sierra Leone into Togoland, and the Southern race *O. lætior*, Sharpe, extending over Camaroons, Gaboon, and eastward to the country between the Albert Nyanza and the Albert Edward Nyanza.

* In "*brachyrhynchus*" Swains., I have above inserted an additional *h*, for I look upon the absence of that letter between the *r* and the *n* as a printer's error only, Swainson not leaving it out in *Vidua erythrorhynchus*, B. Afr. i. p. 176.

The type was obtained at Sierra Leone, which is the most northern range known for the species. In Liberia it is a common bird of the forest, has been obtained at the Sulymah River by Demery, and at St. Paul's River, Grand Cape Mount, Messurdo, Junk River, Schieffelinsville and Hill Town, by Dr. Büttikofer, who remarks, after making some observation on the variation in the size and colouring of his specimens: "Their song is very much like that of *O. galbula*, interrupted now and then by a kind of mewing like that of a cat." The species is equally abundant on the Gold Coast. The type of *O. baruffi* was one of Pel's specimens from Ashantee, on the label of which Temminck had previously written "*O. intermedius*," which name was later adopted by Hartlaub for this species. Mr. Boyd Alexander writes: "Common in the forest, where its flute-like call is often the only bird-voice to be heard." While I was out there with T. E. Buckley, we found the present species and *O. nigripennis* plentiful and frequenting the same trees at Abouri. In Togoland, these Orioles have been procured by Mr. Baumann, at Misahöhe, Amedjovhe and Agome Tongwe. It has not been recorded from further east, until we come to Camaroons, where, according to Dr. Reichenow, it is entirely replaced by *O. lætior*.

These Orioles are abundant, in suitable places throughout Camaroons and Gaboon, ranging inland to the Semliki River, which connects the Albert Edward Nyanza with the Albert Nyanza, where it has been obtained by Dr. Ansorge at Fort Beni, and in the neighbouring country, to the westward, Emin collected specimens in the Ukondju country at Karevia and along the Ituri River at Irumu and Ipoto. The most southern range known for the species is Gaboon, for the Oriole obtained by Bohndorff on the Congo at Kibondo, and referred to this species in 1887, is really a specimen of *O. larvatus*.

Variety *O. lætior* resembles *O. brachyrhynchus* in all its measurements, and is a distinctly smaller bird than *O. larvatus*, which it resembles in the brighter and yellower shade of the upper parts between the crown and the tail. In the British Museum there are nine of the duller typical forms of *O. brachyrhynchus* from the Gold Coast, and three of *O. lætior*, while from Camaroons and Gaboon there are eight of *O. lætior* and three of the duller forms, which include one from Efulen, in Camaroons, and two from Gaboon. I therefore cannot look upon these forms as local subspecies; but they come under my definition as varieties, the extreme forms only being easily distinguishable.

Oriolus nigripennis.

Oriolus nigripennis, Verr. J. f. O. 1855, p. 105 *Gaboon*; Sharpe, *Ibis*, 1870, p. 228, pl. 7, fig. i. Shelley and Buckley, *Ibis*, 1872, p. 288 *Abouri*; Sharpe, *Cat. B. M.* iii. p. 220 (1877); Shelley, *B. Afr. I.* No. 574 (1896); Reichen. *Vög. Afr.* ii. p. 661 (1903); Kemp, *Ibis*, 1905, p. 247 *Bo.*

Adult. Like *O. larvatus* and *O. brachyrhynchus* in colouring, with the exception of the wings and tail; wings black and yellow with no grey; primary-coverts black with no broad white ends; primaries with less strongly marked white edges; tail uniform black with yellow ends to the feathers, narrow on the centre ones and broadening out toward the outer feathers, which have the end two-fifth bright yellow. Iris red; bill pale brownish red; feet dusky grey. Total length 8·2 inches, culmen 0·95, wing 4·8, tail 3·2, tarsus 0·9. Type, W. Afr. (Verr.).

Immature. More like those of *O. larvatus* than of *O. brachyrhynchus*. Differs from the adult in having some yellow on the edges of the black feathers of the forehead and crown; feathers of throat black with broad yellow edges; centre tail-feathers with an olive yellow wash on the basal half. Bill black; wing 4·4. Gold Coast (Kirby).

The Black-winged Black-headed Oriole ranges from Sierra Leone into Loango, and eastward to the Niam-Niam country.

Its occurrence so far west as Sierra Leone formerly rested on a specimen in the late Lord Walden's collection, so it is interesting to find it again met with in that district by Mr. Robin Kemp, who procured a pair in February, 1904, at Bo. It is moderately plentiful throughout the Gold Coast, and is represented in the British Museum from Wassaw (Blissett), Fantee (Higgins), and Cape Coast (Ussher). I and Buckley considered it to be abundant in the Aguapin district, and met with it in company with *O. brachyrhynchus* at Abouri. Mr. Boyd Alexander writes: "This Oriole inhabits the same localities as *O. brachyrhynchus*, but is not so common." He also remarks that its cry "lu-lu," "breaks at intervals the distant silence, while close to the traveller, the hurried notes of the Babbling Thrush (*Cossypha verticalis*) comes from the cool depths of the forest thicket." In Togoland Mr. Baumann obtained the species at Misahöhe Station, but, like *O. brachyrhynchus*, I do not find it yet recorded from the country between Togoland and Camaroons.

In Camaroons the species has been procured at Buea, Bipimbi, Mann's Well and Efulen. The type of the species which is in the British Museum came from Gaboon, and here, according to the Brothers Verreaux, it arrives towards the middle of October, and, in pairs, frequents the large forests which abound with berries and caterpillars. In Loango, specimens have been procured at Chinchonxo in April by Falkenstein, and at Landana in May by Lucan and Petit, and I should doubt its being migratory in its habits, as Verreaux implies.

In its most eastern known range it has been obtained by Bohndorff in Sassa, about 4° 30' N. lat. by 26° E. long.



Oriolus crassirostris.

Oriolus crassirostris (Pl. 43).

Oriolus crassirostris, Hartl. Orn. W. Afr. p. 266 (1857) *St. Thomas Isl.*; Sharpe, Cat. B. M. iii. p. 217 (1877); Shelley, B. Afr. I. No. 575 (1896); Reichen. Vög. Afr. ii. p. 662 (1903); Bocage, Journ. Lisb. 1904, p. 77.

Adult. Entire head, upper neck and throat black; remainder of the neck yellowish white, passing into ashy yellow on the back; upper tail-coverts slightly yellower; two centre tail-feathers dusky shaded olive yellow, with pale yellowish terminal margins; remainder of tail black, with pale yellow ends broadest on the outer feathers where the yellow extends over the end third; wings dusky black, strongly washed with grey on the coverts and outer webs of the secondaries, and shaded with yellow towards the scapulars; quills with the outer and terminal margins white, broadest towards the ends of the feathers; inner margins of basal half of quills white; under wing-coverts slightly mottled with black, otherwise white like the breast and thighs, with an obsolete yellow tinge towards the neck and flanks; under tail-coverts whitish yellow. Iris red; bill pale brownish red; feet pale grey. Total length 9·3 inches, culmen 1·1, wing 5·0, tail 3·9, tarsus 1·1. ♂ 4. 88. Angolares (Newton).

Immature. Differs in having no blacks on the head; forehead, crown, sides of head and back of neck dusky brown obscurely streaked with paler and yellower sides to the feathers; chin, throat and breast white, with dusky black shaft stripes on the crop and chest. Bill more dusky. Wing 4·6. ♀, 8. 89. St. Micquel (Newton).

The Stout-billed, Black-headed Oriole is confined to the Island of St. Thomas.

This remarkable species of Oriole is very abundant throughout the island (Bocage, Journ. Lisb. 1904, p. 77). The type was discovered by Weiss, and this is all the information I can find regarding the species, which, no doubt, like the other Ethiopian Orioles, frequent the forests and suspend graceful, cup-shaped nests in the thick foliaged trees, at some distance from the ground, and live on the large caterpillars, insects and fruit, which such localities supply them with in abundance.

Family II. STURNIDÆ.

Form somewhat Thrush-like, but the shape of the tail is more variable; upper parts generally strongly glossed with metallic shades; rarely any yellow on the feathers, which colour when present, as in *Cosmopsarius regius*, is confined to the under parts.

Bill black, brown, red or yellow, not very stout, rarely any notch on the upper mandible; no rictal bristles. Wing of ten primaries; fairly long, but when closed never reaching to the end of the tail. Tail of twelve feathers, square or graduated. Tarsus moderate, generally longer than the culmen. Plumage usually strongly glossed with blue or green in adult, and streaked or blotched in young bird.

In their habits they are gregarious, frequenting mostly the open country to feed on insects, slugs and worms, and at times upon fruit, when it is ripe. Breed in holes of trees, cliffs, &c., and more rarely among the boughs of trees. Eggs, generally five in a clutch, are usually uniform pale blue, but are occasionally spotted and very rarely white.

The family is confined to the Eastern Hemisphere and comprises some 150 species, of which I here record 57. Of these, three are now extinct, two are introductions from the Indo-Malay Regions and one (the Common Starling) from England.

KEY TO THE SUBFAMILIES.

- a.* Hind claw weaker than the claw of the middle toe; all the claws similarly bent into nearly perfect semicircles; bill red or red and yellow *Buphaginæ.*
b. Hind claw stronger than the claw of the middle toe; no red on the bill. *Sturnidæ.*

Subfamily I. BUPHAGINÆ.

Bill red, or yellow with the end red, strong and broad at the base, with the culmen slightly depressed and curved at the tip; lower mandible short not reaching to the tip of the bill; nostrils exposed and rounded. Wing long and pointed. Tail shorter than the wing, but fairly long and wedge-shaped, with the end of each feather pointed. Tarsi strong, of the same length as the middle toe; lateral toes equal in length, the outer one united to the middle one by a membrane, inner one free; claws much compressed, curved and acute; hind claw not so strong as that of the middle toe.

The subfamily is confined to Africa and comprises only two species, which belong to one genus.

Genus **BUPHAGA**.

Type.

Buphaga, Linn. S. N. i. p. 154 (1766) *B. africana*.

KEY TO THE SPECIES.

- a.* Bill yellow, with the end red; rump and upper tail-coverts ochraceous buff *africana*.
- b.* Bill entirely red; rump and upper tail-coverts greyish brown, paler towards the back *erythrorhyncha*.

Buphaga africana.

Buphaga africana, Linn. S. N. I. p. 154 (1766) *Senegal*; Gray, Gen. B. ii. p. 332, pl. 82 (1847); Sharpe, Cat. B. M. xiii. p. 195 (1890); Shelley, B. Afr. I. No. 576 (1896); Reichen. Vög. Afr. ii. p. 666 (1903).
 Le Pique-boeuf, Levaill. Ois. Afr. ii. p. 198, pl. 97 (1799) *Great Namaqua*.

Adult. General plumage brown, shading into sandy buff on the lower half of the back, tail-coverts and breast; a shade of rufous on the inner webs of the outer four pairs of tail-feathers. "Iris yellowish red; bill yellow, with the end portion red; feet black" (Buckley). Total length 9·3 inches, culmen 0·7, wing 5·0, tail 4·0, tarsus 0·9. ♂, 25. 6. 67, Ovaquenyana (Andersson) and ♀, 23. 9. 73, Matabele (Buckley), wing 4·7.

The Yellow-billed Ox-pecker ranges over Africa, south from about 18° N. lat., with the exception of the forest districts of West Africa, Cape Colony and the country eastward of a line drawn from the middle Zambesi to Lake Tana.

The habits of this species and of *B. erythrorhyncha* are alike, and have been well described by Stark, as follows: "This species is not so common near the coast of Natal and East Africa, as the Red-billed Ox-pecker, and appears to follow the larger game in their retreat before civilised man. It more particularly favours the buffalo and rhinoceros with its company, and the majority of 'big-game' hunters have noticed this partiality. Mr. Andersson remarks in his

'Lake N'gami,' that this bird 'is also a frequent companion of the rhinoceros, to which, besides being of service in ridding him of many of the insects that infest his hide, it performs the important part of sentinel. On many occasions has this watchful bird prevented me from getting a shot at that beast; the moment it suspects danger it flies almost perpendicularly up into the air, uttering sharp shrill notes that never fail to attract the attention of the rhinoceros, who, without waiting to ascertain the cause, almost instantly seeks safety in a precipitate flight.'

"Mr. Ayres also writes: 'This species is a pest to the hunter, of whose approach it warns the buffalo and rhinoceros by its loud harsh note, which is perfectly understood by its huge friends.'

"According to Mr. J. G. Millais, who gives a most excellent account of this species, accompanied by five drawings, in his delightful 'A Breath from the Veldt,' the Rhinoceros Bird attaches itself most frequently to the rhinoceros, the Cape buffalo, the sable antelope, and the water-hog, as well as the koodoo. He writes: 'The prehensile power of the claws is, as I found by experience, so great, that when a dead bird which had grown stiff was thrown on to the back or sides of an ox, so that the feet touched the animal's hide, the claws held fast at once, and could not be easily withdrawn. It is most interesting to notice the way in which a party of these birds will move about on the body of a horse or ox, searching every part of him as they run or hop over it in the most lively fashion. At the risk of being accused of telling a traveller's yarn, I must state the fact they can hop backwards quite as well as forwards, and they often make long hops downwards from the shoulders to the foreleg, or down the side of the animal, whose coat they are engaged upon. It is quite immaterial to them how or in what direction they move.'

“When the Rhinoceros Bird wishes to alarm an animal of the approach of danger, they rise for 20 or 30 feet, and fly round in a series of small circles, uttering harsh scolding notes, which much resemble those of the European Missel Thrush. On this signal a wild animal at once takes to flight, but an ox as a rule takes no notice, much to the indignation and horror of the birds, who sometimes become perfectly frantic in their endeavours to stampede the beast, flying wildly at his face and eyes, while screaming their loudest. Curiously enough, all this alarm on the part of the Ox-birds seems to be on account of the animals on whose hide they have been searching for food, for they themselves are among the tamest of birds, frequently allowing one to walk within a few paces of them without evincing any alarm whatever. These Starlings not only rid the animals they frequent, of ticks and other vermin, but they often peck at sores on oxen and donkeys until they form cavities, which measure sometimes 2 inches or more in diameter, and as much in depth: they actually do eat the flesh and drink the blood of these animals. Oxen submit quite placidly to this process of being eaten alive, and seem none the worse for it afterwards, but donkeys show their objections by trying to rid themselves of the birds, by rolling on the ground and running under bushes.

“The Yellow-billed Ox-pecker builds an untidy-looking nest in the natural hollow of a tree. On a foundation of straws and pieces of dried grass a thick pad of hairs is formed, and on this four or five very pale bluish white eggs are deposited. They average 1.15×0.90 .”

With regard to its range, the species is apparently abundant throughout Senegambia; Dr. P. Rendall writes from the Gambia: “Common and noisy, but difficult to shoot, as they will not leave the backs of the cattle. Besides

the parasites thereon, they seem also very partial to the lacrymal secretions of these animals." Mr. Budgett also calls it common on McCarthy Island. It has not been recorded from the country between Senegambia and the Niger, but this may be accounted for by the scarcity of cattle and the forest character of these parts, for it is not uncommon in the Niger and White Nile districts. Following its range southward, it has been procured by Marche and De Compiègne in Gaboon, Toulson obtained it in Angola, and according to Monteiro the species is "abundant all over Angola, which, generally speaking, abounds in cattle." Monteiro's specimen came from the neighbourhood of the town of Benguela, and his Angola possibly refers to that country, where it has been obtained by Anchieta at several places, and according to his notes is known at Benguela and Capangombe as the "Loando." In Damaraland these Starlings are rare, and I cannot trace their range further south in Western Africa.

From Zululand and Central Natal northward, it is fairly plentiful. In Zululand the Messrs. Woodward found this species much rarer than *B. erythrorhyncha*, only meeting with it in the Umbegamusa district, which lies between the Black and White Umfulosi Rivers. E. C. Buxton writes from Suariland, a little to the north of Natal: "The two Buphagas I shot at the same time on some oxen, one of each off the same cow, and I could not distinguish them on the wing. There were several shot at the time, and in the proportion of one of the red-billed birds to two of the others."

Buckley writes: "Common in the Transvaal right up into the Matabele country. This bird is a great nuisance at times to cattle, from its habit of pecking holes in them; they run over a bullock as easily as a Woodpecker on a tree, picking out the ticks which infest them. Over a bullock's back you may see three or four of these birds' heads

reconnoitering you on your approach; so tame are they that the one in question was killed by one of our natives, with a stick, from a horse's back. This species is continually with the rhinoceros, and when the animal is disturbed, the birds hover over it as it runs, keeping up a continual twitter." Mr. Guy Marshall writes: "Fairly common in Mashonaland, though I have seen but few round Salisbury. In South Africa the species is known to the English colonists as the "Tick-bird" and "Rhinoceros-bird," by the Dutch as the "Rhinaster Vögel," and by the Matabeles as the "Umblanda."

The species has not been recorded from the Zambesi nor from Central British Africa, but specimens have been collected at Ulundi (Trotha), north-east of Lake Tanganyika; Bukoba (Stuhlmann); Kibiro, Lado, Makraka and Buesa (Emin); Port Rek, Lake Tana, Galabat, Mareb and Taka (Heuglin).

The late Sir Samuel Baker, in his "Albert Nyanza, Great Basin of the Nile," i., p. 107, writes: "It is a perfect pest to the animals, and positively eats them into holes. The original object of the bird in settling upon the animal is to search for vermin; but it is not contented with the mere insects, and industriously pecks holes in all parts of the animal, more especially on the back. I was obliged to hire little boys to watch the donkeys, and to drive off the plagues; but so determined and bold were these birds, that I have constantly seen them run under the body of the donkey, clinging to the belly with their feet, and thus retreating to the opposite side of the animals when chased by the watch-boys. In a few days my animals were full of wounds, excepting the horses, whose long tails were effectual whisks."

Buphaga erythrorhyncha.

Tanagra erythrorhyncha, Stanley, in Salt's Trav. Abyss. App. p. 59 (1814) *Abyssinia*.

Buphaga erythrorhyncha, Temm. Pl. Col. ii. pl. 465 (1828); Sharpe, Cat. B. M. xiii. p. 196 (1890); Shelley, B. Afr. I. No. 577 (1896); Reichen. Vög. Afr. ii. p. 667 (1903); Grant, Ibis, 1904, p. 255 *Gallaland*; Clarke, t. c. p. 525 *Natal*; Sparrow, Journ. S. Afr. O. U. i. p. 9 (1905) *S. Africa*; A. L. Butler, Ibis, 1905, p. 323 *Soudan*; Neum. J. f. O. 1905, p. 237; Erlanger, t. c. p. 705 *N. E. Afr.*

Buphaga habessinica, Hemp. and Ehr. Symb. Phys. Fol. W. pl. 9 (1828).

Adult. General plumage brown gradually shading into sandy buff on the breast and under tail-coverts. Iris red; eyelids yellow; bill entirely red; feet reddish brown. Total length 8.2 inches, culmen 0.7, wing 4.6, tail 3.6, tarsus 0.8. ♂, 17. 2. 01, Goraboutha (Pease), and ♀, 19. 6. 76, Swaziland (T. E. Buckley), wing 4.6.

Immature. Similar to the adult, but slightly darker on the head and neck. Iris brown; eyelids pale yellow; bill dusky reddish; feet black. Wing 4.6; 21. 3. 74, Durban (Shelley).

The Red-billed Ox-pecker ranges over Eastern Africa from Natal to 17° N. lat., and westward through the White Nile district into Senegambia.

Little is known regarding the species in Western Africa, Marche and De Compiègne collected specimens at Dakar, Mbao and Deine, and Hartlaub records others in Verreaux's collection from Cassamanse, Bissao and Gaboon. According to Dr. Sharpe (Layard's B. S. Afr. p. 420), Anchieta has met with the species at Catumbella in Benguela, but I do not know on what authority he made that statement.

When I was in Natal these birds were common about Durban and Pinetown, where they might be seen climbing all over the cattle in search of parasites. On approaching a flock thus engaged, they quickly moved to the backs of the animals, where they sat in rows just before taking flight. On leaving they rise for some 50 or 60 feet, and then fly

straight away. My friend, Mr. T. L. Ayres, told me he used to tie slip-knots in the tails of the horses and found it a very effective way of catching these birds. A young caged bird he had was very tame, always flying towards anyone who came near, and chattered most loudly if not taken notice of.

Starke writes: "The Red-billed is the commonest 'Tick Bird' on the coast of Natal and East Africa, its place further inland being taken to a large extent by its congener, *Buphaga africana*. In the lower parts of Natal it is resident, and in pastoral districts is nearly always to be seen in small flocks, either seated on the backs of oxen or horses, climbing, Woodpecker-like, over their sides, or flying round them with harsh cries resembling those of the European Missel Thrush. Occasionally they perch on trees, seldom or never on the ground. Livingstone, however, states that he met with the species together with *Buphaga africana*, roosting in reeds in localities where neither wild nor tame animals were found ('Missionary Travels,' p. 546). When seated on the back of an animal these Ox-peckers rest on the whole tarsus, with head thrown back and bill pointing upwards at an angle; if endangered by the sweep of their host's tail they flatten themselves still more and allow it to brush lightly over, or jump nimbly out of the way. Their food consists almost entirely of ticks taken from the bodies of various animals, donkeys being special favourites. Should they, however, find an animal with a sore back they are apt to peck at and irritate the wounds, perhaps for the sake of the blood, which they drink as it oozes from the raw surfaces, but I have never known the Red-billed Ox-pecker eat out the deep holes that the yellow-billed species sometimes does. The same individual birds frequently attach themselves to particular animals. A donkey at Pinetown in Natal, was constantly attended by four of these birds, who, in return for their services in keeping her

free from ticks, were in the habit of drinking blood from sores which they kept open for that purpose behind the ears. Their nests also were lined entirely with hairs pulled from the donkey's coat; in collecting these the birds showed a certain amount of ingenuity, the individual hairs as they were pulled out being placed end to end on the donkey's back until neat bundles were accumulated, as large as they could conveniently carry; these were then carried to their nests under the roof of a house. In unsettled districts these birds build in the holes of trees, but in more civilised parts usually under the roofs of houses. The nest is an untidy structure of straw and grass lined with the hair of various animals. The eggs, three to five in number, are of a uniform pale bluish-white colour. They average 1.12×0.85 ." According to Major Sparrow, "This species also nests in stone walls, and the eggs are of a white ground covered with dark pink spots and blotches. It nests from November to January."

In Zululand the Messrs. Woodward observe ("Ibis," 1877, p. 416): "Numerous here, and were a great nuisance to one of the beasts who had a bad sore;" and further remark: "The cow seems to recognise the Ox-pecker as a friend, rather encouraging its attentions than otherwise."

The species is abundant and very generally distributed throughout the eastern half of Tropical and South Africa; it is represented in the British Museum from Durban, Pinetown, Olifant River, Swaziland, Mpimbi, Machako's, Kitui, Rowwah, Gedais, Gourabourta, Angollala, Anseba, Senafé, Maragaz and Ailet, and has also been recorded from some fifty intermediate stations along this line and the Nile valley.

According to Dr. Stuhlmann, the species is known by the natives at Karogwe, near Pangani, as the "Tschassi," and Mr. Lort Phillips mentions "Hoorie" as its Somali name. Speke found them common in Somaliland, and wrote: "They

feed chiefly on lice and ticks, which they find on cattle, and are very annoying to camels who are galled by carrying baggage, by pecking at and preventing their sores from healing; five or six are generally to be seen clinging to one animal at once. When cattle are sound in skin they seem to enjoy being cleansed by these birds."

In Northern Abyssinia, according to Dr. Blanford (Geol. and Zool., Abyss., p. 402), it is "found both on the highland and near the coast. It is much more abundant in the former." It is apparently rare in the Egyptian Soudan, for Mr. A. L. Butler observed it only at Jebel Ahmed Aga on the White Nile, when creeping up to buffaloes in thick bush.

Subfamily II. STURNINÆ.

Bill never red nor red and yellow. Feet adapted for running on the ground, the claws being only moderately curved, and the hind one the longest. They often breed in colonies in trees and cliffs, usually, but not always, selecting holes for the reception of their nests, and assemble in large flocks after the breeding season in the open country to feed on insects, snails and worms, also on fruit when it is ripe.

It is doubtful if all the genera entered in the Catalogue of the Birds in the British Museum, vol. xiii., can be recognised. If we unite *Chalcopsar*, with its one species, *C. australis*, to either *Lamprotornis* or *Lamprocolius*, we have scarcely any character left for separating *Lamprocolius*, Sundev., 1835, from *Lamprotornis*, Temm., 1820. The genus *Lamprotornis* of my following key presents four other fairly marked groups: (1) with a large angular notch on the inner webs of the primaries, and a slight graduation of the tail, includes *L. ornatus*, *L. splendidus* and *L. chrysonotus*; (2) *Heteropsar*, Sharpe, for *L. acuticaudus*, with a decidedly wedge-shaped tail; (3) *Lamprocolius*, Sundev., type *L. phanicopterus*, with the tail square, and the feathers fairly broad; (4) *Coccycolius*, Oust., with its one species, *C. iris*, is distinguished by the narrow tail-feathers and the peculiar strong metallic gloss resembling that of the Golden Cuckoos. These forms collectively constitute one very natural group, to which Spree is most nearly allied.

The latter genus comprises two groups: (1) Those with the abdomen white, including the typical species, *S. bicolor*, have the tail slightly longer and more graduated, and the outstretched feet not reaching to the tip of

the tail as it does in group 2, which includes all the rufous breasted species.

On coming to the Chestnut-winged Starlings, which are all readily distinguishable by the large amount of rufous on the wings, which are alike in both sexes, we find that the thirteen known forms, including three subspecies, belonging to this group, have been separated into six genera, of which *Onychognathus*, Hartl., 1849, with the type *O. fulgidus*, is the oldest, then *Pyrrhochira*, Reichenb., 1850, *Amydrus*, Cab. 1851 following; the other three genera are represented by single species. It appears to me to be undoubtedly an advantage to science to include these species in one genus, as Blanford has forcibly expressed as his opinion, in the "Geol. and Zool. Abyss." p. 401 (1870), and which I have followed by placing all these Chestnut-winged Starlings under their one oldest generic name, *Onychognathus*.

KEY TO THE GENERA.

- a. Head and neck never white or ashy when the under parts are white.
 - a¹. Head and neck entirely feathered; tarsi and feet never yellow.
 - a². Feathers of head and neck rounded.
 - a³. Tarsi and feet pink; plumage mostly isabelline, with no gloss. *Hypocolius*.
 - b³. Tarsi and feet blackish.
 - a⁴. Tail square, with the centre feathers slightly the shortest.
 - a⁵. Culmen rather long and straighter, about the length of the tarsus. *Hartlaubius*.
 - b⁵. Culmen rather short and more curved. *Cinnyricinclus*.
 - b⁴. Tail, with the centre feathers longer than the outer ones; plumage glossed.
 - c⁵. Basal portion of primaries white, forming a distinct speculum on the closed wing *Speculipastor*.
 - d⁵. No white showing on the closed wing.
 - a⁶. Plumage of sexes alike. No rufous on the wings, unless the breast and under tail-coverts are rufous.
 - a⁷. Tail longer than the wing, and with the end portion of centre feather only 0·5 inch wide; breast yellow or ashy brown. *Cosmopsarus*.

- b*⁷. Tail-feathers all broad to their ends, when the tail is longer than the wing.
- a*⁸. Breast and under tail-coverts black or strongly glossed with green, blue, violet or bronze, at least in adults. *Lamprotornis.*
- b*⁸. Breast and under tail-coverts white or chestnut. Tail shorter than the wing. *Spreo.*
- b*⁶. Plumage of sexes generally dissimilar; some rufous on the wings in the female; breast and under tail-coverts neither white nor rufous.
- c*⁷. Larger; wings alike in both sexes *Onychognathus.*
- d*⁷. Smaller, wing less than 4.5 inches; primaries entirely blackish in the males. *Pæopterus.*
- b*². Feathers of the head and neck lanceolate *Sturnus.*
- b*¹. Head and neck not entirely feathered.
- c*². A bare track of skin down the sides of the throat or the entire head bare and wattled *Cheatophora.* R/
- d*². No portion of the throat bare; bill and feet yellow.
- c*³. Feathers of crown lanceolate; bare skin on head next to the eye *Acridotheres.*
- d*³. Feathers of crown not lanceolate; bare portion of head forms yellow lappets on sides of crown *Mainatus.*
- b*. Head and neck white or pale grey, and the under parts white; bill and feet yellow (extinct).
- c*¹. With long crest-feather of loose texture *Fregilupus.*
- d*¹. No crest; plumage almost entirely white *Necropsar.*

Genus I. HYPOCOLIUS.

Bill pink, with the end black, broader than deep; culmen curved; upper mandible with a slight notch near the end; nasal aperture rounded and exposed. Wing shorter than the tail; distance between the tip of the secondaries and end of wing less than the length of the tarsus; primaries, one small, not reaching to the end of the primary-coverts, three and four longest. Tail rounded, the outer feathers falling short of the centre ones by 0.5 inch. Tarsi, feet and claws pink.

Type.

Hypocolius, Bp. Consp. i. p. 336 (1850) *H. ampelinus.*

{January, 1906.

Hypocolius ampelinus.

Hypocolius ampelinus, Bp. Consp. i. p. 336 (1850); Heugl. Ibis, 1868, p. 181, pl. 5; Hartl. Bericht. p. 125 (1868); Sharpe, Cat. B. M. iii. p. 316 (1877); Shelley, B. Afr. I. No. 578 (1896); Sharpe, Handl. B. iv. p. 275 (1903); Reichen. Vög. Afr. iii. p. 677 (1905).
Ceblepyris isabellina, Heugl. Syst. Uebers. p. 32 (1855).

Adult male. Upper parts mostly uniform pale pearl grey, of a more sandy buff shade on the top of the head, which is surrounded with black, very narrow in front and on the side of the forehead, but widens out over the sides of the head, with the exception of the cheeks, and extends in a broad band across the back of the head; tail-feathers with broad black ends, primaries black with broad white ends to the nine long feathers; most of the secondaries have a large amount of black on their inner webs, which cause the under surface of the wing to be blackish in the middle, white towards the end and pale grey on the coverts which incline to buff near the bend of the wing; cheeks, chin, throat, centre of breast and under tail-coverts pale sandy buff of a greyer shade on the lower throat, front of chest and the flanks. Iris brown; bill pink with the end black; tarsi, feet and claws pink. Total length 9.6 inches, culmen 0.55, wing 3.95, tail 4.6, tarsus 0.95. ♂, 30. 3. 91. Fao (Cumming).

Adult female. Differs in being uniform sandy buff, darker above than below, with no black on the head and less black at end of tail; primaries pale ash brown, shading into blackish brown towards the ends of the feathers, which have narrow white terminal margins. Wing 3.9, tail 4.1. ♀, 29. 6. 86. Fao (Cumming).

Immature. Resemble in colouring the sex to which they belong, with the exception of the black on the head being absent in the males as well as in the females. Fao (Cumming).

The Pink-billed Starling ranges from the White Nile eastward into Southern Central Asia.

In the British Museum there is a specimen labelled "White Nile" (Verreaux), and I doubt the species ranging further west, for Count Salvadori ("Ibis," 1870, p. 539) observes that the specimen in the Turin Museum is one of Botta's collecting, and was not obtained in the Niam-Niam country, by Piaggia, as stated by Hartlaub.

The species was discovered by Botta in 1839, and three

of his specimens in the Paris Museum are believed to have been obtained at Sennaar; it has also been received from Abyssinia in a collection made by M. de Goutin while he was Consul at Massowa. This is all that is known with regard to the species in Africa.

It has been recorded by Lieutenant H. E. Barnes as having been seen near Aden, and probably its true home is Arabia, from whence it migrates eastward and westward according to the season.

With regard to its habits I may extract the following from Mr. Cumming's notes made near Fao at the northern extremity of the Persian Gulf ("Ibis," 1866, pp. 478-480). Arriving from S.E., the first flock of six passed over the telegraph building, April 10. It is not till the middle of June that they breed, first eggs were found on the 13th of that month, and young, just able to fly, on July the 2nd. The nests are generally placed on the leaves of the date-palm, usually at 3 to 5 feet from the ground; they are substantial and cup-shaped, about 3.5 inches wide by 2.5 deep, lined inside with fine grass, soft fluff from the willow when in seed, wool and sometimes hair. The eggs, generally four in number, "are of a glossy leaden white, with leaden coloured blotches and spots towards the larger end, sometimes forming a ring round the larger end, and at times spreading over the entire egg." They measure on an average 0.86×65 .

A live specimen he sent to the Zoological Gardens, London, he brought up by hand from the nest (P. Z. S. 1890, p. 147, pl. 15), "having been first fed on bread and water, and afterwards on dates and other fruits. It would also take flies, grubs and grasshoppers, as well as dry bread, bread steeped in sugar and water, and was delighted in having a little lucerne occasionally."

Genus II. **HARTLAUBIUS.**

Bill black, slender and rather long, as long as the tarsus, culmen slightly curved; nasal aperture rounded and situated in the fore part of the nasal-groove, with a posterior rather than a superior membrane. Wing longer than the tail; primaries, one small, not reaching beyond the primary coverts and is shorter than the culmen; three and four longest. Tail square, with the centre feathers slightly the shortest; tarsi, feet and claws black, the latter rather strong and curved.

Type.

Hartlaubius, Bp. C. R. xxxvii. p. 830 (1853) *H. aurata.*

The genus is confined to the Island of Madagascar and comprises only one species.

Hartlaubius auratus.

Turdus auratus, P. L. S. Müll. S. N. Suppl. p. 140 (1776) *Madagascar.*

Turdus madagascariensis, Bodd. Tabl. Pl. Enl. p. 32 (1783).

Hartlaubius madagascariensis, Milne, Edw. and Grand. Hist. Madag. Ois.

i. p. 311; Atlas, ii. pls. 115, 113, B. figs. 3, 116 (1879); Sharpe, Cat.

B. M. xiii. p. 120 (1890); Shelley, B. Afr. I. No. 579 (1896).

Acridotheres gracilirostris, Drap. Dict. Class. vii. p. 152 (1841).

Madagascar Thrush, Lath. Gen. Syn. ii. pt. 1, p. 68 (1780).

Adult male. Entire head and throat uniform dark brown, remainder of the neck and the back rather paler brown shading into glossy green towards the ends of the tail-coverts; tail blackish brown washed with a green gloss strongest on the centre feathers, outermost web on each side broadly margined with white; least and median wing-coverts brown, the latter slightly glossed with green and with some white next to the bend of the wing; remainder of wing dusky black with broad white edges to most of the primaries, the outer quills with glossy blue edges like the greater wing-covert excepting the inner one which shades into the brown of the scapulars and has a green gloss on the inner web; a small coppery bronze patch on the greater coverts; under wing-covert and portion of the inner webs of the quills white; sides of lower throat, front of chest and the flanks rufous shaded brown; centre of chest, abdomen and under tail-coverts white. "Iris brown; bill and feet black" (Grandidier). Total length 7·7 inches, culmen 0·75, wing 4·2, tail 3·0, tarsus 0·85. Antouzil Bay (Verr.).

Adult female. Differs from the male in the dark parts being of a more uniform dull brown, with a very slight greenish gloss on the tail,

terminal portion of inner webs of the quills and the outer webs of the greater wing-coverts and inner primaries, and there is much less white on the quills. Wing 3·9, tail 2·7. ♀, Madagascar (Crossley).

The Madagascar Starling is confined to the Island of Madagascar.

According to M. Grandidier's notes, these Starlings are restricted to the east and north-eastern portion of Madagascar, the dry, sandy soil of the western side of the island not suiting them. It is an essentially social bird, living in flocks of sometimes a hundred or more, but generally averaging ten to a dozen individuals; however, during the nesting season, the males are liable to quarrel. They mostly frequent the open country, especially near streams, and follow the flocks of cattle, perching upon their backs or searching for their food upon the ground, for they feed like our Common Starling, upon all descriptions of insects, and occasionally upon fruit and grain. They are not shy, have a powerful, rather heavy flight, and roost among the boughs of trees. He calls their flesh fairly good eating.

They leave the open country for the woodlands on the approach of the breeding season to seek for suitable places to build in, and are not to be met with near the sea-shore during the rainy season, at least, from November to March. The egg is pale blue, with variable sized spots of brownish red mostly towards the thick end, and measure 0·92 × 0·68.

On account of their frequenting the cattle they are called by the natives "Vorontianomby" (friend of cattle).

Genus III. CINNYRICINCLUS.

Bill black, short, wide at the gape, and the culmen rather strongly curved. Wing much longer than the tail, pointed; third primary longest, or equal in length to the second and fourth. Tail square with the centre feathers slightly the shortest. Tarsi, feet and claws black.

- Type.*
- Cinnyricinclus, Less-Rev. Zool. 1840, p. 272 *C. leucogaster.*
 Pholidanges, Cab. Mus. Hein. i. p. 198 (1851) *C. leucogaster.*
 Pholia, Reichen. Orn. Monatsb. 1900, p. 99 *C. sharpei.*
 The genus is confined to Tropical and South Africa, and comprises five species.

KEY TO THE SPECIES.

- a.* No spots or stripes on the under parts.
*a*¹. Breast and under tail-coverts white.
*a*². Head, neck and back rich metallic violet.
*a*³. No white on outer tail-feathers *leucogaster*, ♂, ad.
*b*³. A white outer edge to the tail. *verreauxi*, ♂, ad.
*b*². Head, neck and back not rich metallic violet.
*c*³. Head, neck and back silvery grey *fischeri.*
*d*³. Head, neck and back bluish black *femoralis.*
*b*¹. Breast and under tail-coverts pale cinnamon; throat white *sharpei.*
- b.* Some stripes or spots on the under parts.
*c*¹. Upper parts rufous-shaded brown, some broad pale cinnamon inner edges to the quills . . . *leucogaster* and *verreauxi*, ♀, and juv.
*d*¹. Upper parts more sooty brown, often with a bluish gloss *sharpei*, juv.

Cinnyricinclus leucogaster.

- Turdus leucogaster*, Gm. S. N. ii. p. 819 (1788) *Whidah.*
Cinnyricinclus leucogaster, Reichen. Vög. Afr. ii. p. 679 (1903); Kemp, Ibis, 1905, p. 246 *Sierra Leone*; Neum. J. f. O. 1905, p. 237; Erlanger, t. c. p. 707 *N. E. Afr.*
Lamprotornis leucogaster, Swains. B. W. Afr. i. p. 152, pl. 8 (1837).
Pholidanges leucogaster, Sharpe, Cat. B. M. xiii. p. 121 (1890); Shelley, B. Afr. I. No. 580 (1896).

Adult male. Entire head, neck, back and upper tail-coverts brilliantly glossed with broad violet ends to the feathers, and most of the feathers on the back have subterminal steel blue bars; tail blackish brown, with the centre feathers and portion of the outer webs of the others glossy violet; wings brownish black, with nearly the whole of the coverts and inner secondaries glossy violet like the back; under wing-coverts with a few white

edges near the bend of the wing; crop, under surface of body and the under tail-coverts pure white passing into dusky ash on the flanks, with a few blackish stripes on the neighbouring white feathers. Iris yellow; bill and feet black. Total length 7·1 inches, culmen 0·5, wing 4·2, tail 2·6, tarsus 0·8. Mensa (Esler).

Adult female. Upper parts and sides of head brown, with pale edges to the feathers; the nine long primaries, with a large portion of their inner webs pale cinnamon; the small first primary and the under wing-coverts brown, the latter somewhat mottled with pale cinnamon and buff edges; under parts white with a very slight sandy tinge on the throat and nearly all the feathers spotted or striped with dark brown. Wing 3·95, Mensa (Esler).

Immature of both sexes. Like the adult female, but the pale edges of the feathers of the upper parts generally broader and more rufous. In the moult of the males the feathers do not change their colour, but are shed. This is well shown in one of Kirby's specimens from the Gold Coast. On each wing the two outer long primaries are in the rufous stage, the next quill being half grown and uniform black like the other quills.

The Northern Violet-backed Starling ranges over Tropical Africa from 17° N. lat. to Gaboon, on the west, and to the Equator in Central and Eastern Africa.

In West Africa the species is known to range from St. Louis at the mouth of the Senegal River, into Gaboon, and is apparently abundant and very evenly distributed over this part of Africa to the north of 5° N. lat., and is likewise plentiful in North-east Africa until we approach Somaliland and the Equator. It meets with its very near ally, *C. verreauxi*, along its southern range, but we have no reason to suppose that they ever interbreed, for the amount of white on the outer webs of the tail, the only distinguishing mark for *C. verreauxi*, is very constant.

C. leucogaster has been procured on Bulama, the only island from whence the species has been recorded. In Liberia, Mr. Büttikofer met with it most frequently in the open country, the females and young birds perching together on the bushes while the full-plumaged males kept by themselves at some little distance. During my visit to the Gold

Coast I met with the species on a few occasions in February, between Accra and Abokobi, always in fairly large flocks of about a score. Ussher writes: "This bird is widely distributed over the whole of the Guinea Coast, and is of very general occurrence on the Gold Coast. It is usually observed in pairs, and occasionally in some numbers. I have seen the low bushes in the vicinity of the town of Lagos (on the Slave Coast) tenanted by them in large quantities, the brilliant plumage of the male contrasting markedly with the sober colouring of the female and the pied tints of the immature birds. They were feeding eagerly on the berries of a description of 'wait-a-bit' thorn, very abundant in some localities of the Guinea Coast. The male in full plumage, seen flying low in the bright sunlight, is undoubtedly one of the most exquisite birds in Africa; and a marked difference in colour is observable among even full-plumaged males, some having coppery or golden reflections on the rich puce colour of the feathers, whilst others decidedly incline to a deep violet blue of equal beauty. Their habits appear to be similar to the Shining Grackles' in general, and did not present anything noteworthy to my observation."

In our Gold Coast Colony Mr. Boyd Alexander obtained specimens at Gambaga, Krachi and Pong, and writes: "A migrant in the Hinterland. Small flocks appeared at Gambaga in May. According to Captain Giffard, the bird is again common there in August."

Mr. Hartert met with the species at Loko, on the Niger, in May and July, feeding on fruit. Further south it is apparently rare, for it is known to me from Camaroons by a specimen procured by Mr. Zenker at Jaunde; Aubry Lecomte and Gujon obtained it in Gaboon, and there are specimens in the British Museum collected by Bohndorff, at Sassa and Semio, in the Niam-Niam country.

On the eastern side of the continent, the most southern range known for the species is Nandi; here Mr. Jackson met with a flock of five or six, "attracted by the small fruit of a large tree in the garden." Mr. Harrison obtained the species at Lake Margarita and at Bunge, Mr. Pease shot the only one he saw in Somaliland, at Somadu, and Lord Lovat writes: "Met with only in the valley of the Blue Nile and its tributaries. I once observed this Starling hawking for flies like a Bee-eater." The species has not been recorded from Shoa, but is apparently as plentiful in Central and Northern Abyssinia as on the Gold Coast, and being strong on the wing they change their quarters according to their requirements, for Heuglin found them in the lowlands of Semien, along the Mareb and Takase Rivers, and in Bergemeder up to 9,000 feet. In May and June they were abundant on the low ground of the Samhar coast, at the Anseba and in Bogosland in families of young and old birds. Early in summer he found them assembled in large flocks, consisting of both young and old birds in the thick forests between the Gazelle and Kosanga Rivers.

Cinnyricinclus verreauxi.

Pholidauges verreauxi, Bocage in Finsch and Hartl. Orn. O. Afr. p. 867 (1870) *Caconda*; id. Orn. Angola, p. 314, pl. 5 (1881); Sharpe, Cat. B. M. xiii. p. 123 (1890); Shelley, B. Afr. I. No. 581 (1896); Grant, Ibis, 1905, p. 201 *Uganda*.

Cinnyricinclus verreauxi, Reichen. Vög. Afr. ii. p. 680 (1903).

Adult male. Similar to that of *C. leucogaster*, from which it differs only in having some white on the outermost pair of tail-feathers; these are blackish brown, with the basal two-thirds of the outer web white and the remaining third with a very narrow white edge. Iris yellow; bill and feet black. Total length 7.2 inches, culmen 0.55, wing 4.25, tail 2.6, tarsus 0.8. ♂, 20. 11. 96, Ravine (Jackson).

Adult females and immature birds. Like those of *C. leucogaster*.

The Southern Violet-backed Starling ranges in Western Africa from Loango into Damaraland and throughout Central and Eastern Africa, from the Orange River Colony and Natal to about 1° N. lat.

The species has been obtained in Loango by Falkenstein, Lucan and Petit; by Bohndorff at Leopoldville on the Congo, and is generally distributed over Angola, Benguela and Damaraland. The species was discovered at Caconda by Anchieta, according to whose notes, it feeds principally upon fruit, and is known to the natives by the following variety of names: "Giröe" at Biballa, "Quiro-musole" at Quillegues, "Sue-Sue" at Humbe and "Donga" at Caconda. Chapman wrote: "Common in the Lake regions and in Damaraland, but here only as a migratory bird. A few individuals, however, probably remain throughout the year, for I have observed such long after the general migration is over. The male arrives first, and, so far as I have observed, associates but little with the female, who differs so marvellously from him" [Trav. Interior S. Afr. ii. p. 404 (1868)].

The species is apparently absent from Namaqualand and Cape Colony, although it has been found in the Orange River Colony and Southern Natal, and is abundant from the Vaal River to the Equator; a few have been observed north of the Line, where it meets with its near ally, *N. leucogaster*. Mr. T. L. Ayres told me that it occurs at Durban as well as Pinetown, but was never very common there. His father remarked that in Natal it is less plentiful than the other Glossy Starling ("Ibis," 1862, p. 29); "Small fruits form their principal diet, although they sometimes feed on flies and the winged females of the white ant, rising and taking them on the wing similarly to Flycatchers. In fact, almost every bird and beast that I know will occasionally feed on

these insects, which in the spring of the year swarm out by millions, when hawks, dogs, cats, toads, &c., &c., all feast alike." Stark adds the following observations: "These beautiful Starlings, although not so common as some of the other Glossy Starlings in Natal, are by no means rare in autumn and winter. At this season they are almost invariably in flocks, consisting entirely of either male or female birds. Towards spring they appear to migrate northwards, sometimes after they have paired.

"In the Transvaal many of these birds are resident, particularly in the Rustenburg district, where they breed; at the same time the majority appear to migrate towards spring. When migrating or moving for any distance, they fly in flocks and usually at a considerable height.

"This species builds its nest in the holes of trees, in the Transvaal in December, lining some natural hollow, or the old nest-hole of a Barbet, with wool and feathers, over which they place green leaves which are removed from time to time. The eggs, usually four in number, are pale blue, sparingly spotted with pale brown at the large end. They measure 0.90×0.70 ."

In Mashonaland, Mr. Guy Marshall found it to be scarce at the Umfuli River, "an occasional pair only being met with; during September and October, 1898, however, they visited Salisbury in some numbers, to feast on the spring crop of wild figs, which attract a number of frugivorous and insectivorous birds. Their cries are somewhat harsh, but the male frequently utters a very sweet, plaintive whistle."

Sperling includes the species among others which he calls: "Plentiful at Mosambique." Sir John Kirk has procured it at Tete on the Zambesi; a large series has been collected from many places in Nyasaland, and northward to the Tana

River it is apparently to be met with everywhere, including the islands of Zanzibar, Mombasa and Manda; and according to Hildebrandt is known to the natives of Duruma as the "Kwele." In Central Africa it has been procured at Kimoani on the south western shore of Victoria Nyanza, by Stuhlmann, and on the neighbouring island of Sirwa by Emin. In Uganda Dr. Ansorge obtained an adult male at Msarosaro, and Mr. Jackson saw it "plentiful in twos and threes" at Savé on Mount Elgon; he also obtained specimens at Njemps and the Mau Ravine, where he found them fairly abundant, but only singly or in pairs and were breeding on March 4. "Nest found in hole of hollow stump, 5 feet from the ground, composed of fine green leaves, small, like those of privet. Two eggs, pale greenish blue, with reddish brown speckles, much incubated." He has also procured a specimen on Manda Island: "Shot out of a large flock" ("Ibis," 1888, p. 303).

Cinnyricinclus fischeri.

Notauges fischeri, Reichen. J. f. O. 1884, p. 54 *Pare Mts.*; Fischer, Zeitschr. ges Orn. i. p. 335, pl. 20, fig. 1 (1884).

Spreo fischeri, Sharpe, Cat. B. M. xiii. p. 189 (1890); Reichen. Vög. Afr. ii. p. 677 (1903); iii. p. 837 (1905); Erlanger, J. f. O. 1905, p. 705.

Pholidauges fischeri, Shelley, B. Afr. I. No. 583 (1896).

Type. "Head, throat and crop silver grey, the latter darker; lores black, under parts white; back, wing and tail earth brown with a silky gloss, the tail-feathers and inner quills glossed with steel green. Iris pale yellow; bill and feet black; cere yellowish. Total length 6·8 inches, culmen 0·68, wing 4·0, tail 2·6, tarsus 1·16 (Reichen.)."

Fischer's Starling ranges from the Pare Mountains through Masailand to the Jub River in Somaliland.

The species was discovered by Fischer on the Pare plains, who only saw these birds on one occasion, on August 5, when a flock of about six individuals approached the river to



1. *Cosmopsarus unicolor*.
2. *Cimyrincinclus femoralis*.

drink, and as they were shy he could only obtain a single female specimen. Ansorge has procured the species at Kinani in Southern Ukamba, and Erlanger has met with it in South-western Somaliland at Bardera on the Jub River, and along one of its tributaries, the Dau, he collected fourteen of their eggs on April 30 and May 1. The nest he describes as a large rounded structure, 10 inches in diameter, with an entrance, facing east, 2 inches wide, composed of grass-stalks, of finer texture towards the interior, which was lined with feathers. The eggs, usually six in number, he likens to those of our Song-Thrush, and the measurements he gives of them varies from 1.2×0.75 to 0.85×0.65 .

Cinnyricinclus femoralis (Plate 44, fig. 1).

Pholidauges femoralis, Richmond, Auk. 1897, p. 160 *Kilimanjaro*.

Spreo femoralis, Reichen. Vög. Afr. ii. p. 678 (1903).

Pholidauges fischeri (non Reichen.), Sharpe, Cat. B. M. xiii. p. 667 (1890) *Kilimanjaro*.

Adult male. Plumage glossy black, with the breast and under tail-coverts creamy white; head, neck, back, scapular, lesser wing-coverts, under wing-coverts, front of chest, flanks and thighs of a more purple shade; remainder of the wings and tail greener. Iris pale yellow; bill and feet black. Total length 6.3 inches, culmen 0.45, wing 3.9, tail 2.7, tarsus 0.9. ♂, 8. 8. 88, Kilimanjaro (Hunter).

Abbott's Starling inhabits Kilimanjaro.

The type, an adult male, was discovered by Dr. W. L. Abbott, July 11, 1888, on Mount Kilimanjaro, at an elevation of 6,000 feet. Mr. H. C. V. Hunter, who was likewise on Kilimanjaro, during his expedition into East Africa from June to August, 1888, also obtained an adult male of this species in the forest of the mountain at 6,000 feet, which I referred to in the following year as the male of *C. fischeri* (P. Z. S., 1889, p. 368). This is all that is yet known regarding this Starling.

Cinnyricinclus sharpei.

- Pholidauges sharpei*, Jackson, Bull. B. O. C. viii. p. 22 (1898); id. Ibis, 1899, p. 590, pl. 12 *Nandi*, *Eldoma*.
Pholia sharpei, Reichen. Vög. Afr. ii. p. 682 (1903); Neum. J. f. O. 1905, p. 238; Erlanger, t. c. p. 708 *N. E. Afr.*
Pholia hirundinea, Reichen. O. M. 1900, p. 99 *Rungwe*.

Adult male. Upper parts black with a steel blue gloss of a more bronze shade on the top and sides of the head and greener on the quills and tail; under parts buff changing gradually into pale rufous on the lower breast, thighs and under tail-coverts; sides of body mottled with glossy bluish black feathers; under surface of tail and wings dull brownish black, washed on the under wing-coverts with steel blue. "Iris bright yellow; bill and legs black." Total length 7.2 inches, culmen 0.55, wing 4.1, tail 2.75, tarsus 0.85. ♂, 7. 3. 97. Ravine (Jackson).

Adult female. Differs in the dark parts being browner and less glossy; chin, upper throat and chest with blackish angular shaft spots. Wing 3.8. ♀, 27. 3. 97. Ravine (Jackson).

Immature male. Like the female.

Sharpe's Starling inhabits East Africa from 10° S. lat. to nearly 10° N. lat. and 40° E. long.

In German East Africa, towards the northern end of Lake Nyasa, Mr. Fülleborn procured the species in October at Ngasi in the Rungwe highlands, where, he states, it was nesting in company with Swallows in holes along a cliff side. The accuracy of this statement is doubted by Mr. Oscar Neumann, who remarks that he found the species frequenting only the thick forests, and that its habits closely resemble those of the other members of this genus. He collected specimens between Lake Rudolf and the Blue Nile in the Malo, Kaffra, and Gimirra countries. As the late Baron Erlanger procured a single specimen in the east of this district at Mara, the range of the species probably extends nearly to 10° N. lat. and 40° E. long. Mr. Jackson has collected specimens at the Mau Ravine in March and August and in the Nandi forest in May. In the former locality

he found the species "fairly plentiful in small flocks of from three to eight," and had been feeding on berries and insects.

Genus IV. SPECULIPASTOR.

This genus differs from all the others found in the Ethiopian Region in having the entire basal portion of the quills white, forming a strongly marked speculum on the wing, from whence its Latin name is derived.

Bill black, rather wide at the gape and the culmen curved. Wing pointed; third primary longest or equal in length to the second and fourth. Tail rounded; tarsi, feet and claws black.

Type.

Speculipastor, Reichen. Orn. Centralbl. 1879, p. 108 . . . *S. bicolor*.

The genus is confined to Tropical Africa, where it is represented by a single species.

Speculipastor bicolor.

Speculipastor bicolor, Reichen. Orn. Centralbl. 1879, p. 108 *Kipini*;

Fischer and Reichen, J. f. O. 1879, p. 349, pl. 1, figs. 2, 3; Reichen.

Vög. Afr. ii. p. 682 (1903); Erlanger, J. f. O. 1905, p. 707 *Jub River*.

Pholidauges bicolor, Sharpe, Cat. B. M. xiii. p. 125 (1890); Shelley,

B. Afr I. No. 582 (1896); Witherby, Ibis, 1905, p. 518 *Somali*.

Adult male. Head, neck, upper parts, and a broad under margin to the bend of the wing, including the small first primary, black; basal third of the other primaries creamy white like the remainder of the under wing-coverts, breast, thighs and under tail-coverts; the feathers of the head, neck, and back with glossy blue black edges; dark portion of wings and the tail slightly browner and much less glossy. "Iris orange yellow; bill and feet black." Total length 8.2 inches, culmen 0.65, wing 4.5, tail 3.3, tarsus 1.05. Haud Plateau (L. Phillips).

The Black-and-White Starling ranges eastward from the Tana River through Somaliland.

The species was discovered at Kipini, close to the mouth of the Tana River, by Fischer, who collected two males and a female on July 11, probably out of one flock. These Starlings were next observed in Somaliland by Mr. Lort

Phillips, who wrote: "Only met with in flocks on two or three occasions. They were very shy, and flew at a considerable height, frequently uttering their peculiar cry, which consists of a single whistling note. Native name 'Shimber Arnot' (Sheep-bird). They are said to be common in the Gudabirsi country to the west." It has been obtained by Captain A. E. Hamerton, at Bera, May 4, 1903, and he records the iris as "crimson." Erlanger found the species breeding in colonies, on April 8, 1901, near the source of the Dau River, in a bush-country interspersed with fine acacia trees and ant-hills. In these latter hard sandy masses, often six metres in height, the birds placed their nests in holes from 4 to 8 inches deep by $2\frac{1}{2}$ wide, and constructed them of green grass-stalks and the still greener leaves of a kind of clover. The eggs, three to four in number, are described as like those of our Blackbird, and measured 1.5×0.8 to 0.92×0.78 , in a series of thirteen examples he brought home. His collection of skins contained specimens from several places along the rivers and from Kismaju on the coast.

Genus V. COSMOPSARUS.

Bill black of moderate size, somewhat Thrush-like; nasal orifice exposed at the end of a short groove. Wings long and pointed, shorter than the tail; third primary longest or equal in length to the second and fourth. Tail long and strongly graduated, with the feathers narrow, the centre ones less than 0.5 inch broad towards their ends. Legs rather long, with the tarsi, feet and claws black.

Type.

Cosmopsarus, Reichen. Orn. Centralbl. 1879, p. 108. . . . *C. regius.*

The genus is confined to Eastern Africa and comprises two species.

KEY TO THE SPECIES.

- a. Breast yellow; upper parts steel blue with a little green. . . . *regia.*
 b. Uniform ashy brown with a green gloss *unicolor.*

Cosmopsarus regius.

Cosmopsarus regius, Reichen. Orn. Centralbl. 1879, p. 108 *Massa*; Fischer and Reichen. J. f. O. 1879, p. 324, pl. 1, fig. 1; Sharpe, Cat. B. M. xiii. p. 160 (1890); Shelley, B. Afr. I. No. 584 (1896); Reichen. Vög. Afr. ii. p. 713 (1903); Witherby, Ibis, 1905, p. 518 *Somali*; Erlanger, J. f. O. 1905, p. 711 *Gallaland*; Reichen. Vög. Afr. iii. p. 838 (1905).

Adult. Back and wings bright steel blue, shading into golden green on the head and neck; upper tail-coverts slightly greener than the mantle; tail glossy bronze shading into dusky violet towards the ends and inner edges of all but the centre pair of feathers; outermost feather with an imperfect margin and shaft-stripe buff; wings deeper blue than the back, with a gloss of violet red on the outer webs of the primaries; median and greater coverts with black terminal spots to a few of the feathers; under surface of the tail and quills black; under wing-coverts, with a broad outer band of them, steel blue, the remainder glossy golden yellow like the entire breast, thighs and under tail-coverts; lores black, shading into steel blue on the ear-coverts; the green neck shading into steel blue on the lower throat passes into a broad reddish violet crop-band. Iris white; bill and feet black. Total length 14 inches, culmen 0·75, wing 5·1, tail 8·5, tarsus 1·25. ♂, 2. 12. 97, Arabsiyo (Hawker), and ♀, 4. 12. 94, Dulugop (Gillett). Wing 5·4, tail 9·6.

Immature. Much duller; head and neck brown with the throat paler; the black spots on the wing-coverts and the red shade on the primaries almost absent; base and ends of centre tail-feathers strongly shaded with dusky violet; most of under wing-coverts, like the breast, yellowish sand-colour. Wing 5·0, tail 6·4.

The Golden-breasted Glossy Starling ranges from the Pare Mountains into Southern Abyssinia.

The species was discovered at Massa by Fischer, who also met with it on the Pare Plateau, on two occasions, frequenting the scattered acacia bushes in parties of six to eight, and was very shy. These habits of the bird hold good throughout its range, and it appears to be nowhere very abundant, though most plentiful in Somaliland.

Dr. Hind obtained a specimen at Machako's, and Mr. Jackson one on the Wilderness Mountain near Ndai, and calls them "plentiful, in small flocks of four to eight." In Western

Somaliland Dr. Donaldson Smith procured several specimens. Mr. Hawker writes: "I found these birds distributed from within thirty miles of Berbera to the western frontier of Harar. They went in flocks often with *Spreo superbus*, but were rather shy and did not feed about the camp like the latter bird." Mr. Lort Phillips remarks: "This bird is far from plentiful, but is to be met with on the open plains in small parties of three or four. I never noticed it in the thickly wooded parts of the Goolis, nor could I find out where it nested. A flock of these gorgeous birds in the dazzling sunshine is a sight not to be forgotten." Mr. Elliot observes: "When flying it was a graceful object as it floated in the air with the long tail spread out to its full extent." Mr. Pease has met with it in Northern Somaliland and at Errer Gota in South Abyssinia, which is the most northern range known for the species. In the Western Somali district, between the Jub River and Shoa, Erlanger procured several specimens, and, on April 4, found a pair had built in a hole of a tree 12 to 13 feet from the ground. The nest was composed of shreds of bark, straw and small leaves, and although it was empty the two old birds remained in the vicinity during his inspection. Another nest, found on the following day, was placed in the cleft of a tree at about a yard from the ground, and was composed of roots, feathers and bits of snake-skin, and contained two hard-set eggs. These eggs were of a pale bluish green, with a few small rufous spots mostly towards the thick end, and measured 1.1×0.76 .

Cosmopsarus unicolor (Plate 44, fig. 2).

Cosmopsarus unicolor, Shelley, *Ibis*, 1881, p. 116 *Ugogo*; Sharpe, *Cat. B. M.* xiii. 160 (1890); Shelley, *B. Afr.* No. 585 (1896); Reichen. *Vög. Afr.* ii. p. 712 (1903).

Type. General colouring ashy brown; a triangular patch in front of the eyes almost black; wings and tail glossed with green, and with numerous

narrow dark bars, only visible in certain lights; wing-coverts but slightly glossed with bronzy green; the green gloss on the secondaries rather stronger; primaries nearly black, with the green gloss generally of a deeper shade than on the remainder of the wing; tail deep glossy green, or brownish black very strongly glossed with green, and with numerous narrow black obsolete bars, more distinct than on the wing-feathers; under surface of tail black. Iris yellowish white; eyelids brown; bill and feet black. Total length 12 inches, culmen 0·7, wing 5·1, tail 7·3, tarsus 1·35. Ugogo (Kirk).

The Ashy Glossy Starling ranges from Ugogo to the Victoria Nyanza, and as far west as Usambiro.

The types, three very similar specimens, were discovered by Sir John Kirk in Ugogo, where, according to Dr. Pruen, it is known to the natives as the "Sasati." Emin informs us that it is very common in that country, and it is apparently abundant throughout its present known range, specimens having been collected at many places by Böhn, Fischer and Stuhlmann, all between 3° 30' S. lat. and 7° S. lat. and inland from the coast to Usambiro, near the south-west extremity of Victoria Nyanza.

Genus VI. LAMPROTORNIS.

Bill black, of moderate size, somewhat Thrush-like; nasal orifice exposed at the end of a short groove. Wing long and pointed; third primary one of the longest. Tail variable in length and shape, but the feathers are never narrow when the tail is longer than the wing. Tarsi fairly long, and black like the feet and claws. Plumage similar in both sexes, and, at least, in adults, is almost entirely richly glossed in metallic shades of green, blue, violet, copper or bronze, the less glossy parts being black.

Type.

Lamprotornis, Temm. Man. Orn. i. p. 55 (1820) . . .	<i>L. caudatus.</i>
Juida, Less. Traité, p. 407 (1831)	<i>L. caudatus.</i>
Lamprocolius, Sundev. K. Vet. Ak. Handl. Stockh. 1835, p. 104 (1836)	<i>L. phænicopterus.</i>
Megalopterus (non Boie), Smith, Rep. Exp. Centr. Afr. p. 52 (1836)	<i>L. australis.</i>
Usauges, Cab. Mus. Hein, i. p. 200 (1851).	<i>L. caudatus.</i>

- Coccycolius, Oust. Bull. Ass. Sc. France, xxiii. p. 159
 (1878) *L. iris.*
 Chalcopsar, Sharpe, Cat. B. M. xiii. p. 158 (1890) . . . *L. australis.*
 Heteropsar, Sharpe, t. c. p. 185 *L. acuticaudus.*

The genus is confined to Tropical and South Africa, and comprises 19 species and subspecies.

KEY TO THE SPECIES.

- a.* Tail more strongly graduated (graduation more than 2 inches); tail more strongly marked with narrow dusky bars.
- a*¹. Tail longer than the wing (some specimens of *L. purpuropterus* excepted).
- a*². Head bronze, contrasting sharply in colour with the neck and back.
- a*³. Flanks and under tail-coverts steel blue; larger.
- a*⁴. Neck, mantle and wings glossy green *caudatus.* 55
- b*⁴. Neck, mantle and wings more steel blue *eytoni.* 53
- b*³. Flanks and under tail-coverts violet or reddish purple; smaller.
- c*⁴. Smaller: average measurements, wing 6·0, tail 6·1 *purpuropterus.* 56
- d*⁴. Larger: average measurements, wing 6·6, tail 8·0 *æneocephalus.* 56
- b*². Head of the same shade as the neck and back.
- c*³. Throat and crop more steel blue *mevesi.* 57
- d*³. Throat and crop of a more purple shade *benguelensis.* 57
- b*¹. Tail shorter than the wing *australis.* 62
- b.* Tail less graduated.
- c*¹. Outer tail-feathers fall short of tip of tail by more than the length of hind toe without claw.
- c*². Primaries with a deep angular notch on their inner webs; tail velvety black glossed on the sides and ends with the same colour as the upper tail-coverts.
- e*³. Back, throat and chest glossed with brass bronze *ornatus.* 64
- f*³. Back, throat and chest not glossed with brass bronze.
- e*⁴. Throat redder; more copper shade across the chest *splendidus.* 64
- f*⁴. Throat bluer; less copper shade across the chest. *chrysonotis.* 67

- d*². Primaries with no angular notch; tail more wedge-shaped and glossy green like the general plumage . . . *acuticaudus*.
- d*¹. Tail more square; inner edges of primaries often waved, but with no angular notch.
- c*². Tail-feathers broader; gloss not so intensely metallic.
- g*³. Tail entirely glossed; some black spots on ends of wing-coverts.
- g*⁴. Throat green or blue.
- a*⁵. Tail with no shade of violet or red.
- a*⁶. Entire body green.
- a*⁷. Larger: wing 5·4 to 6·0 inches . . . *phœnicopterus*.
- b*⁷. Smaller race: wing 4·6 to 5·5 . . . *bispecularis*.
- b*⁶. Abdomen and flanks shaded with blue . . . *chalybeus*.
- b*⁵. Tail with some blue and violet red . . . *chalcurus*.
- h*⁴. Throat, front of crown and the under parts reddish purple . . . *purpureus*.
- h*³. No green gloss on the tail; no black spots on wings.
- i*⁴. Throat glossed with reddish violet.
- c*⁵. Crown like the back; forehead only black . . . *cupreocauda*.
- d*⁵. Crown entirely black . . . *purpureiceps*.
- k*⁴. Throat glossed with green . . . *melanogaster*.
- f*². Tail-feathers narrow, only 0·5 inch broad; gloss intensely metallic . . . *iris*.

Lamprotornis caudatus.

- Turdus caudatus*, P. L. S. Müll. S. N. Suppl. p. 144 (1776) *Hab.*?
- Lamprotornis caudatus*, Sharpe, Cat. B. M. xiii. p. 154 (1890); Shelley, B. Afr. I. No. 586 (1896); Reichen. Vög. Afr. ii. p. 708 (1903).
- Turdus longicauda*, Bodd. Tabl. Pl. Enl. p. 13 (1783).
- Lamprotornis longicauda*, Swains. B. W. Afr. i. p. 148, pl. 7 (1837).
- Turdus œneus*, Gm. S. N. ii. p. 818 (1788) *Senegal*.
- Le Vert Doré, Levaill. Ois. Afr. ii. p. 146, pl. 87 (1799).

Subspecies a.

- Juida eytoni*, Fraser, P. Z. S. 1856, p. 368 *W. Africa*.
- Lamprotornis eytoni*, Sharpe, Cat. B. M. xiii. p. 155 (1890); Shelley, B. Afr. I. No. 588 (1896); Reichen. Vög. Afr. ii. p. 709 (1903).

Adult of L. caudatus. Head glossy bronze passing into black in front of the eyes; neck, mantle, wings and crop glossy golden green shading into steel blue on the lower back, where there are some black subterminal marks

on the feathers; ends of the upper tail-coverts and the tail glossy violet of a more bronze shade down the middle and greener at the sides; tail-feathers with numerous indistinctly-marked blackish bars; wing-coverts, with some black subterminal marks largest towards the scapulars; the green throat inclines to violet where it meets with the bronze of the head and shades into the steel blue of the flanks, thighs and under tail-coverts, and into violet strongly glossed with copper on the centre of the chest; centre of abdomen blackish. Iris yellow; bill and feet black. Total length 19·2 inches, culmen 0·9, wing 7·5, tail 11·5, tarsus 1·75, Senegal.

Type of L. eytoni. Differs in being bluer; neck and mantle steel blue, with a slight shade of violet on the mantle and of green on the wings and throat; the black markings on the wings and lower back less distinct. Total length 18 inches, culmen 0·8, wing 6·7, tail 11·5, tarsus 1·55. *West Africa.*

A specimen from Fantee (Ussher) has the wing 7·0 and the plumage more shaded with green, and is intermediate between the two specimens above described.

The Greater Long-tailed Glossy Starling ranges over Northern Tropical Africa from Senegal to the Niger and eastward into Abyssinia; but the bluer form, *L. eytoni*, has not been recorded from further east than Fantee.

I doubt *L. eytoni* being even a good subspecies, as it is known only from the districts inhabited by *L. caudatus*, and as yet we know little with regard to the moult of these species. In one of Ussher's specimens in the green plumage, from Fantee, wing 7·8, the tail has changed, prior to the moult, into violet-shaded bronze with one new centre feather bright violet shaded steel blue.

Dr. Reichenow refers to *L. eytoni* two specimens in the Berlin Museum, one from Senegal and the other from the Gambia, and to this form belongs one of Captain Giffard's specimens labelled "♂, Gambaga, 25. 9. 1898. Iris yellow," of which Dr. Hartert writes: "This bird is on the breast, neck, back, and wings purplish blue, and is therefore *L. eytoni* (Fras.), if that is a distinct species. An adult female from Moshi, 1. 7. 1898; iris light yellow, has the back, breast, and

wings oil green, without the slightest mixture of purple blue. This would be the true *L. caudatus*."

Mr. Boyd Alexander writes: "An adult male from Karaga, where the species is rare. It frequents the open bush-country, nesting in holes in the big baobab-trees. Our specimen has the back, breast and wings oil green, with no trace of purple blue. It agrees well with a female specimen obtained by Giffard at Moshi. The sexes are therefore alike in plumage. The similar birds with the purple blue colour would be *L. eytoni* (Fras.). There seems to be no reason why it should not stand as a distinct species."

Marche and de Compiègne collected specimens at Dakar, Ruffique, Hann, Deine, Daranka, Tinghinchor and Sédhiu. Dr. Rendall procured it once near Bathurst on the Gambia, and Mr. Budgett mentions it as very common on M'Carthy Island. Erman has recorded the species from Prince's Island, but this statement is incorrect, *vide* "Dohrn, P. Z. S.," 1866, p. 331.

In the Niger district Dr. Hartert found it to be one of the most abundant of the Glossy Starling between Saria, Kamo and Socota, and procured a specimen at Kotorkoschi in the northern highlands, which had been feeding upon fruit.

To the eastward it is distributed over the Gazelle River district, Kordofan and Sennar, and I cannot trace its range further south or east. Heuglin remarks that although it is resident in these parts, it shifts its quarters in accordance with the supply of food, and moults in November and December. It is a shy bird, frequenting the woodlands in pairs or family parties of six to eight individuals, and is noisy and active, searching the thick foliated high trees for fruit, buds and insects, and will occasionally capture the latter while on the wing. Of a morning they may be seen in flocks with other Glossy Starlings near water, and when on the ground they strut about with their tails erect.

The eggs have been described by Mr. Kuschel as glossy greenish blue 1.06×0.81 , and by Mr. Nehr Korn as deep blue, with evenly distributed dots of pale brown, and measuring 1.12×0.8 .

Lamprotornis purpuropterus.

- Lamprotornis purpuropterus, Rüpp. Syst. Uebers. pp. 64, 75, pl. 25 (1845) *Shoa*; Reichen. Vög. Afr. ii. p. 710 (1903); Neum. J. f. O. 1905, p. 243 *Shoa*; Ernanger, t. c. p. 710 *Jub River*.
 "Juida æneoides, Temm." Bp. Consp. i. p. 415 (1850) *Africa*.
 Urauges porphyropterus, Cab. Mus. Hein. i. p. 200 (1851) *Abyssinia*.
 Lamprotornis porphyropterus, Sharpe, Cat. B. M. xiii. p. 156 (1890); Shelley, B. Afr. I. No. 589 (1896).
 Lamprotornis viridipectus, Salvad. Mem. Acad. Torino, 1894, p. 560 *Somali*.
 Lamprotornis brevicaudatus, Sharpe, Bull. B. O. C. vi. p. 48 (1897) *Elgeyu*.

Subspecies a.

- Lamprotornis æneocephalus, Heugl. Faun. Rot. Meer. p. 24 (1861); id. J. f. O. 1863, p. 22 *Abyssinia, Kordofan, White Nile*.
 Lamprotornis purpuropterus æneocephalus, Reichen. Vög. Afr. ii. p. 710 (1903).
 Lamprotornis porphyropterus (non Cab.), A. L. Butler, Ibis, 1905, p. 324 *Soudan*.

Adult male. Entire head glossy bronze; upper parts glossy green passing into reddish violet on the lower back and upper tail-coverts, and shaded with that colour on the upper back and slightly more strongly so on the hind neck; tail violet blue, the centre feathers with some thirty obscurely marked darker bars, and these bars are also present but less marked on the upper tail-coverts; wings uniform green or violet; chin and upper throat bronze with a margin of violet and blue passing into green on the lower throat; centre of chest coppery bronze shading into glossy violet on the remainder of the breast, thighs and under tail-coverts; under surface of tail and wings brownish black with a wash of metallic bluish green on the under wing-coverts. "Iris straw colour; bill and legs black." Total length 12 inches, culmen 0.85, wing 6.2, tail 6.3, tarsus 1.6. ♂, 28. 1. 90, Suk (Jackson).

Adult female. Similar, but smaller. Wing 5.5. ♀, 28. 1. 90, Suk (Jackson).

L. æneocephalus. Like the above in colouring, but is distinguished by

its larger size and longer tail. On an average, wing 6.6 inches, tail 8.0, graduation of tail more than 3 inches.

This form may be regarded as a connecting link between *L. purpuratus* and *L. caudatus*.

Rüppell's Long-tailed Glossy Starling ranges over Eastern Africa and the Lake district from about 6° S. lat. to 9° N. lat.

To the east of Lake Tanganyika the species has been procured by Böhn as far south as Ugallaland, and by Glanning at Malagarazi. It is abundant throughout the Victoria Nyanza district from Speke's Gulf, where it has been obtained by Fischer and Trotha, to Bukoba and Itali (Stuhlmann), Usongora and Uganda (Ansorge). In the Upper White Nile district it has been met with at Lado, Dufile and Magungo (Emin); Djur and Bongo (Heuglin), and Fashoda (Hawker). Mr. Hawker found it to be "very common on Abba Island, and met with it further south" ("Ibis," 1902, p. 401). I have quoted this reference, as Mr. Ogilvie Grant has here made some original notes with regard to the distinction of this species and its near ally, *L. æneocephalus*, with which Dr. Reichenow and I perfectly agree.

To the east of Victoria Nyanza specimens have been collected at Kagihi, Massa, Simiu, Pangani, Nguruman, Lamu and Wapokomoland (Fischer). That naturalist observed them feeding on the ground in small parties of four or six, were very tame, and, on occasions, perched on the native huts and poured forth a short, pleasing song. Mr. Jackson found the species in the Suk country and writes: "Plentiful in small flocks; song very sweet." At Elgeyu, in the middle of August they were, "very plentiful; breeding. They make a shallow nest of sticks, mostly thorny, very rough." He also met with them at Kinani, and on the Samia Hills in Kavirondo, in parties of three to five individuals. In Somaliland, Ruspoli procured the type of *L. viridipectus* in the

Hento Valley; and others have been collected in that country by Mr. Gillett at Gilidi, and by Dr. Donaldson Smith at Shiek Hasein. The latter explorer also procured specimens at the Omo River and in the Maquois country.

In Shoa the species has been obtained by Harris, Antinori, and Mr. Oscar Neumann; to the eastward in Southern Abyssinia at Hado (Lovat); Herrer (Harrison); Errer Gota, Kasam River, and Hoorsa (Pease). Further north it is replaced by the closely allied *L. aeneocephalus*. The egg, according to Mr. Nehrkorn, is uniform sky blue, and measures 1.14×0.84 .

The northern form, Heuglin's Long-tailed Glossy Starling, inhabits North-east Africa between 9° and 16° N. lat.

This is a good subspecies of *L. purpuropterus*, resembling it in its colouring, but is considerably larger, the average measurement being: wing 6.6, tail 8.0, and in *L. purpuropterus*, wing 6.0, tail 6.1.

Heuglin met with the species in Sennar and Kordofan and records it as plentiful in the mountains of Northern Abyssinia up to 6,000 feet, living in small parties, mostly frequenting the higher trees and occasionally the pasture lands, and he not unfrequently saw them perched on carcasses, probably searching for maggots, for, like the Starlings generally, their food consists of all kinds of fruit and insects. They breed in July and August, and construct a large nest in some tall tree. The eggs are compared by Heuglin to those of our Blackbird. Blanford writes (Geol. and Zool. Abyss., p. 397): "Only seen in the Anseba valley, where it was abundant, and often observed associating with *Lamprocolius chalgæus* and *L. chrysogaster*, especially about villages and cattle enclosures. It was occasionally seen hawking insects in the air, as was also *L. chrysogaster*. It appears, however, to be also frugivorous at times. More than three or four were seldom seen together." Mr. Witherby remarks ("Ibis," 1901, p. 249): "These birds

were plentiful as far as we went south of Duem, but we did not observe them more than ten miles north of that place. Their song is sweet, but they have a perpetual and irritating call-note which is decidedly harsh. We found them in small companies, generally frequenting the tops of the trees; they were very tame."

To this subspecies I refer the *L. porphyropterus*, Butler ("Ibis," 1905, p. 324), which he found to be "common on the Upper White Nile and its tributaries, on the Abyssinian frontier, on the well-wooded parts of the White Nile and Bahr-el-Gazal and in Kordofan."

Lamprotornis mevesi.

Juida mevesii, Wahlberg, J. f. O. 1857, p. 1 *Doughe R.*

Lamprotornis mevesi, Sharpe, Cat. B. M. xiii. p. 157 (1890); Shelley, B. Afr. I. No. 590 (1896); Reichen. Vög. Afr. ii. p. 711 (1903).

Subspecies a. L. benguelensis (new name).

Lamprotornis purpurens (non Müll) Bocage, Journ. Lisb. 1867, p. 334 *Capangombe*; id. Orn. Angola, p. 305, pl. 7 (1881); Sharpe, Cat. B. M. xiii. p. 158 (1890); Shelley, B. Afr. I. No. 591 (1896); Reichen. Vög. Afr. ii. p. 711 (1903).

I have been compelled to apply a new name to this last form, as I can find no character for separating *Lamprocolius* from *Lamprotornis*.

Adult male. Glossy parts mostly steel blue; crown and mantle mottled with coppery violet; remainder of the back and the upper tail-coverts coppery bronze with a violet shade in front and behind; tail violet tinted blue, bluest on the centre feathers and crossed by a number of obscurely marked narrow blackish bars; wing rather greener, with some very obscure dusky bars and obsolete subterminal blackish patches on a few of the coverts; under surface of tail and wings black with a gloss of steel blue and violet on the wing-coverts; in front of eye black; ear-coverts blackish with a violet gloss; breast, thighs and under tail-coverts black, glossed with reddish violet and with a strong shade of copper on the centre portion. "Iris brown; bill and feet black" (Stark). Total length 13.6 inches, culmen 0.75, wing 6.1, tail 8.6, tarsus 1.6. ♂, 5. 6. 67, Avaquenyama (Andersson).

Adult female. Differs in the front half of the crown, and the throat being more green than blue; back of crown only slightly shaded with violet; lower back and breast more lilac with scarcely any copper shade. Wing 5·8, tail 7·8. “♂”?, 5. 6. 67 (Andersson).

L. benguelensis. Nearly allied to *L. mevesi*, but differing in the head, neck, mantle and tail being reddish violet with scarcely any trace of blue and no green; lower back and breast almost uniform coppery bronze. Head, neck, mantle, wings and tail reddish violet; crown and mantle mottled with a coppery shade; remainder of back and the upper tail-coverts coppery bronze, with a slight lilac shade on the tail-coverts; tail reddish violet brighter on the centre feathers, and crossed by a number of obscurely marked narrow blackish bars; wings sometimes, but not always, bluer than the mantle, and with some obscure blackish bars and obsolete subterminal blackish patches on a few of the coverts; under surface of tail and wings black, with a coppery violet gloss on the wing-coverts; in front of eye black; breast, thighs and under tail-coverts black, with a very slight reddish violet shade, these parts being nearly uniformly glossed with coppery bronze. “Iris brown; bill and feet black.” Total length 14·6 inches, culmen 0·7, wing 6·0, tail 8·7, tarsus 1·5. ♂, Rio Chimba (Anchieta).

Immature. “Ashy shaded pale brown, faintly glossed with violet on the head, back, wings, tail and breast; primaries dusky brown with the outer margins violet; tail feathers of the same colour as the back, but with dull brown bars like the secondaries and greater wing-coverts” (Bocage).

Meve's Long-tailed Glossy Starling inhabits Southern Tropical Africa, ranging from Mossamedes into Damaraland on the west, and from the Limpopo into Nyasaland on the east, and is represented in Benguela by the closely allied *L. benguelensis*, the Benguela Long-tailed Glossy Starling.

The latter, extremely local, form, has been recorded from the Quillenges and Capangombe district only, which includes the Rio Chimbo. The type of *L. purpureus*, Bocage, was discovered at the Capangombe River in 1867 by Anchieta, and according to his notes the species is abundant and resident there, not leaving the country, as most birds do, on the approach of the rainy season. He informs us that it is known to the natives as the “Melombe-anganza,” a name

which has been applied in that country also to *L. phœnicopterus*, so it probably only means Glossy Starling.

In Mossamedes this form gives way to the true *L. mevesi*, which has been obtained at Humbe and near the Cunene River by Anchieta, who found it known to the natives as the "Jungo." Kellen has also met with it at Hunpata. In the British Museum there are three of Andersson's specimens from Ovaquenyama, and a little further south, in Kaokoland, it has been procured by Mr. Schlettwein. To the eastward, in Central South Africa, Wahlberg discovered the species at the Doughe River, better known as the Okavango. In the country between the Limpopo and Zambesi specimens have been collected by Mr. Beddington in Matabele, by Holub at Sibanani, and by Frank Oates at the Nata River.

From the Zambesi Mr. Boyd Alexander writes: "Found in small parties on the low ground overgrown with brushwood, skirting the hills. By the middle of October these parties had split up into pairs and were then about the only birds to be seen during the heat of the day in the mealie-fields, preying upon locusts. The alarm note is a harsh screech. I take the following observation from my notebook: "While I write, three Long-tailed Starlings are sporting themselves on the bare dried-up ground close to my tent, busy picking up small grasshoppers. Their behaviour and gait remind me of our Blackbird: first a violent rush forward, then a sudden dip of the head to pick up some morsel, and then on again, the whole time their tail being jerked up and down."

In Nyasaland specimens have been collected by Mr. Whyte at Mpimbi, by General Manning on the Shiré and by Sir Alfred Sharpe at Liwondi and the Dedza highland in about 14° 30' S. lat., which is the most northern range known for the species.

Lamprotornis australis.

Megalopterus australis, Smith, Rep. Exped. Centr. Afr. p. 52 (1836)
Kurrichaine.

Lamprotornis australis, Reichen. Vög. Afr. ii. p. 707 (1903).

Chalcopsar australis, Sharpe, Cat. B. M. xiii. p. 158 (1890); Shelley,
B. Afr. I. No. 592 (1896).

Lamprotornis burchellii, Smith, Ill. Zool. S. Afr. Av. pl. 47 (1840)
Kurrichaine.

Adult male. Upper parts glossy green with a reddish violet reflection on the hind neck; rump lilac bronze passing into steel blue in front and on the upper tail-coverts; tail violet blue with numerous obscure blackish bars and very narrow green edges to the feathers; inner two-thirds of the lesser wing-coverts reddish violet and copper; a few obscure blackish blue subterminal marks to the median-coverts and scapulars; secondaries bluer with obsolete blackish bars and narrow green margins; in front of eyes black; cheeks and ear-coverts violet, the latter shaded with bronze; chin, throat and sides of chest glossy green; remainder of under parts black glossed with steel blue shading into lilac bronze on centre of breast. "Iris dark hazel; bill and feet black" (Buckley). Total length 12·5 inches, culmen 0·85, wing 6·7, tail 6·0, tarsus 1·8. ♂, Transvaal (T. Ayres).

Adult female. Similar to the male. Wing 6·5, tail 5·7. ♀, 17. 7. 85, Limpopo (T. Ayres).

Immature. Duller, with no coppery bronze on the plumage; rump blue; wings and tail greener with scarcely any trace of bars; centre of breast dull black. Wing 6·5, tail 5·7, Makalaka (Bradshaw).

Burchell's Glossy Starling ranges from the Cunene and Limpopo Rivers into Cape Colony.

The most northern range known for the species is Humbe, on the right bank of the Upper Cunene River, where Anchieta records it as one of the commonest birds. Mr. Fleck has procured specimens at the Okavango River, in Kalahari, Damaraland and at the Orange River, and Mr. Schlettwein in Kaokoland. Andersson writes: "This very handsome species abounds in the Lake regions; in the Damara country it first became abundant at Schmelen's Hope, on the upper sources of the Swakop. It is found singly or in pairs, and passes most of its time on large trees, but occasionally descends to the

ground in search of insects, which, with berries, constitute its chief food. It is, however, somewhat omnivorous in its habits; and I have observed its stomach to contain much sand. It is a very shy bird, but very lively, jerking its body and tail (the latter of which it can raise quite perpendicularly), and uttering all the while harsh, clamorous notes."

Sir Andrew Smith discovered the species in the country to the north of Kurrichaine, and remarked: "When flying, the wings appear out of proportion to the body, and gives the appearance of a size to the bird which in reality it does not possess." It is fairly abundant in the Orange River Colony, and has been met with in Cape Colony at Colesberg by Arnot. Buckley calls it, "very common in the north of the Transvaal, building under the eaves of the houses in Pretoria," and Mr. T. Ayres writes: "Burchell's Glossy Starling is the commonest of the Grackles on the River Limpopo, and next to it, in point of numbers comes *Lamprocolius phænicopterus*; both species are very shy and difficult to get within range of, but both may often be seen feeding on the ground in company, frequently also together with Francolins and other birds." According to Stark's notes: "This large and very beautiful Glossy Starling appears to be everywhere rather shy in its habits, much more so than are the majority of its congeners." He further writes: "Usually they breed in holes of trees, frequently at a considerable height above the ground. The nests consist of a quantity of dry grass and straw, lined with hair, wool and finer grass. The eggs are usually four in number, bluish green, sparingly marked with spots of pale reddish brown. They measure 1.36×0.95 ."

Lamprotornis ornatus.

Sturnus ornatus, Daud. *Traité*, ii. p. 309 (1800).

Lamprocolius ornatus, Reichen. *Vög. Afr.* ii. p. 726 (1903).

Lamprotornis ignita, Nordm. in Ernan's *Reise*, Atlas, p. 7, pl. 3 (1835)
Senegal.

Juida ignita, Gray, *Gen. B.* ii. p. 327, pl. 80 (1846).

Lamprocolius ignitus, Sharpe, *Cat. B. M.* xiii. p. 174, pl. 7, fig. 1, *head*
(1890); Shelley, *B. Afr. I.* No. 593 (1896); Reichen. *Vög. Afr.* ii.
p. 694 (1903).

Le Choucador, Levaill. *Ois. Afr.* ii. 144, pl. 86 (1799).

Adult male. Forehead and head in front of the eyes black; crown, back and sides of neck metallic green, with a blue shade on the nape and next to the mantle; mantle glossy bronze passing into reddish blue on the rump and upper tail-coverts; tail black, with a bronze gloss on the edges of the feathers and a broad reddish blue terminal band; wings, with the lesser coverts green shading into reddish blue on the median coverts which have some bronze and black centres; greater coverts black, with lilac and bronze edges; secondaries coppery bronze passing towards the primary-coverts into lilac and blue; remainder of quills black, with greenish blue outer margins and reddish blue ends; cheeks and ear-coverts violet blue, with a redder margin next to the throat which is bronze like the breast; this bronze colour extends in an angle on to the neck just behind the cheeks; sides of abdomen, thighs and under tail-coverts blue shaded with lilac and bronze; under surface of wings and tail dull black, with the under wing-coverts slightly glossed with bronze and the bend of the wing violet blue. Iris white; bill and feet black. Total length 11 inches, culmen 1.0, wing 6.2, tail 4.4, tarsus 1.4.

Adult female. Like the male, but smaller. Wing 5.7. ♀, Prince's Island (Keulemans).

The Prince's Island Glossy Starling is, I believe, confined to that island.

The only specimens I have examined of the species were shot on Prince's Island. It has nominally been procured by Mr. F. Newton on Fernando Po, by Weiss on St. Thomas' Island, and has also been recorded by Hartlaub from Gaboon (Fosse), and from Angola (Canivet). If the range of the species is not restricted to Prince's Island, but really extends from Fernando Po to St. Thomas' Island, there is no reason



Lamprolaima splendidus

why we should doubt the accuracy of the localities, Gaboon and Angola, on specimens in the Paris Museum; but I believe it to be a local species.

"This remarkably fine Glossy Starling," Mr. Keulemans informs me, "is common in all the wooded parts of Prince's Island, where I saw it in flocks of six to twenty individuals, especially in the morning, ever busy and restless, making a deal of noise by their incessant call-notes and the beating of their wings, which is remarkably loud. Can this be caused by the peculiar form of the quills? After mid-day the flocks retire into the higher parts of the trees, usually squatting and chuckling all the while, very much in the same manner as our English Starling does of an afternoon on the tops of our houses. In their movements they reminded me of our Blackbird, and their song and call-note is exactly like that of the Golden Oriole. Their food consists chiefly of berries and bananas, but also includes large numbers of spiders, caterpillars and even small snails, which they swallow, shell and all. They breed in holes in trees, and the nestlings I have seen were greyish brown, and, according to the natives, the eggs are white spotted with red and black towards the thick end. The species is known to the natives as the 'Torninko,' a corruption from the Portuguese 'Estorninko' (Starling)."

Lamprotornis splendidus (Plate 45).

Turdus splendidus, Vieill. Enc. Méth. ii. p. 653 (1822) *Malimbe*.

Lamprocolius glaucovirens, Elliot, Ann. and Mag. N. Hist. (4) xx. p. 169 (1877); Sharpe, Cat. B. M. xiii. p. 172, pl. 7, fig. 2, *head* (1890, ♂); Shelley, B. Afr. I. No. 596 (1890, pt.)

Lamprocolius splendidus glaucovirens, Reichen. Vög. Afr. ii. p. 693 (1903); Neum. J. f. O. 1905, p. 240 *N. E. Afr.*

Lamprocolius lessoni (non Pucher.), Sharpe, Cat. B. M. xiii. p. 173, pl. 7, fig. 3, head (1890, ♀); Shelley, B. Afr. I. No. 595 (1896, pt.); Reichen. Vög. Afr. ii. p. 694 (1903).

Merle vert d'Angola, Daubent. Pl. Enl. iv. pl. 561.

Adult male. Forehead and sides of head in front of the eyes black; crown, back and sides of neck, lower back and upper tail-coverts metallic green, the latter parts and the nape slightly tinged with blue; mantle violet shaded blue; tail velvety black, with an outer edge and a broad terminal band of metallic bluish green; wing-coverts, outer edges and ends of the primaries glossy green of a more coppery shade on the greater-coverts and base of the secondaries; medium and greater-coverts with jet black sub-terminal bars, and a broad velvety black bar crosses the secondaries; cheeks and ear-coverts steel blue; a triangular patch of copper on the neck behind the cheeks; throat reddish violet shading into blue on the sides and crop and passing into a broad copper band across the chest; abdomen and under tail-coverts glossy green shading into violet blue on the lower chest and thighs; under surface of the tail and wings dull black with glossy edges to the under wing-coverts mostly violet, but passing into green at the bend of the wing. Iris yellowish white; bill and feet black. Total length 12 inches, culmen 0.8, wing 6.2, tail 5.0, tarsus 1.3. 2. 83, Semmio (Bohndorff).

The Eastern Splendid Glossy Starling ranges from Camaroons into Angola and eastward to Kavirondo and the Kaffa country, about 38° E. long.

This magnificent bird is, according to Dr. Reichenow, the commonest of the Glossy Starlings in Camaroons and Gaboon. It is apparently not much less abundant to as far south as Angola, for Monteiro writes: "Tolerably common at Bembe and more so near the coast, being found in flocks of twenty to thirty. It has a clear whistle like that of a Starling."

The type was discovered by Perrein at Malimbe. In the British Museum Catalogue the head of the adult male has been figured under the name of *L. glaucovirens*, and that of the female as *L. lessoni* (pl. 7, figs. 2, 3), owing to the bluer shade of the throat and the patch on the sides of the neck being more lilac in females than in the males. The species has also been obtained in Loango and Lower Congo (Lucan and Petit), Loanda (Toulson), Stanley Pool (Tenzs), Niam-Niam (Bohn-

dorff), Tingasi, Bukoba (Emin), Mjonjo, Sesse Island (Stuhlmann), Kavirondo, Nandi (Jackson), Upper Gelo River, and the Bénesho, Kaffa and Konto countries (Neumann).

Mr. Jackson ("Ibis," 1899, p. 593) writes from Kavirondo, April 7: "Plentiful in the patch of open forest near Clarke's bridge over the Ichaka River." And from Nandi, August 29: "Now in pairs and breeding. Makes a nest of dry grass in holes in trees from 20 to 30 feet above the ground. The cock birds are very noisy, but many of their notes are pleasant. When flying they make a loud swishing noise with their wings. They would make splendid cage birds."

I do not understand why the name *Turdus splendidus* Vieill., should have been applied to any other species than the present one.

Lamprotornis chrysonotis.

Lamprotornis chrysonotis, Swains. B. W. Afr. i. p. 143, pl. 6. (1837)
W. Africa.

"*Juida luxuosa*, Less," Hartl. Abhandl. Bremen, 1874, p. 55.

Juida lessoni, Pucher. Rev. et Mag. Zool. 1858, pp. 256-259 *Fernando Po*.
? *Lamprocolius defilippi*, Salvad. Atti. R. Ac. Torino, 1865, p. 371.

Lamprocolius chubbi, Alexander, Bull. B. O. C. xiii. p. 48 (1903)
Fernando Po; Reichen. Vög. Afr. ii. p. 694 (1903); Alexander, *Ibis*,
1903, p. 357.

Lamprocolius splendidus (non Vieill.) Sharpe, Cat. B. M. xiii. p. 172, pl. 7
fig. 4 *head* (1890, ♂); Shelley, B. Afr. I. No. 594 (1896 pt.);
Reichen. Vög. Afr. ii. p. 692 (1903).

Adult male. Differs only from the Eastern form, *L. splendidus*, in having the entire throat steel blue with scarcely any or no red shade; entire top of the head and back of neck uniform green, with no blue shade on the back of the head. Iris pale yellow; bill and feet black. Total length 11.6 inches, culmen 0.8, wing 5.8, tail 4.5, tarsus 1.2. Gambia (Whiteley).

Adult female. Smaller, with little or no bronzy red on the chest; patch on sides of neck behind the ear-coverts violet with scarcely any copper shade; wing 5.2. ♀, Gambia River (Kinder).

Immature. Differs in having the forehead, sides of head and the under

parts brown, upper parts more uniform green with no black on the wing-coverts, and only an obsolete trace of a dark bar across the secondaries; the notches on the inner webs of the primaries slightly smaller.

The Western Splendid Glossy Starling ranges from Senegambia to Fernando Po.

The locality from whence Swainson's type came is not known, but it was probably Senegambia, where Marche and De Compiègne have collected specimens at Daranka, and at Sédhiou, close to Casamance from whence it has been received by Verreaux. Dr. P. Rendall calls the species rare at the Gambia, but in the British Museum there are four specimens from that locality, and there has recently been added to the collection by Mr. E. Seimund four males and three females from Fernando Po, which prove that *Juida lessoni*, Pucheran and *Lamprocolius chubbi*, Alexander, are females of this species. In the Bissagos group this Starling has been procured on Bulama Island by both Barahona and Damacens. In the Berlin Museum there are specimens from Konakri on the coast opposite Los Island, and Tapa in the Hinterland of Togo.

The first mention of the species from Fernando Po is by Fraser (P. Z. S., 1843, p. 52), who writes: "*Lamprotornis chrysonotis*, Fernando Po. Very shy: irides white, bill and legs black, nostrils large and open. Caws somewhat like a Crow; makes a burring noise like a parrot when beginning to fly; lives in the loftiest trees. The gizzard contained small seed and red berries."

The noisy flight of this species, of *L. splendidus* and of *L. ornatus*, has been remarked by Fraser, Jackson and Keulemans, and the latter naturalist remarks that it may be caused by the peculiar form of the quills, the four longest of which have a large notch on the inner webs, which has been figured by Swainson (B. W. Afr., i. p. 145).

Lamprotornis acuticaudus.

Lamprocolius acuticaudus, Bocage, Journ. Lisb. 1870, p. 315 *Huilla*; id. Orn. Angola, p. 309, pl. 6 (1881); Shelley, B. Afr. I. No. 597 (1896).
Heteropsar acuticaudus, Sharpe, Cat. B. M. xiii. p. 185 (1890); Reichen. Vög. Afr. ii. p. 696 (1903).

Adult male. General plumage glossy green; in front of eyes black; ear-coverts steel blue; wings with the inner two-thirds of the lesser coverts steel blue and coppery lilac; ends of median and greater coverts and inner secondaries with black spots; inner edges of primaries and under surface of the quills and tail dusky brown; under wing-coverts glossy deep blue, passing into green along the bend of the wing; sides of body slightly shaded with blue. "Iris orange yellow; bill and feet black." Total length 9.8 inches, culmen 0.9, wing 4.9, tail 4.2, tarsus 1.25. ♂, 8. 77, Caconda (Anchieta).

Female. Similar to the male. Wing 4.9.

Immature. Much duller, with the base of the feathers of head, neck and body dusky brown; chin, throat and broad edges to the other feathers of the under parts brownish buff; tail as in the adult; remainder of upper parts glossed with greenish yellow, most strongly so on the wings which have no black spots, and no copper nor red shade of the lesser coverts; in front of the eye and the ear-coverts black; forehead, back of head and neck, with small brownish buff margins to the feathers; wing 4.6, ♂. 11. 77, Caconda (Anchieta).

The Green Wedge-tailed Glossy Starling ranges from Angola into Ovampoland.

Little is known regarding the habits of this well marked species. Specimens have been collected by Schütt and Mechow at Malanji, and others by Mechow at Kambo and the Kuango River. Further south the type was discovered on the elevated plateau country round Huilla by Anchieta, who remarks that it feeds chiefly upon fruit and is known at that place as the "Eiabairo," and at Galanga as the "Jabairo," and according to Sesinando Marques, it is the "Mucombe" of the native at the Lehe River; but we are not informed by which of the names it is known at Caconda, Cahata or Quindumbo, at all of which places the species has been met with by Anchieta.

This Starling is apparently plentiful throughout its somewhat limited range, which extends southward into Ovampoland, and eastward to the Okavango River, where we are informed that Mr. Erickson met with it (Stark, Faun. S. Afr. B., i., p. 38).

Lamprotornis phœnicopterus.

- Lamprotornis phœnicopterus, Swains. An. in Menag. p. 360 (1838) *S. Africa*.
 Lamprocolius phœnicopterus, Sharpe, Cat. B. M. xiii. p. 180 (1890); Shelley, B. Afr. I. No. 598 (1896); Reichen. Vög. Afr. ii. p. 685 (1903); Whitehead, Ibis, 1903, p. 223 *Orange R.*; Shortridge, Ibis, 1904, p. 175 *Pondoland*; Clarke, t. c. p. 525 *Bloemfontein*.
 Spreo bispecularis, Strickl. Contr. Orn. 1852, p. 149 *Damara*.
 Lamprocolius bispecularis, Sharpe, Cat. B. M. xiii. p. 181 (1890).
 Lamprocolius phœnicopterus bispecularis, Reichen. Vög. Afr. ii. p. 686 (1903); Sparrow, S. Afr. O. U. i. p. 9 (1905) *S. Africa*.

Adult male. General plumage glossy green, more shaded with steel blue on the head, neck, body and tail than on the wings, the blue shade strongest on the sides and back of head and neck, rump, upper tail-coverts, tail and thighs; wings, with the inner two-thirds of the lesser coverts copper shaded with lilac and blue; ends of median and greater coverts with black spots; inner webs of the primaries and under surface of quills and tail dull brownish black; under wing-coverts glossed with violet, shading into green at the bend of the wing. Iris pale yellow; bill and feet black. Total length 9·5 inches, culmen 0·95, wing 5·3, tail 3·8, tarsus 0·95. ♂, 22. 5. 73, Natal (T. E. Buckley).

Female. Differs only in being smaller; wing 4·95. ♀, 23. 7. 76, Swaziland (T. E. Buckley).

Immature. Differs in having the sides of the head and the under parts dusky blackish brown, with more or less distinct glossy green edges to many of the feathers, and no black spots on the wing-coverts.

Large race. Differs only in size; male, wing 5·8; female, wing 5·2, Eland Post (Atmore).

The Red-shouldered Glossy Starling ranges over Africa southward from Gaboon and Matabeleland.

The species, on an average, increases in size as it

approaches Cape Colony. I have measured the wings of the fine series of specimens in the British Museum and find they vary as follows: To the north of the Cunene from 4.75 to 5.0 inches; Damaraland 5.0 to 5.3; from Matabeleland to Durban in Natal, 4.75 to 5.4; in Cape Colony 5.0 to 5.8; so as I do not see where the line is to be drawn between the larger and smaller races I have included *L. phœnicopterus* (Swains.) and *L. bispecularis* (Strickl.), under one name.

This Starling is recorded in the list of Marche and de Compiègne's collection from as far north as Fernand Vaz in Gaboon. In Loango it has been procured by Falkenstein and Petit. In the British Museum there is one of Toulson's from Angola, and also specimens from Ambaca and Capangombe (Anchieta), Benguela (Monteiro), Otjimbinque (Anderson), Matabele and Limpopo (Oates), Swaziland (Buckley), Natal (Buckley, Reid, Gorge and T. L. Ayres), Port Elizabeth, Eland Post (Atmore), Cape Colony (Layard), and it has been recorded from many other intervening places.

Monteiro considered it to be a common bird throughout Angola, and Anchieta found it was known to the natives of Capangombe as the "Melombeonganza," and at Quillengues as the "Janja."

Andersson writes: "This bird is found most abundantly throughout Damara and Great Namaqualand, in the valleys of the Okavango and of the Teoughe, and in the Lake regions. Like our European Starling, which it very much resembles in manners and habits, it frequently congregates in large flocks; it is comparatively tame and easy to approach, and is often met with near villages. Its food is very various, consisting of berries, seeds and insects, and it is very destructive to fruit gardens; its flesh is not unpalatable. This species forms its nest in the hollows of trees, lining the cavity well with feathers."

Layard found it to be abundant throughout the eastern part of Cape Colony; but according to Atmore, it is not met with to the west of the Gamtoos River, where Levillant observed it in immense flocks. Bradshaw remarks that it is abundant at the Orange River; and when I was in Natal, in the months of February and March, I found the species plentiful in the open country between Durban and Pinetown, always in flocks of twelve to twenty perched on the tops of the small trees, and were shy and active. Stark writes: "In spring the winter flocks separate into pairs, which distribute themselves through the bush in search of a convenient hole in which to place their nest. Usually they make use of a natural hole or cavity in a tree-trunk, but sometimes take possession of one dug by a Woodpecker after driving away the rightful owners. Not unfrequently they build under the eaves of a barn or house; and Mr. Barratt remarks that on his farm, on the Chalumna, British Kaffraria, they 'frequented the barns and buildings, continually flying to and fro, like English Starlings.' The nest holes are thickly lined with dry grass, feathers and hairs, on which four or five eggs are laid. These are usually somewhat elongated in shape, of a pale bluish green ground colour, sparingly spotted with pale reddish brown. They average about 1.1×0.8 ." He separates the species into a large and small subspecies, and remarks that these races are alike in their habits.

Mr. T. Ayres writes from Natal: "I have known a pair of these birds take possession of a Woodpecker's nest, destroying the eggs and laying their own instead, which the Woodpeckers seemed to submit to rather tamely. They feed almost entirely on fruits and berries, and are destructive to our mulberries and other small fruits. They sometimes hop about and feed on the ground, like the Thrush and Blackbird in England."

Major Sparrow, in the first paper contributed to "The Journal of the South African Ornithologists' Union," gives some interesting supplementary notes on the nesting-habits and eggs of certain South African birds described in Stark and Sclater's "South African Fauna," thus: "*Lamprocolius phœnicopterus bispecularis* (Lesser Red-shouldered Glossy Starling), nests in November. The clutch is only three eggs."

Lamprotornis chalybæus.

- Lamprotornis chalybæus*, Hempr. and Ehr. Symb. Phys. fol. y, pl. 10 (1828); Abyssinia, Rüpp. N. Wirb. p. 27, pl. 11, fig. 2 (1835).
Lamprocolius chalybæus, Sharpe, Cat. B. M. xiii. p. 176 (1890); Shelley, B. Afr. I. No. 599 (1896); Reichen. Vög. Afr. ii. p. 687 (1903); A. L. Butler, Ibis, 1905, p. 325 *Soudan*; Witherby, t. c. p. 518 *Somali*; Eranger, J. f. O. 1905, p. 709 *N. E. Afr.*
Lamprotornis chloropterus, Swains. An. in Menag. p. 359 (1838) *W. Africa*.
Lamprocolius chloropterus, Sharpe, Cat. B. M. xiii. p. 178 (1890); Shelley, B. Afr. I. No. 601 (1896); Neum. J. f. O. 1905, p. 240 *N. E. Afr.*
Lamprocolius chalybæus chloropterus, Reichen. Vög. Afr. ii. p. 690 (1903).
Lamprocolius cyanogenys, Sundev. Öfv. Vet. Ak. Förk. Stockh. 1850, p. 127 *Sennaar*.
Lamprocolius cyanoventris, Blyth, Journ. As. Soc. Beng. 1855, p. 255 *Abyssinia*; Neum. J. f. O. 1905, p. 239 *N. E. Afr.*
 "Lamprocolius sycobius, Peters," Hartl. J. f. O. 1859, p. 19 *Tete*; Sharpe, Cat. B. M. xiii. p. 178 (1890); Shelley, B. Afr. I. No. 600 (1896); Holub. and Pelz. Beitr. Orn. S. Afr. p. 110, pl. 3 (1882).
Lamprocolius chalybæus sycobius, Reichen. Vög. Afr. ii. p. 688 (1903).
Lamprocolius abyssinicus, Hartl. J. f. O. 1859, p. 21 *Abyssinia*.
 "Lamprocolius guttatus, Würt." Heugl. J. f. O. 1867, p. 294 *Abyssinia*.
Lamprocolius massaicus, Neum. J. f. O. 1900, p. 280 *Masai*.

Adult. Glossy green, with the exception of the following parts: in front of the eye black; ear-coverts deep blue sharply defined (or greenish blue not sharply defined); lesser wing-coverts shaded with blue and lilac bronze (the lilac shade often entirely absent); ends of median and greater-coverts and the inner secondaries, with velvety black spots; sides of body and the thighs

blue with a red shade ; under surface of wings and tail dull brownish black glossed on the under wing-coverts, with violet passing into green at the bend of the wing. Iris yellow ; bill and feet black. Total length 8·4 inches, and 9·0, culmen 0·7, wing 4·8, tail 3·0, tarsus 1·1. ♂, 23. 10. 01, Keren (Esler) and Mashonaland (Darling).

Immature. (a) Dusky brown washed with glossy green on the upper parts ; lesser wing-coverts towards the base of the wing violet, with a slight reddish gloss ; black spots on wing small or absent ; sides of head and the under parts partly glossed with green and slightly bluer on the lower breast. Wing about 4·7, Senafé and Nyasaland.

(b) Differs in the forehead, cheeks and under parts being pale earthy brown, with a green gloss only on the under tail-coverts ; no spots on the wing, the under surface of which is dark brown with a few buff edges to the coverts ; wing 4·1, Ailet.

(c) Differs from the adult in having no trace of red on the wing-coverts and no spots on the wing ; crown mottled with dark brown ; under parts pale cinnamon, strongly mottled with bright feathers of the adult plumage ; under wing-coverts dull dusky brown, with some rufous buff edges ; wing 4·5, Zomba.

The Common Blue-breasted Glossy Starling ranges over the greater part of the African continent south of 18° N. lat. to the Vaal River, but has not been met with on the western side from south of the Cunene River nor in the Angola-Congo district.

The species is somewhat variable in size and colouring of the head and lesser wing-coverts, as also in the amount of indentation on the edge of the inner web of the first four long primaries.

On the former two characters Dr. Sharpe, in 1890 (Cat. B. M. xiii. p. 170), split up the species into *L. chalybæus*, "North-east Africa and Senegambia." *L. sycobius*, "Eastern Africa from the Mombasa district to the Zambesi and thence to the Western Transvaal." *L. chloropterus*, "West Africa from Senegambia to Gaboon and throughout North-eastern and Eastern Africa down to the Zambesi."

The species is not uncommon in West Africa from the Senegal River to Togoland, and is represented in the British

Museum from Senegambia and Accra. It has been recorded from Eastern Camaroons (Carnap) and Gaboon (Verreaux), but it meets with the closely-allied *L. chalcurus* from Senegal to the White Nile.

Further south in West Africa the present species has been procured in Mossamedes only, so it has possibly wandered into that country from the east. In Mossamedes Anchieta obtained specimens at Huilla, Gambos and Humbe, and records it as being very common. These are known to the natives of the Humbe district as the "Quire," and Kellen has also met with it near Hampata.

It has not been found in Western South Africa, but has been recorded by Holub from Betuanaland and the Vaal River, otherwise I find no mention of it from further south than the Limpopo, where, according to Mr. T. Ayres, it is plentiful during the winter months. He also writes: "They are found in Mashonaland in small flocks, generally frequenting high trees; and those which we procured had been feeding upon small insects, apparently black ants." He also remarks that its note differs from its nearest South African ally, although it is just as harsh. Mr. Marshall writes from Mashonaland: "Abundant at all seasons, often congregating in considerable flocks. They live almost entirely on fruit and berries, but may occasionally be seen feeding on the ground, apparently picking up insects." Along the Zambesi, from Tete westward, Mr. Boyd Alexander found the species generally in small flocks until "the end of December, when some large flights of old and young were observed in the game country near the Kafue River, often in company with *Lamprotornis mevesi* and also *Onychognathus morio*. The males emit chattering notes, by no means unpleasant, which are uttered from the topmost twigs of tall trees. The call-note is a clear musical whistle." Sir John Kirk writes: "In large flocks

near Tete and in cultivated country along the Zambesi and Shiré in August and September."

The species is extremely abundant and evenly distributed over Eastern Africa, from the Limpopo to Bogosland, and has been recorded by Heuglin, from as far north as the Bisharin Plateau. It would be superfluous to name all the localities where it has been procured, as these are mentioned by Dr. Reichenow (Vög. Afr. ii. pp. 687-691), and I may sum up the remainder of the information we have regarding its habits as follows: It begins breeding in the early spring, the month depending upon the latitude. The nests are constructed in trees at elevations varying from 10 to 30 feet from the ground, and are composed of grass, warmly lined with feathers or some soft material. The eggs, generally three in number, but sometimes as many as five, are of a pale greenish blue faintly spotted with rufous or violet grey, and measure, according to Mr. Kuschel, 1.3×0.82 on an average. Three eggs, agreeing with Mr. Kuschel's description, were obtained by Erlanger on May 21, 1900, from a nest constructed in the hole of a tree 6 feet from the ground, but a single egg he had taken on April 9, differed in being of a uniform glossy bluish green and resembled that of our Common Starling. Mr. A. L. Butler, in his notes from the Soudan, writes: "These birds are gregarious throughout the year, breeding in colonies. On the Setit, in April, they were repairing their old nests, which were bulky structures of sticks, placed in the tops of 'heglik' trees. Several nests were often built together into one great mass."

In the "Ibis," 1882, p. 265, I pointed out that *L. chalybæus* (Ehr.), *L. chloropterus* (Swains.), and *L. sycobius*, Peters, probably all referred to one species, and I am now convinced that that is a fact; but I admit that *L. porphyrorus*, Hartl., which is the same as *L. chalcurus* (Nordm.), is recognisable by the

reddish violet shade on the upper tail-coverts and base of tail, and this character being constant in both adults and young I treat it as a good species, although its range is mixed up in that of *L. chalybæus* in West Africa, which looks as if it may be only a variety.

The types of *L. chalybæus* (Ehr.), *L. cyanoventris*, Blyth, *L. abyssinicus*, Hartl., *L. guttatus*, Würt., and *L. cyanogenys*, Sundev., all came from Abyssinia; *L. chloropterus* (Swains.) from West Africa; *L. sycobius*, Peters, from Tete, and *L. massaicus*, Neun., from Masailand. For those who wish to look more closely into the variation to which this species is subject to, I may refer them to Blanford's "Geol. and Zool., Abyss.," p. 395 (1870), and a note by Dr. Bowdler Sharpe on the specimens collected by Mr. Jackson (Ibis, 1899, p. 594).

Lamprotornis chalcurus.

Lamprotornis chalcurus, Nordman in Erman's Reis, Atlas, p. 8 (1835)
Senegal.

Lamprocolius chalcurus, Sharpe, Cat. B. M. xiii. p. 179 (1890); Shelley,
B. Afr. I. No. 602 (1896); Reichen. Vög. Afr. ii. p. 691 (1903).

Lamprotornis cyanotis, Swains. B. W. Afr. i. p. 146 (1837) *W. Africa*.

Lamprocolius porphyurus, Hartl. Abhandl. Bremen, 1874, p. 60 *Accra*.

Lamprocolius chalcurus var. *orientalis*, Hartl. Abhandl. Bremen, 1881,
p. 106 *Fatico*.

Adult. Similar to that of *L. chalybæus*, but differs only in having a bright reddish violet shade on the tail, strongest towards the basal half of the centre feathers. "Iris orange yellow" (Emin). Total length 7.8 inches, culmen 0.8, wing 5.1, tail 2.9, tarsus 1.2. *Accra* (Haynes), type of *L. porphyurus*.

Immature. Much duller and inclining to sooty brown, especially on the head, neck and under parts owing to the less amount of gloss on the feathers; upper tail-coverts and tail mostly violet bronze shading into blue on the penultimate feathers, and into green on the outer web of the tail. "Iris grey" (Reichenow); wing 5.0. *W. Africa* (Brit. Mus.).

Nordman's Glossy Starling ranges from Senegambia into the Upper White Nile district.

The type came from Senegambia, and the species has been procured near Bathurst (Rendall), Casamance (Verreaux), Bissao (Fea), Los Island (Paris Mus.). Ussher writes: "Tolerably common up the Volta, where it is to be observed in small flocks. I have also received it from Fantee and the Accra district." At the latter place it has likewise been obtained by Haynes and Dr. Reichenow. In Togoland it has been met with at Krachi by Mr. Zech, and at Jendi by Mr. Thierry.

In the White Nile district Heuglin procured a single specimen at Bongo; Emin obtained two at Tarangola and one at Fatico, so the species is apparently rare throughout its range, as I do not find it mentioned from any other localities.

Lamprotornis purpureus.

- Turdus purpureus*, P. L. S. Müll. S. N. Suppl. p. 143 (1776) *Hab?*
Lamprocolius purpureus, Sharpe, Cat. B. M. xiii. p. 175, pl. 8, fig. 1, *head* (1890); Shelley, B. Afr. I. No. 603 (1896); Reichen. Vög. Afr. ii. p. 691 (1903).
Turdus juidæ, Bodd. Tabl. Pl. Enl. p. 31 (1783) *ex Briss*.
Turdus auratus (non Müll.), Gm. S. N. ii. p. 819 (1788) *Whidah*.
Turdus splendens, Leach, Z. Misc. ii. p. 30, pl. 71 (1815).
Lamprotornis lucida, Nordman in Erman's Reise, p. 8, pl. 3 (1835) *Senegal*.
Lamprotornis ptilonorhynchus, Swains. B. W. Afr. i. p. 140 (1837) *Senegal*.
Lamprotornis amethystinus, Heugl. J. f. O. 1863, p. 21 *Gazelle R*.
Lamprocolius purpureus amethystinus, Reichen. Vög. Afr. ii. p. 692 (1903).
Lamprocolius auratus orientalis, Heugl. J. f. O. 1869, p. 7 *Gazelle R*.

Adult. Head glossy reddish violet like the under parts generally, passing through a steel blue shade on the nape and back of neck into glossy golden green on the mantle, which colour again shades into steel

blue on the lower back; upper tail-coverts washed with violet; tail above steel blue with a red shade on the centre feathers and passing into green on the sides and end; wings glossy green, with the lesser series of coverts uniform steel blue; median and greater coverts with terminal velvety black spots; under surface of wings and tail dull brownish black, with the under wing-coverts glossy violet blue; sides of abdomen and under tail-coverts steel blue, less shaded with red than the remainder of the under parts. Iris golden yellow; bill and legs black. Total length 8·8 inches, culmen 1·0, wing 5·7, tail 3·0, tarsus 1·3. 27. 2. 70, Accra (T. E. Buckley).

Immature. Differs in being duller, in having no black spots on the wings; sides of head and entire under parts dusky black with a blue gloss at the edges of the feathers, Volta R. (Ussher).

The Purple Glossy Starling ranges from Senegambia to the Niger and eastward through Equatorial Africa into Kavirondo.

The types of *Lamprotornis lucidus*, Nordm., and *L. ptilonorhynchus*, Swains., both came from Senegal. Marche and De Compiègne collected specimens at Dakar, M'bao, Ruffisque, Hann, Deine, Daranka and near Casamanse. Dr. P. Rendall writes: "The native hunters shoot and skin the birds in large numbers, and sell them to the French firms trading on the Gambia, who, as I learn, supply Parisian hat manufacturers." Mr. Budgett mentions it as "very common" on McCarthy Island, so it is strange not to find it recorded from Liberia, for it is plentiful on the Gold Coast. Buckley and I met with them in flocks on the open country which surrounds Accra, Captain Giffard procured the species at Gambaga, Mr. Boyd Alexander found it in large flocks inland near the Volta, and these Starlings have been obtained at many places in Togoland. In Dahomey, according to Mr. F. Newton, it is known to the natives as the "Ago-he." In the Niger district the species has been obtained by Forbes at Lokoja, and Dr. Hartert found it rare at Loko, but abundant at Anassarawa and in the northern provinces.

The occurrence of the species further south in West Africa

appears to me very doubtful. The specimen obtained by Thomson was more probably from the Niger than from Fernando Po; the species has not yet been recorded from Camaroons, so I do not believe in Verreaux having correctly labelled a specimen as coming from Gaboon.

The following notes refer to *L. purpureus amethystinus* (Heuglin), Reichen. Vög. Afr. ii. p. 692, which I cannot myself distinguish from the typical Senegal form. These Starlings have been obtained by Bohndorff at Kuchugali and Semio in the Niam-Niam country, by Emin at Fatiko and Wandj; between this and the Gazelle River, Heuglin found the species plentiful and gave it the two names *Lamprotornis amethystinus* and *L. auratus orientalis*. Dr. Ansorge has procured it in Unyoro, and Fischer as far east as Kawango in Kavirondo.

Lamprotornis cupreocaudus (Plate 46, fig. 1).

Lamprocolius "cupreocauda, Temm." Hartl. Orn. W. Africa, p. 119 (1857) *Sierra Leone*; Sharpe, Cat. B. M. xiii. p. 184 (1890); Shelley, B. Afr. I. No. 604 (1896); Reichen. Vög. Afr. ii. p. 684 (1903).

Adult. Upper parts deep steel blue, with the forehead black and the sides of the crown and back of neck of a reddish violet shade; a few of the upper tail-coverts bronze; tail violet shaded black, washed with bronze down the centre and on the outer webs of the other feathers; primaries, with the ends and inner webs dull bluish black; in front of eye black; cheeks, ear-coverts, sides of neck, chin and throat reddish violet; breast steel blue like the mantle; lower abdomen and under tail-coverts black glossed with reddish bronze; under surface of wings and tail brownish black; the under wing-coverts glossed with deep steel blue. Iris yellow; bill and feet black. Total length 7.5 inches, culmen 0.7, wing 4.7, tail 2.9, tarsus 0.95. Fantee (Ussher).

Immature. Similar to the adults but duller, the black bases of the feathers of the neck and breast showing through the metallic colouring.

The Copper-tailed Glossy Starling ranges from Sierra Leone over Liberia and the Gold Coast.

The type is a specimen from Sierra Leone in the Brussels



1. *Lamprocolius cupreicaudus*.
2. " " *purpureiceps*.

Museum. Demery met with the species at the Sulymah River, and it is apparently generally distributed over Liberia and the Gold Coast, and this is the limit of its known range. Ussher records it as: "Common in most districts of the Gold Coast, but especially on the plains of Accra. It associates in flocks with *L. purpureus*, and much resembles, in its flight and habits, our English Starling." According to Mr. Boyd Alexander: "This species is not found outside the forest region."

Lamprotornis purpureiceps (Plate 46, fig. 2).

Lamprocolius purpureiceps, Verr. Rev. et Mag. Zool. 1851, p. 418 *Gaboon*; Sharpe, Cat. B. M. xiii. p. 184 (1890); Shelley, B. Afr. I. No. 605 (1896); Reichen. Vög. Afr. ii. p. 685 (1903).

Adult. The extremely short feathers of the crown violet like the sides of the neck, chin, throat and crop, shading into black on the forehead and sides of the head; back of neck, back, scapulars, centre upper tail-coverts and the chest glossy green, remainder of the upper tail-coverts violet shaded bronze; tail bluish black with a wash of bronze on the centre feathers and outer webs of the others; wing bluish black with the wing-coverts bright greenish shaded steel blue passing into dark blue on the greater portion of the outer webs of the remainder of the quills; under wing-coverts glossed with steel blue; the green breast is sharply defined from the violet throat and crop; under tail-coverts black broadly edged with glossy bluish violet. Iris yellow; bill and feet black. Total length 7·7 inches, culmen 0·7, wing 4·4, tail 2·5, tarsus 0·8. 19. 1. 71, Camaroons (Crossley).

Young. Similar in plumage to adult. Bill and feet brown; wing 3·4.

The Purple-headed Glossy Starling ranges from Camaroons to the Loango Coast, and eastward to the Upper White Nile.

The species seems to be evenly distributed over the woodlands of Camaroons and Gaboon, as specimens have been obtained at many places, but it may be rare as Mr. Sjöstedt has remarked, who only met with two specimens in the forests near Ndian and Stoke. In Gaboon the type

was discovered by Aubry Lecomte, and the species has been procured as far south as Landana by Petit. In its most eastern known range Emin met with it at Atanga in the Awamba country.

Lamprotornis melanogaster (Plate 47, fig. 1).

- Lamprotornis melanogaster, Swains. An. in Menag. p. 297 (1838)
 "Senegal" !
- Lamprocolius melanogaster, Sharpe, Cat. B. M. xiii. p. 182 (1890);
 Shelley, B. Afr. I. No. 606 (1896); Reichen. Vög. Afr. ii. p. 683
 (1903); Shortridge, Ibis, 1904, p. 175 *Pondoland*; Sparrow, Journ.
 S. Afr. O. U. i. p. 9 (1905).
- Lamprotornis porphyroplevron, Sundev. Œfv. Vet. Ak. Förh. Stockh.
 1850, p. 100 *E. Caffraria*.
- "Lamprocolius corusca, Licht." Bp. Consp. i. p. 415 (1850) *S. Africa*.

Adult male. Head, neck, crop and broad central band down the wing glossy green; forehead and side of head in front of the eye black; crown slightly bluer than the neck; ear-coverts shading into violet behind the eye; upper back green shading into violet on the scapular and into more reddish violet on the middle and lower back and upper tail-coverts; tail black, slightly washed with violet on the outer edges of the feathers; wing, with the greater portion of the median and greater coverts and the secondaries glossy green, remainder of the coverts shaded with steel blue; a fairly broad outer margin to the closed wing glossy purple; under surface of wings and tail brownish black, with a steel blue gloss on the under wing-coverts; lower half of the breast black, slightly washed with bronze and with a violet gloss across the middle chest and on the under tail-coverts. Iris deep yellow; bill and feet black. Total length 8 inches, culmen 0·65, wing 4·35, tail 3·2, tarsus 1·0. ♂, 28. 7. 75, Durban (T. L. Ayres).

Female. Similar in colouring to the male; wing 4·1.

Immature. Similar in colouring to the adults.

The Black-breasted Glossy Starling ranges from Cape Colony over the Eastern African coast to the Equator.

The species has been met with as far west as the Knysna in Cape Colony, by Victorin, and very possibly the type of the species came from that district, as it was certainly not



1. *Lamprocolius melanogaster*.
2. *Spreo shelleyi*.

a native of Senegal as supposed by Hartlaub when he entered it in his "Orn. W. Afr.," in 1857.

Stark writes: "This species is not very common in the Eastern Cape Colony, but is resident, breeding both in the neighbourhood of Grahamstown and Kingwilliamstown. In Natal and Zululand it is fairly abundant and resident, as in the Eastern Transvaal. This Glossy Starling is much shyer and more retired in its habits than its congeners, and confines itself very much to the thicker portions of the coast bush, rarely venturing into the more open country. Its particularly loud and harsh notes are frequently heard when the bird itself is invisible. When not breeding these Starlings are nearly always in small flocks that hunt through the bushes in search of berries and fruit, in addition to various seeds and insects. Like most birds they seem to be particularly fond of termites. In spring they separate in pairs, and proceed to look for a convenient nest-hole in the trunk or limb of a tree, frequently taking possession of the old nesting-place of a Barbet. Into this they carry a few small sticks, pieces of straw and dry grass, and a much larger quantity of hair, wool and feathers. About the end of September, in Natal, three or four eggs are laid, of a pale blue-green, spotted sparingly with pale reddish brown. They are somewhat elongated in shape, and measure about 1.05×0.75 ."

Mr. R. H. Ivy writes from Grahamstown: "This bird is not common here, and though I have seen several clutches of eggs, I myself have only once found the nest, which was placed in a hole in a tree situated in a deep kloof; the eggs, two in number, were of a light sky-blue, peculiarly roughened and quite unspotted."

Major Sparrow also writes: "This bird nests on the Coast of Natal in the early part of November, and lays three pale blue-green unspotted eggs."

I am inclined to think that the eggs above described by Stark really belong to *L. phænicopterus*.

I found the present species to be the most abundant of the Glossy Starling on the Berea hill about Durban, being a more woodland bird than *L. phænicopterus*, and in March always met with it in flocks. It is remarkable how persistently the species keeps near the coast line as the following localities where it has been procured will show: Eschowe (Woodward), Mosambique (Fornasi), Quilimane, Tunungua (Stuhlman), Nguru (Emin), Lindi, Pangani, Kipini, Bugamoyo, Witu (Fischer), Mojoni (Neumann), Malinda and Lamu (Kirk). At Quilimane, Dr. Stuhlmann found it known to the natives as the "Mbrue."

Lamprotornis iris.

Lamprocolius (*Coccycolius*) *iris*, Oust. Bull. Assoc. Sc. France, 1878, No. 580 *Los Island*.

Coccycolius, *iris*, Oust. N. Arch. Mus. (2) ii. p. 155, pl. 7 (1879); Sharpe, Cat. B. M. xiii. p. 185 (1890); Shelley, B. Afr. I. No. 607 (1896); Reichen. Vög. Afr. ii. p. 695 (1903).

Adult. General plumage uniform metallic golden green, with the ear-coverts, sides of the upper neck and the breast glossy reddish violet; under surface of wings and tail dusky brown glossed on the under wing-coverts with steel blue passing into metallic green along the bend of the wing. Iris pale yellow; bill and feet black. Total length 7·8 inches, culmen 0·75, wing 4·2, tail 3·0, tarsus 0·95. *Los Island*.

The *Los Island Glossy Starling* is confined to the Islands of that name.

M. Oustalet, who received this species from the *Los Islands* off the West Coast near Sierra Leone, gives fairly good figures of this beautiful and remarkably local Starling, but does not do justice to the extremely brilliant metallic colouring of the upper parts, which resembles that of the genus *Chrysococcyx* or Golden Cuckoos, which is implied in its generic name *Coccycolius*.

Genus VII. SPREO.

Bill generally black like the tarsi and feet, but in *S. bicolor* a portion of it is yellow: its shape is very Thrush-like, with the nostrils exposed. Wing long and pointed; third primary one of the longest. Tail square or rounded, shorter than the wing; tarsi rather long and the outstretched feet reaching to the end of the tail in all the rufous-breasted species.

Type.

Spreo, Less. *Traité*, p. 407 (1831) *S. bicolor*.

Notauges, Cab. Mus. Hein. i. p. 198 (1851). *S. bicolor*.

The genus is confined to Tropical and South Africa and comprises six species.

KEY TO THE SPECIES.

a. Under tail-coverts white.

*a*¹. Chest and throat similar in colour.

*a*². Upper parts, throat, chest and thighs brown *bicolor*.

*b*². Crown and thighs white *albicapillus*.

*b*¹. Breast orange chestnut, separated from the metallic coloured throat by a white band *superbus*.

b. Under tail-coverts chestnut; throat of metallic colours.

*c*¹. Under surface of wings brown; abdomen, thighs and under tail-coverts deep chestnut.

*c*². Chest rufous buff paler than the abdomen. *hildebrandti*.

*d*². Chest deep chestnut like the abdomen. *shelleyi*.

*d*¹. A large portion of under-surface of wings rufous buff *pulcher*.

Spreo bicolor.

Turdus bicolor, Gm. S. N. ii. p. 835 (1788) *Cape*.

Spreo bicolor, Sharpe, Cat. B. M. xiii. p. 187 (1890); Shelley, B. Afr. I.

No. 608 (1896); Reichen. Vög. Afr. ii. p. 673 (1903); Whitehead, Ibis,

1903, p. 223 *Orange R.*; Clarke, Ibis, 1904, p. 525 *Bloemfontein*;

Shortridge, Journ. S. Afr. O. U. i. p. 19 (1905) *Cape Col.*

Le Spréo, Levaill. Ois. Afr. ii. p. 155, pl. 88 (1799) *Cape Col.*

Adult male. General plumage bronzy brown inclining to black in front of the eyes, slightly greener on the neck and a lilac tinge on the inner portions of the wings; tail more strongly glossed with green; under surface of quills silvery brown with white shafts to several of the outer primaries; abdomen and under tail-coverts white somewhat shaded with rufous buff and strongly contrasting with the thighs, which are of the same brown as

the breast. Iris pale yellow; bill yellow with the upper mandible and end of lower one black. Total length 10 inches, culmen 0·9, wing 6·2, and 5·8, tail 4·1, tarsus 1·5. ♂ and ♀, 9. 8. 02, Deelfontein (Sloggett).

After August, the plumage loses most of its gloss and becomes paler brown, especially on the crown and remains in a somewhat mottled condition until March.

The Cape Brown and white Spreo ranges over Cape Colony, northward to Lake Ngami and the Transvaal.

The species has not been recorded from Damaraland or Great Namaqualand, but occurs at Lake Ngami, and is plentiful to the south of the Orange River. Stark writes: "This Starling is an abundant and well-known species in many parts of South Africa, but from some districts is unaccountably absent. Although very common at Mossel Bay and Port Elizabeth, it is, according to Richard, not found at East London. Of social habits, the Brown and White Starling remains in flocks all the year round. It is nearly always to be found in the neighbourhood of outspans and cattle pastures, where it may be constantly seen perched on the backs of sheep and oxen, engaged in ridding these animals of ticks and other vermin; but probably the bulk of its food, consisting of grubs, beetles and other insects, is obtained from the ground. During the greater part of the year it feeds almost entirely on insects, very rarely taking a few small seeds, but in the fruit season it eats grapes and figs as well as other fruit, and as a result incurs the enmity of the gardeners and fruit growers. The ordinary call-note of the Starling is a fairly loud and rather prolonged whistle. In spring it indulges in a broken and somewhat chattering song, which is not unlike that of the European Starling. As a rule they build their nests at the ends of holes excavated by themselves, to a depth of from 2 to 10 feet, in the banks of rivers or dongas, but frequently they take possession of

holes in walls or under the eaves of farm-houses, and sometimes even build on the ground under stones or rocks. At Saldanha Bay I noticed them building in crevices in the sea-cliffs, and found several colonies nesting in the sides of old wells, at some distance below the surface of the ground. Andersson states that they frequently take forcible possession of the nests of other birds, such as the Woodpecker, Bee-eater and Swallow. The nest is an untidy collection of straws and dry grass, with a central pad of softer material, as hair, wool, or feathers. The eggs, from two to six in number, are of a bright blue colour, usually plain, but occasionally marked with a few spots of reddish brown. Their average size is 1.15×0.85 . In Cape Colony they are laid in August or September."

I frequently saw flocks of these birds quite close to Cape Town, and also at Mossel Bay. In habits they much resemble our English Starling, but their wider wings give them a less compact appearance when flying. All the specimens I procured in January were in the moult.

Captain Reid "took two nests near Ladysmith from the inner walls of a deserted farm-house, one contained five pure blue eggs, the other six red-spotted ones." Mr. T. Ayres writes: "These birds excavate holes for their nests in the perpendicular banks of the Vaal River, 2 or 3 feet from the surface of the ground, and from 2 to 4 feet deep, horizontally. The same holes appear to be used for successive seasons, being merely pierced further each year." He also writes: "I found them first upon the Bushman River in Upper Natal, and in increasing numbers (where the locality was favourable) all along the road to Potchefstroom, in the Transvaal, where they were very plentiful."

Spreo albicapillus.

Spreo albicapillus, Blyth, Journ. As. Soc. Bengal, 1856, p. 301 *Somali*; Shelley, B. Afr. I. No. 609 (1896); Reichen. Vög. Afr. ii. p. 678 (1903); Witherby, Ibis, 1905, p. 518 *Somali*; Erlang. J. f. O. 1905, p. 705.

Notauges albicapillus, Speke, Ibis, 1860, p. 246, pl. 7.

Heteropsar albicapillus, Sharpe, Cat. B. M. xiii. p. 186 (1890).

Crateropus wickenburgi, Lorenz. Orn. Monatsb. 1898, p. 198 *E. of Harrar*.

Adult. Upper parts glossy green, with the forehead, crown and a broad band down the centre of the wing white; lower back, upper tail-coverts, tail and outer edges of the primaries slightly bluer than the mantle; feathers of the rump and the upper tail-coverts generally mottled with whitish ends and shaft-stripes, which pattern is sometimes indicated on the feathers of the hind neck and mantle; wing-coverts ashy brown slightly washed with a green gloss and fading into buffy white on front of wing and on the outer portion of the greater coverts; the remainder of the white band down the wing is formed by broad edges to the outer five secondaries; under surface of the quills and tail blackish brown, with the under wing-coverts white; in front of eyes black; remainder of sides of head and the under parts down to the abdomen dusky brown, rather variable in shade, with a buff or white shaft-stripe down each feather of the throat and chest, wider and often spreading out into terminal margins on the chest; abdomen, thighs and under tail-coverts white. "Iris white; bill and feet black." Total length 10·8 inches, culmen 0·9, wing 6·0, tail 4·8, tarsus 1·5. ♂, 21. 1. 97, The Gooban (L. Phillips).

Immature. Differs in the dark parts of the neck and body being more uniform pale brown with scarcely any green gloss. "Iris brown; bill yellow with the end blackish." Wing 6·2. ♂, juv., 30. 1. 97, Sheikh (L. Phillips).

Nestling. Similar to adult in pattern of plumage, but the dark parts of a more ashy shade with a faint bronzy gloss on the secondaries and a stronger green gloss on the tail. Bill entirely yellow; tarsi and feet brown; wing 3·8. Udwein (Benett Stanford).

The White-crowned Spreo inhabits Somaliland.

Speke, who discovered the species in Somaliland, met with it in large flocks frequenting pasture-land, where cattle feed. Mr. Lort Phillips procured specimens at Gooban and Sheikh, and remarks: "Fairly plentiful towards the southern portion of the plateau. They breed in colonies in March,

and are very noisy. Their nests are very similar to those of *S. superbus*." That is a rounded structure, protected like a Magpie's nest and placed near the ends of boughs. Mr. Elliot met with it at Toyo, and writes: "Not uncommon, very frequently staying about the camp, quite tame and unsuspecting." Mr. Pease found the species in flocks frequenting the open grass prairie with scattered trees, near Hensa and Manda, and informs us that, "Mr. Harwood observed one flock in Abyssinia in very large heavy-foliaged high trees. In the British Museum there are specimens from Balby Marolly and Udwein (Benett Stanford), W. Shebeli (Gillett), Godgat (Hawker) and Fer Lebah (Delamere). The species has also been obtained at Uarandab (Ruspoli), Sessabane, Biji and Adadle (Donaldson Smith), and by Erlanger near Zeila, on the Gulf of Aden, in 11° N. lat.

Spreo superbus.

Lamprocolius superbus, Rüpp. Syst. Uebers. pp. 65, 75, pl. 26 (1845)
Shoa.

Spreo superbus, Sharpe, Cat. B. M. xiii. p. 189 (1890); Shelley, B. Afr. I. No. 610 (1896); Reichen. Vög. Afr. ii. p. 674 (1903); Grant, Ibis, 1904, p. 255 *S. Abyssinia*; Witherby, Ibis, 1905, p. 518 *Somali*; Neum. J. f. O. 1905, p. 237; Erlang. t. c. p. 706 *N. E. Africa*.

Adult. Forehead, crown and sides of head bronze; chin, back of head, neck, back and tail steel-blue, slightly greener on the crop and middle back and shading into golden-green on the wings; median and greater wing-coverts, with rather large velvety black terminal spots; under surface of the quills and tail dull black; under wing-coverts white, with the outer feathers towards the bend of the wing glossy green; breast orange chestnut separated from metallic colouring of crop by a broad white band; centre of abdomen and the under tail-coverts white. "Iris light straw colour; bill and feet black." Total length 7·5 inches, culmen ·07, wing 4·9 and 4·6, tail 2·9, tarsus 1·25. ♂, 6. 3. 97, Wagga and ♀, 14. 2. 97, Sogsoda (L. Phillips).

The Superb Spreo ranges over Eastern Africa from the north of Lake Nyasa to about 12° N. lat.

The most southern range known for the species is German East Africa, from whence Sir Alfred Sharpe procured an example, which is now in the British Museum, and others have been recorded from Ngasi Lake and Idunda (Fülleborn) and the Usafua and Uhebe districts (Marwitz).

This Starling steadily becomes more plentiful as we approach the Masai district and Somaliland. Böhm informs us that, in Ugogo, he observed it during the day frequenting the pasture-land in swarms, retiring in the evenings to roost in high trees, from which it expelled all other birds. Emin records the species as plentiful at Lado, and Heuglin mentions it from the Djur country, but apparently it does not extend further north down the Nile Valley than 7° N. lat. On following its more eastern range, we find it recorded by Mr. Jackson as plentiful at Elgeyu. Dr. Hinde writes from Machako's: "Pairs common in station. Flocks common along the beds of streams. Nest in tree-stumps. Sing well." Fischer met with it generally distributed during his travels from the Pare Mountains to Barawa, on the Somali coast. Mr. Lort Phillips writes from Somaliland: "Very common throughout the country in flocks. They were breeding in March. Their nests are constructed of grass and are nearly spherical, with a hole in the side, the whole structure covered over with thorny boughs, after the fashion of a Magpie's nest; they are placed near the ends of the boughs. Native name, 'Shamber Lo' (Cow-birds)." Erlanger found one of their nests containing four eggs at Artu, in Northern Somaliland, March 1, 1900. These eggs are described as of a beautiful glossy uniform pale bluish green, and measured on an average 1.0 × 0.75. Mr. Elliot writes: "It frequently goes in flocks of considerable size, has a short, pleasant song, and was a most familiar visitor to the camp, coming about the tents quite fearlessly seeking for food. It has such a lovely

plumage and pretty ways that it was always welcome, its white eyes gazing up at you from out the black feathers of the head, with a very peculiar effect." Mr. Hawker writes: "This bird was very common after leaving Laferug for the plateau. It was very tame, and came into camp fearlessly, feeding on scraps. Often, while we halted at midday, this bird and *Lamprocolius chalybæus* would walk quite close to our feet and pick up scraps thrown to them."

From further north Mr. Pease writes: "The commonest bird in the low countries, it was never seen on the high plateaux, but was observed near Lake Twai and all down the Hawash Valley." The species was discovered in Shoa, by the late Major Harris, and has been fairly well figured by Wolf (Rüpp. Syst. Uebers. p. 26). In Shoa it is abundant, and according to Antinori, especially so throughout the wide valley of Daimbi; but Mr. Oscar Neumann remarks that he did not find it to be so common in that country as it was in Masailand.

Spreo hildebrandti.

Notauges hildebrandti, Cab. J. f. O. 1878, p. 233, pl. 3 *Ukamba*.

Spreo hildebrandti, Sharpe, Cat. B. M. xiii. p. 190 (1890); Shelley, B. Afr. I. No. 611 (1896); Reichen. Vög. Afr. ii. p. 676 (1903).

Adult. Head, neck and back deep glossy violet blue; in front of eyes and the ear-coverts darker and less glossy; hinder half of neck deep glossy bottle green; wings glossy green, slightly bluer on the primaries and deep steel blue on the lesser coverts, outer greater coverts and primary coverts; median and greater coverts with large terminal spots of velvety black edged with steel blue; tail of a greener blue than the back; under surface of tail and wings brownish black, with a strong blue gloss on the under wing-coverts; remainder of the under parts rich chestnut, slightly paler on the chest. "Iris deep orange red; bill and feet black" (Hildebrandt). Total length 7·8 inches, culmen 0·65, wing 4·7, tail 3·1, tarsus 1·25. 28. 2. 96, Muani (Ansorge).

Immature. Much duller; upper half of head, back of neck, and the back

dusky blackish, slightly washed with greenish blue; no black spots on the wings; chin and throat dusky brown with a slight rufous shade; remainder of under parts rufous; wing 4.3. 4. 2. 95, Kiboko River (Ansorge).

Hildebrandt's *Spreo* inhabits Southern Equatorial East Africa.

The most southern range known to me for this species is Mpapwa, due west of Zanzibar, where it has been procured by Emin. Fischer obtained specimens at the Simiu River and at Massa in the Ukamba district, close to Ikanga, where the species is known to the native as the "Itsokoi," and was discovered there by Hildebrandt. In the British Museum there are two of Dr. Ansorge's specimens procured in Ukamba, at Muani, and the Kiboko River.

Spreo shelleyi (Plate 47, fig. 2).

Spreo shelleyi, Sharpe, Cat. B. M. xiii, p. 190 (1890) *Somali*; Shelley, B. Afr. I. No. 612 (1896); Elliot, Field Columb. Mus. i. No. 2, p. 32 (1897) *Haud*.

Spreo hildebrandti shelleyi, Reichen. Vög. Afr. ii. p. 677 (1903); iii. p. 837 (1905); Erlanger, J. f. O. 1905, p. 707.

Type. Similar to *S. hildebrandti*; but differs in the tail being violet blue with no shade of green, and in the chestnut of the under parts being darker on the chest than on the abdomen and under tail-coverts. "Iris orange" (Donaldson Smith). Total length 8.2 inches, culmen 0.65, wing 4.6, tail 3.4, tarsus 1.15. Somaliland (L. Phillips).

Immature. Differs in having the head and neck pale brown, inclining to sandy buff on the throat, these parts mottled with deep blue feathers; wing 4.3. ♂, juv., 7. 12. 94, W. Shebeli (Gillett).

Shelley's *Spreo* inhabits Somaliland.

The type of the species, which I have here figured, was discovered in Somaliland, by Mr. Lort Phillips, who writes: "Very rare, only seen on two or three occasions on the plateau. They were remarkably shy, went in small flocks, and much resembled *S. superbus* in their habits." Mr. Elliot

obtained two specimens on the Haud, and remarks: "Only seen on the high plateau, and apparently nowhere very abundant. I do not remember ever seeing it loitering in and about the camp, as is the habit of *S. superbus*, and, so far as I have observed, it goes only in small flocks." There is, in the British Museum, an immature bird shot by Mr. F. Gillett in W. Shebeli. Dr. Donaldson Smith has met with the species at Hargeisa and Darar, and in the Arussi and Ennia Gallaland, to the south and east of Shoa, Erlanger found it to be very abundant and tame, following his caravan during the march.

Spreo pulcher.

Turdus pulcher, P. L. S. Müll. S. N. Süppl. p. 139 (1776) *Senegal*.

Spreo pulcher, Sharpe, Cat. B. M. xiii. p. 191 (1890); Shelley, B. Afr. I. No. 613 (1896); Reichen. Vög. Afr. ii. p. 675 (1903); A. L. Butler, Ibis, 1905, p. 325 *Soudan*.

Turdus erythrogaster, Bodd. Tabl. Pl. Enl. p. 22 (1783).

? *Turdus chrysogaster*, Gm. S. N. ii. p. 835 (1788) *Senegal*.

Lamprotornis rufiventris, Rüpp. N. Wirb. Vög. pp. 24, 27, pl. 11 (1835)
Abyssinia.

Lamprotornis chrysogaster var. *abyssinica*, Rüpp. t. c. pl. 11, fig. 1
Abyssinia.

"*Lamprotornis cinereiceps*, Würt." Heugl. J. f. O. 1867, p. 294
Abyssinia.

Adult. Head bronzy brown, black in front of eyes; remainder of the upper parts, neck and crop glossy green of a bluer shade on the tail; inner webs of the primaries mostly rufous shaded white; outer half of the under wing-coverts glossed with green, the remainder cinnamon like the breast, thighs and under tail-coverts. Iris pale yellow; bill and feet blackish. Total length 8 inches, culmen 0·8, wing 4·7 and 4·6, tail 2·8, tarsus 1·35. ♂, 10. 61, below Khartoum (Petherick), and ♀, Abyssinia (Rüppell).

Immature. Differs in having the head, neck and back brown; back with a very slight green gloss; throat pale brown, with no gloss, and shading gradually into cinnamon on the lower half of the breast. Bill yellow, with the tip dusky; wing 4·4. ♂, 24. 7. 68, Waliko (Jesse).

The beautiful *Spreo* ranges from Senegambia to the Niger and eastward to the Red Sea.

The home of the species is Northern Abyssinia, from whence it wanders into West Africa. The type was procured in Senegal where it has more recently been obtained by Marche and De Compiègne. Dr. Rendall records it from Bathurst on the Gambia and Verreaux received it from Casamance and Bissao. Captain Giffard shot a specimen in the Hinterland of the Gold Coast in the Mossi country, and Mr. Hartert found it abundant in small flocks in the Gandu and Socoto countries of the Niger district to the north of 10° N. lat., which is its most southern known range. It probably increases in numbers as we follow its range eastward, for according to Heuglin, it is the most abundant of the Glossy Starlings, from Kordofan to the Red Sea, and ranges northward to 20° N. lat. It inhabits the open country below 600 feet, where it is to be seen in small flocks. It breeds in September and October, when scarcely a bush, on some of the plateaux, is without a nest of this Starling. The nest is large, constructed externally of twigs, lined with straw and soft materials; and contains three or four eggs, which are clear greenish blue, with violet or brownish red spots, largest and most numerous towards the thick end, and measures about 1.05 × 0.72.

Blanford writes (*Geol. & Zool. Abyss.* p. 397): "This species was never observed on the highlands or to the south of Massowa, but it was common about Ailet, Ain, &c., at the base of the hills, and in the Lebka and Anseba valleys, usually occurring in small companies or flocks, and feeding on the ground on insects, not unfrequently in company with *Lamprocolius chalybæus*, which it greatly resembles in flight and habits."

The Hon. N. D. Rothschild and Mr. Wallaston (*Ibis*,

1902, p. 12), while at Shendi, saw these Starlings occasionally "in small parties of four or five, always several miles out in the desert. They were very wary and difficult to approach. According to Heuglin, this species breeds in September and October; but our young bird, caught on March 23, cannot have been out of the nest for more than a few days." Mr. Witherby (Ibis, 1901, p. 249) met with the species some fifty miles south of Khartoum and remarks that it is shy and artful, keeping one of the party on watch from a top-most bough. "Just as you arrive within gunshot the sentinel gives a warning whistle, so shrill that it sounds almost like a squeak, at which all the flock take a short straight flight to another tree. When feeding on the ground this species is more easily approached, and its gait and action are similar to those of our Starlings."

According to Mr. A. L. Butler's notes from the Egyptian Soudan, the species is common between 12° and 18° N. lat., but he did not observe it further south than Fashoda, and writes: "I have not found eggs or young, but the old nests, built of sticks and placed in low thorn-trees, are very conspicuous objects in the desert-scrub. Being well protected by the thorns among which they are built, they last in the dry climate for many years, and the abundance of these old nests gives one at first a very exaggerated idea of the quantity of Starlings necessary to build them. These birds are generally met with in rather small flocks; I never saw them in such large assemblies as *Lamprocolius chalybæus*. They feed principally on the ground; their note is a harsh 'kree'; the whitish colour on the primaries is conspicuous in flight."

Genus VIII. ONYCHOGNATHUS.

Bill somewhat variable, but generally fairly strong, with the culmen curved excepting in the subgenus *Cinnamopterus*, the one species of which has the bill slender and the culmen nearly straight; bill black excepting in the one species of the subgenus *Pilorhinus*, in which it is white. The nasal orifice is exposed, excepting in two species, *O. albirostris* and *O. salvadorii*, and the latter was made the type of *Galiopsar* on account of its having a frontal lump or crest of brittle-like plumes. Wings black and rufous, alike in both sexes, with the glossy edges of the secondaries sometimes more or less disintegrated. Tail variable, in length and graduation of the feathers. Tarsi and feet blackish and in all their other characters the males closely resemble each other, but the plumage of the females is more variable; it resembles that of the male in *O. frater*, *O. caffer*, and *O. salvadorii* and differs in the others in the grey colouring of the head and neck only, excepting in *O. tenuirostris*, in which the female has, in addition, some grey edges to the feathers of the lower back and breast.

Type.

Ptilonorhynchus (non Kuhl.) Rüpp. N. Wirb. Vög. p. 22 (1835)	<i>O. albirostris.</i>
Onychognathus, Hartl. Rev. et Mag. Zool. 1849, p. 494.	<i>O. fulgidus.</i>
Pyrrhocheira, Reichenb. Av. Syst. pl. 53 (1850).	<i>O. caffer.</i>
Amydrus, Cab. Mus. Hein. i. p. 201 (1851)	<i>O. morio.</i>
Pilorhinus, Cab. l. c.	<i>O. albirostris.</i>
Cinnamopterus, Bp. C. R. xxxvii. p. 830 (1853)	<i>O. tenuirostris.</i>
Nabouroupus, Bp. Notes Coll. Delattre, p. 8 (1854)	<i>O. caffer.</i>
"Oligomydrus Schiff." Hartl. Rev. et Mag. Zool. (2) x. p. 348 (1858)	<i>O. tenuirostris.</i>
Hagiopsar, Sharpe, Cat. B. M. xiii. p. 168 (1890)	<i>O. tristrami.</i>
Galeopsar, Sharpe, Ibis, 1891, p. 241	<i>O. salvadorii.</i>

The genus, with the exception of one species from Palestine (*O. tristrami*), is confined to the Ethiopian Region, where it is represented by eleven known species.

KEY TO THE SPECIES.

a. Nostrils exposed.

*a*¹. Primaries darker; first long primary with entire outer edge black.

*a*². Tail more graduated, longer than wing.

*a*³. Larger: wing 5·2 to 6·2 inches. *fulgidus.*

*b*³. Smaller: wing 4·9 to 5·2. *hartlaubi.* ♀

*b*². Tail rounded, shorter than wing *walleri.*

- b*¹. Primaries paler; first long primary with entire basal half pale.
- c*². Tail more rounded, graduation less than 1 inch; sexes alike in plumage.
- c*³. Under surface of primaries darker cinnamon with blackish ends *frater.*
- d*³. Under surface of primaries paler sandy buff with pale dusky ends *caffer.*
- d*². Tail more graduated, graduation more than 1 inch.
- e*³. Bill stouter; culmen more curved.
- a*⁴. Outer web of first primary cinnamon nearly to the end; adult females with the head grey streaked with glossy violet.
- a*⁵. Wing 5·3 to 6·3; tail 5·1 to 6·1 *morio.*
- b*⁵. Wing 6·1 to 6·6; tail 5·8 to 6·8 *rueppelli.*
- b*⁴. Outer web of first long primary with the end half black; adult females with the head and neck uniform grey *blythi.*
- f*³. Bill very slender; culmen nearly straight *tenuirostris.*
- b*. Nostrils covered by hair-like plumes.
- c*¹. Bill white; tail rounded, shorter than wing; no large lump of bristly feathers on the forehead; adult females with the head and neck grey *albirostris.*
- d*¹. Bill black; tail long and strongly graduated, a lump of bristly feathers on front of crown *salvadorii.*

Onychognathus fulgidus.

Onychognathus fulgidus, Hartl. Rev. et Mag. Zool. 1849, p. 495, pl. 14, figs. 2, 3, *St. Thomas Isl.*; Sharpe, Cat. B. M. xiii. p. 165 (1890); Shelley, B. Afr. I. No. 619 (1896); Reichen. Vög. Afr. ii. p. 701 (1903); Salvad. Ac. Sc. Torino, 1903, p. 31; Bocage, Journ. Lisb. 1904, p. 78 *St. Thomas Isl.*

"*Onychognathus sancti-thomæ*, Hartl." Bocage, Journ. Lisb. 1889, p. 35. *St. Thomas Isl.*

Amydrus fulgidus, Neum. J. f. O. 1904, p. 569, *St. Thomas Isl.*

Adult male. Plumage, with the exception of the primaries, glossy blue black with a violet shade on the crown, lower neck, back, upper tail-coverts, scapulars, lesser wing-coverts, breast, thighs and under tail-coverts; remainder of head and neck, portion of wing and the tail glossed with green; primaries dark cinnamon above, slightly paler beneath, with the outer quill and broad ends to the others black. Iris red; bill brownish

black; feet black. Total length 14 inches, culmen 1.4, wing 6.2, tail 6.5, tarsus 1.25, 8.90. ♂, 8.90, St. Thomas Island.

Adult female. Differs in having the head and neck ashy grey, mottled with glossy green shaft-stripes. Total length 13.0 inches, culmen 1.3, wing 5.8, tail 5.8, tarsus 1.2. ♀, 8.90, St. Thomas Island.

The St. Thomas Island Chestnut-winged Starling inhabits the islands of St. Thomas and Rolas.

The species, according to Mr. F. Newton, is very abundant on St. Thomas Island, where it is known to the inhabitants as the "Pastro," and it is apparently equally so on the adjacent Rolas Island. On the adjoining continent it is replaced by a small representative, *O. hartlaubi*, similar to it in form and colour.

Onychognathus hartlaubi.

"*Onychognathus hartlaubi*, G. R. Gray," Hartl. P. Z. S. 1858, p. 291

"*Fernando Po*"; Sharpe, Cat. B. M. xiii. p. 166 (1890); Shelley, B. Afr. I. No. 620 (1896); Reichen. Vög. Afr. ii. p. 702 (1903); iii. p. 337 (1905); Kemp, Ibis, 1905, p. 246 *Bo*.

Amydrus reichenowi, Cab. J. f. O. 1874, p. 232 *Aguapim*.

Onychognathus intermedius (non Hartert, 1891), Hartert, Nov. Zool. 1895, p. 56 *Congo*.

Amydrus fulgidus harterti, Neum. Orn. Monatsb. 1903, p. 183 *Fantee*; id. J. f. O. 1904, p. 569.

Adults. Alike in colouring to *O. fulgidus*, but smaller. Total length 12 inches, culmen 1.2, wing 5.2 and 4.9, tail 5.1, tarsus 1.1. ♂, Fernando Po, *type*. ♀, 2.83, Semmio (Bohndorff).

Hartlaub's Chestnut-winged Starling ranges from Sierra Leone to the Congo, eastward into the Niam-Niam country and possibly occurs on Fernando Po.

The most northern range known for the species is Sierra Leone, where Mr. Robin Kemp has procured a specimen at Bo. Dr. Büttikofer has recorded it from Liberia. The type of *Amydrus reichenowi* came from the Aguapim Mountains,

so that the more recent name, *Amydrus fulgidus harterti*, proposed for this supposed small race, by Mr. Neumann in 1903, is superfluous. The Drs. Reichenow and Lühder met with the species at Albouri, in small flocks, frequenting the crowns of the high trees and feeding on berries and insects. Ussher procured specimens in Fantee and others have been obtained at Prashu and Kwissa by Mr. Boyd Alexander, who writes: "The species haunts hilly situations in the forest; it is not found in the bush-country."

The types, both male and female, are labelled as coming from Fernando Po, but as Mr. Oscar Neumann suggests (J. f. O. 1904, p. 568), it is quite possible that they were obtained by Thomson in Nigeria, where the species has recently been met with by Dr. Ansorge. It should also be remarked that Prof. Bocage refers Mr. F. Newton's specimen from Fernando Po to this species and not to *O. walleri preussi*, the only Chestnut-winged Starling met with on that island, by Mr. Boyd Alexander. These two forms are, however, very nearly allied, with the pattern and colouring of the wings alike, and might easily be confounded, but these are indifferent reasons for not admitting the present one to be a native of Fernando Po, especially as both birds are very evenly distributed over Camaroons, and the present species ranges eastward into the Niam-Niam country, where it has been obtained at Semmio by Bohndorff. In the British Museum there is one of Ansell's specimens from the Ogowé River in Gaboon and two from the Aruwimi River, collected by the late Capt. Guy Burrow, these, both sexed as males, have the wing measurements 5·0 and 5·4 inches and the species increases, on an average, slightly in size as we follow its range southward, and for this reason Dr. Hartert bestowed the name *O. intermedius* upon a specimen procured at Yambuya by Jameson.

The Congo bird is not admitted by either Dr. Reichenow or Mr. Oscar Neumann to be separable from the typical *O. hartlaubi*, Gray, and I myself strongly object to recognising as subspecies, forms which can only be said to be, on an average, larger or smaller than the typical race.

Onychognathus walleri.

Amydrus walleri, Shelley, *Ibis*, 1880, p. 335, pl. 8 *Usambara*; Sharpe, *Cat. B. M.* xiii. p. 164 (1890); Shelley, *B. Afr.* I. No. 615 (1896).

Pyrhochoira walleri, Reichen. *Vög. Afr.* ii. p. 697 (1903).

Amydrus elgonensis, Sharpe, *Ibis*, 1891, p. 242 *Mt. Elgon*; Alexander, 1903, p. 358 *Fernando Po.*

Amydrus walleri elgonensis, Neum. *J. f. O.* 1904, p. 569 *Mau, Nandi Elgon.*

Onychognathus preussi, Reichen. *J. f. O.* 1892, p. 184 *Buca*; Shelley, *B. Afr.* I. No. 621 (1896); Reichen. *Vög. Afr.* ii. p. 702 (1903); iii. p. 838 (1905).

Amydrus walleri preussi, Neum. *J. f. O.* 1904, p. 569 *Camaroons, Fernando Po.*

Amydrus nyasæ, Shelley, *Ibis*, 1898, pp. 554, 557 *Nyasaland.*

Adult male. Head, neck and body black with a strong violet blue gloss of a greener shade on the sides of the head and neck and the throat; tail dull black with a slight steel green gloss on the edges of the feathers; wing black with a large cinnamon patch over the basal two thirds of the primaries, but leaving the upper side of the shafts black; the coverts and secondaries with glossy violet blue edges; under wing-coverts, like the dark portion of the quill, dusk black, but slightly glossed with violet at the edges of the feathers. "Iris dark crimson; bill and feet black" (Jackson). Total length 9 inches, culmen 0·8, wing 5·0, tail 3·8, tarsus 1·0, *Usambara* (Kirk).

Adult female. Differs only in being slightly paler and duller, with the head and neck grey mottled on the hinder half of the head and on the throat with glossy violet shaft-stripes to the feathers. Total length 9·2 inches, culmen 0·75, wing 4·9, tail 3·6, tarsus 1·0.

In the female type of *A. nyasæ* the wing measures 5·2 and in the type of *A. elgonensis*, 4·6.

Waller's Chestnut-winged Starling ranges from Lake Nyasa to Mount Elgon and westward on to Fernando Po.

In its most southern range Mr. Alfred Sharpe obtained the

type of *Amydrus niasæ*, probably near Zomba. Dr. Marwitz found the species at Mahanga in Ungoni, and Dr. Fülleborn at Bulongwa, at the northern end of the Livingstone Range.

The species was discovered by Sir John Kirk, in the highlands of the Usambara country. To the south of Kilimanjaro, at Kibosho, Mr. Neumann found the species, and Mr. Jackson has collected a fine series from the Ravine at Mau, on the highlands near Nandi, and on Mount Elgon, where he procured the type of *Amydrus elgonensis*, and wrote, June 4, 1898: "Not seen in Nandi before to-day, when I found a pair breeding in a hollow tree some 30 feet from the ground."

Mr. Boyd Alexander obtained five males and two females on Fernando Po, where he considered it to be confined to the southern portion of that island, and remarks that these specimens agree better with *A. elgonensis*, Sharpe, than with *A. walleri*, Shelley, which he suggests should be kept distinct. His specimens really belong to *O. preussi*, Reichen., if we wish to break the species up into subspecies. In following the range, as I have above given it, the species gradually diminishes in size, the extremes being represented by the type of *Amydrus nyasæ*, ♀, wing 5·2 inches, and *O. preussi*, ♀, wing 4·5, while the wings in the females measure in *A. walleri*, 4·9, and in *A. elgonensis*, 4·65.

Onychognathus frater.

Amydrus frater, Sclat. & Hartl. P. Z. S. 1881, p. 171 *Sokotra*; Sharpe, Cat. B. M. xiii. p. 164 (1890); Shelley, B. Afr. I. No. 618 (1896); Grant & Forbes, N. Hist. Sokotra, p. 24 (1903); Neum. J. f. O. 1904, p. 569 *Sokotra*.

Pyrhocheira frater, Reichen. Vög. Afr. ii. p. 698 (1903).

Adult. General plumage glossy violet black, with a tinge of green generally more evident on the sides of the head and the under parts; primaries deep cinnamon, with the blackish ends broadest on the outer long

feather where it entirely covers the inner web for 1·8 inches from the tip and extends on the outer web 0·7 further down. "Iris greyish brown; feet brown" (Balfour). Total length 12 inches, culmen 1·2, wing 6·1, tail 5·5, tarsus 1·45. ♂, 24. 1. 99, Sokotra (Grant & Forbes).

Adult female. Like the male in colouring as well as in size.

Immature. Differ from adults in being duller and more dusky, and in the secondaries having some rufous next to their shafts, most strongly marked on those nearest to the primaries.

The Sokotra Chestnut-winged Starling is confined to the Island of Sokotra.

Prof. J. B. Balfour discovered the species. Mr. Ogilvie Grant writes: "During our stay in the neighbourhood of Hadibu, I never came across the species, but may possibly have overlooked it among the numbers of *A. blythi* that daily frequented the plain. This is, however, unlikely, for both species were almost always in pairs or small flocks, and the grey-headed females of *A. blythi* were conspicuous at a long distance. After a brief acquaintance with the two species, one never had any difficulty in distinguishing between them. A pair of entirely black plumaged Starlings might safely be put down as *A. frater*; and if one wanted further evidence, the much larger bill and shorter tail—a character specially conspicuous in flight—afforded ample proof. The call-note 'pee-hoo,' is a clear, soft, bell-like sound, easily distinguished from that of *A. blythi*; but, like that species, the female utters a harsh Jay-like 'sraich' when wounded or suddenly alarmed. The behaviour of the present species is, moreover, very different from that of Blyth's Starling. It is much tamer, and allows one to approach quite close without displaying any trace of alarm. The two species may occasionally, perhaps accidentally, be found associating with one another while feeding, but as a rule they are met with separately. It was not until we reached Homhil, at the east end of the island, that female examples were pro-

cured. Both there and at our highest camp, Abho Dimellus, this bird was fairly common. A few pairs were met with, accompanied in every case by only one young bird, and it may thus be assumed that only one egg is laid at a sitting."

The species may be distinguished from the males of *O. blythi* by the wing not being more than 6 inches, and the graduation of the tail 0·5 to 0·8, which is much less than in *O. blythi*, and from *O. tristrami* and *O. caffer* by the darker colouring of the chestnut on the wings.

Onychognathus caffer.

Coracias caffra, Linn. S. N. i. p. 159 (1766) *Africa*.

Amydrus caffer, Sharpe, Cat. B. M. xiii. p. 169 (1890); Shelley, B. Afr. I. No. 614 (1896); Whitehead, Ibis, 1903, p. 323 *Orange R.*

Pyrrhochiera caffra, Reichen. Vög. Afr. ii. p. 697 (1903).

Sturnus nabouroup, Daud. Traité ii. p. 308 (1800) *ex Levaill.*

Amydrus nabouroup nabouroup, Neum. J. f. O. 1904, p. 569 *Western S. Afr.*

Lamprotornis fulvipennis, Swains. in Menag. p. 298 (1838) *ex Levaill.*

Pyrrhocheira caffra intensitincta, Reichen. Vög. Afr. ii. p. 697 (1903) *Port Elizabeth*; iii. p. 837 (1905).

Pyrrhochira intensitincta, Sharpe, Ibis, 1894, p. 366 *Cape Col.*

Amydrus nabouroup intensitinctus, Neum. J. f. O. 1904, p. 569 *Eastern Cape Col. Natal.*

Amydrus nabouroup benguellensis, Neum. Orn. Monatsb. 1903, p. 184 *Benguela*; id. J. f. O. 1904, p. 569.

Adult. Plumage, with the exception of the primaries, glossy black, greener on the head, wings, tail, abdomen, thighs and under tail coverts, and of a more violet shade on the back, scapulars, lesser wing-coverts, lower throat and chest; primaries pale rufous, buff shading into deep cinnamon on their outer edges, and with the first quill and broad ends to the others black. "Iris orange yellow; bill and feet black." Total length 10·7 inches, culmen 0·9, wing 6·3 and 5·9, tail 4·8, tarsus 1·3. ♂, 23. 4. 02 and ♀, 15. 4. 02, Deilfontein (Col. Sloggett).

The Caffer Chestnut-winged Starling ranges over South-western Africa from Angola into the Cape, Natal and Orange River Colonies.

The occurrence of the species so far north as Angola rests on a specimen procured by Henderson. Monteiro writes: "Very abundant near the coast from Nova Redondo to Mossamedes (or Little Fish-Bay). Never observed it more to the north than the former locality. Only makes its appearance some months of the year (from November to June). Keep together in small flocks, uttering a cry very much like that of a Starling. They accumulate a large open nest on some flat-topped tree, without the least shade or protection, and on which as many as eight or ten birds are sitting together hatching their eggs, presenting a very singular appearance." One of his specimens is the type of *A. nabouroup benguellensis*, Neumann. Anchieta found it at the Rio Coroca, and according to Andersson: "This is a tolerably common bird in Damaraland and in the adjacent countries to the north and east, as well as in Great and Little Namaqualand. It is gregarious in its habits, congregating in small flocks, and is partial to rocky localities; it sometimes flies at a considerable height, and frequents water morning and evening. It feeds on seeds, berries, insects, &c."

Stark informs us that "in Cape Colony it is not found near Cape Town, is abundant at Nel's Poort and elsewhere in the Karroo, also near Colesberg, and at Kakama, on the Orange River," and has been met with as far east as the Orange River Colony.

With regard to its habits, Stark writes: "This species is more restricted in its distribution, but frequents much the same localities as the common Red-winged Starling, which latter bird it also resembles in its general habits. The two species are sometimes found together, as at Nel's Poort, near Beaufort West, but according to Layard, they do not mix in the same flock, and the present is easily distinguished during flight by its square tail, as well as by the pale colour of the under side of the wing.

“The Pale-winged Starling builds its nest in the crannies of rocks, of straw, dried grasses and various soft materials. The eggs, three to five in number, are smaller than those of the Red-winged Starling, as well as somewhat paler in colour, with smaller markings. They measure about 1·20 × 0·80.”

I have added Natal to the range of this species on the authority of Mr. Oscar Neumann, as I am not otherwise aware of its having been recorded from that colony.

Onychognathus morio.

Turdus morio, Linn. S. N. i. p. 297 (1766) *Cape*.

Amydrus morio, Sharpe, Cat. B. M. xiii. p. 161 (1890); Shelley, B. Afr. I. No. 616 (1896); Reichen. Vög. Afr. ii. p. 699 (1903); Whitehead, Ibis, 1903, p. 223 *Orange R.*; Shortridge, Ibis, 1904, p. 175 *Pondoland*; Clarke, t. c. p. 525 *Bloemfontein*; Neum. J. f. O. 1904, p. 569.

Corvus rufipennis, Shaw, Gen. Zool. vii. (2) p. 373 (1809) *Cape*.

Amydrus gracilirostris, Neum. Orn. Monatsb. 1903, p. 183 *Cape Col.*; id. J. f. O. 1904, p. 569.

Amydrus morio orientalis, Hartl. Abhandl. Bremen, 1891, p. 26, pt.

Amydrus morio shelleyi, Hartert, Cat. Mus. Senck. p. 75, note (1891) *E. Africa*; Neum. J. f. O. 1904, p. 569 *German and British E. Afr.*

Amydrus morio intermedius, Hartert, l. c. *E. Africa*.

Amydrus morio rüppelli (non Chenu), Neum. J. f. O. 1905, p. 241; Erlang. t. c. p. 709; Reichen. Vög. Afr. iii. p. 837, 1905.

Subspecies, a.

Amydrus rueppelli, Verr. Chenu, Enc. Meth. v. p. 166 (1856) *Abyssinia*; Sharpe, Cat. B. M. xiii. p. 162 (1890).

Amydrus morio rüppelli, Reichen. Vög. Afr. ii. p. 699 (1903, pt.); Neum. J. f. O. 1904, p. 569.

Adult male. Plumage, with the exception of the primaries, violet shaded steel blue, tinged with green on the forehead, sides of head, tail, portion of wings, upper throat, thighs and under tail-coverts; primaries cinnamon, slightly paler beneath than above, and with blackish ends; the chestnut is generally present on the first quill and extends far beyond the end of the secondaries. “Iris dark brown, with an outer circle of crimson; bill and feet black” (Stark). Total length 12·2 inches, culmen 1·1, wing 6·0, tail 5·3, tarsus 1·3. ♂, 24. 4. 66, Cape Town (Andersson).

Adult female. Differs in the head and neck, being ashy grey, streaked with glossy violet shaft-stripes. Wing 5·5, tail 5·0. ♀, 21. 4. 66, Cape Town (Andersson).

The Common Chestnut-winged Starling ranges from the Cape of Good Hope over the eastern half of the continent into Abyssinia.

The species has been divided into four: (1) *O. morio* (Linn.), with a dark blue gloss, from Cape of Good Hope; (2) *Corvus rufipennis*, Shaw, also from the Cape district, but with a green shade, since named by Mr. Neumann, *Amydrus gracilirostris*, I look upon as a mere variety; (3) *A. morio shellehyi* and *intermedius*, Hartert, from East Africa: (4) *A. ruepelli*, Verr., from North-east Africa.

The species increases slightly in its average size towards its northern limit, as is the case with many of the wide ranging African birds; but on this account to draw any definite boundary between the range of *O. morio* (Linn.) and *O. ruepelli* (Verr.) appears to me to be misleading.

Regarding its habits, Stark writes: "This common and well-known species remains in flocks all the year round, and usually breeds in colonies, but occasionally in single pairs. Their presence is easily recognised by their loud, prolonged and musical whistling note, which is constantly uttered, both during flight and when at rest. On the wing they are as readily distinguished by their bright chestnut wing-quills and wedge-shaped tails, the females by their greyish heads. During the greater portion of the year these Starlings feed upon larvæ and insects, but during the fruit season they devour grapes, figs and other soft fruit. They are in consequence not looked upon with a favourable eye by farmers and fruit growers. I have seen them catch mature locusts on the wing as well as flying termites, and on one occasion I

noticed a pair devour the callow young of a Cape Sparrow, notwithstanding a sturdy defence by the parent birds. On the coast the Red-wing frequents the beach and searches the sea-weed for sandhoppers and small molluscs; berries of various kinds are habitually eaten, especially those of the syringa-tree, on which they sometimes gorge themselves until they are no longer capable of flight, or perhaps are affected by some narcotic property of the berry itself.

“These Starlings build their nests of small sticks, straws and various soft materials, in the holes and crevices of rocks and krantzies, sometimes among the rocks on the beach, just out of reach of the waves, occasionally under the roofs of houses. The eggs, four or five in number, are bluish green, sometimes sparingly marked, chiefly at the larger end, with spots of reddish brown. They average 1.45×0.95 .”

During my short visit to Cape Colony I saw the species close to Cape Town, Ceres and Port Elizabeth. In Natal the Messrs. Butler, Fielden and Reid, mention these Starlings as, “Common in flocks in rocky places, especially in the Newcastle district, scattering in pairs for the breeding season in October. Butler gives the following account of its nidification. Found a nest nearly finished, on November 6, 1881. It was placed on a ledge of rock under a projecting slab of rock overhanging a stream, about 3 feet above the level of the water, and consisted of a large mass of dry grass, matted together with mud, and lined with the same kind of grass, looking not unlike a large Blackbird’s nest; the old birds were by no means shy, flying to and fro with building material in their beaks in my presence.”

From the Zambesi Mr. Boyd Alexander writes: “Not common. Only three specimens obtained. When in flocks they are shy and fly at a considerable altitude. They breed about the middle of August, generally choosing holes in the

baobab-trees for their nests, and to the selected trees the pairs resort, both morning and evening, some time before nesting commences."

The species is apparently abundant throughout Nyasaland, and Böhm met with it along the shore of Lake Tanganyika, where he remarked their peculiar melodious song, and that they left the water, as night approached, to roost in the cliffs. Sir Harry Johnston writes from Kilimanjaro: "Met with in small flocks of five or six. They utter a low pleasing cry or soft whistle, and frequent small thickets." Among Mr. Jackson's notes I find the following observation made in April, 1896: "Large flocks of these birds were observed flying across the Kedong Valley, from west to east." In Somaliland, according to Mr. Lort Phillips, these Chestnut-winged Starlings "frequent the highest part of the Goolis range, and are always to be found in the neighbourhood of the precipitous cliffs which crown the range, and are in many places quite perpendicular for some hundreds of feet. These cliffs are studded with wind-worn cavities, varying in size from a pigeon-hole to a good-sized cavern. In the former the 'Morios' make their homes, flying in and out after the manner of Jackdaws, and indeed, when seen from above, lying flat at the edge of the cliff, the bird, with his grey head and noisy cry, greatly resembles the familiar 'Jack.' The larger holes are tenanted by Vultures, Hawks, Eagles and Owls, and seem to be a general breeding-place for Northern Somaliland, as from the top of the cliffs the land slopes away southwards hundreds of miles, and forms a vast undulating plain, while towards the north there is a rapid fall of 6,000 feet in the short space of forty miles which intervenes between the Goolis and the sea."

Heuglin met with them in South Kordofan, Fazogl, and nearly as far north as Barka, in pairs or small parties,



Onychognathus blythi, ♂, ♀.

frequenting the rocky highlands, and the high trees and pasture land of the valley, were noisy and cautious, perching on the ground like Magpies. Blanford writes: (*Amydrus rüPELLI*, Geol. and Zool. Abyss. p. 398). "This race abounds around Senafé, and elsewhere in Tigré. I did not notice any *Amydri* in Lasta. As a rule, these birds keep to the highlands, at about from 7,000 to 8,000 feet, but I shot one specimen in May as low as Suru, barely 2,000 feet above the sea. The following measurements are taken from four specimens of each sex: Male, wing 6·5; tail 6·25 to 6·5; bill 1·1 to 1·15; female, wing 6·12 to 6·25; tail 6·25; bill 1·0 to 1·05.

"All the three species of *Amydrus* collected by me appeared to be mainly, if not entirely, frugivorous, living chiefly on the fruits of various kinds of *Ficus*, of *Juniperus procerea*, &c. They also occasionally feed on the ground on seeds. They roost at night amongst rocks in large communities."

The subspecies, *O. ruePELLI*, is no more than a rather large form of *O. morio*, known only from the Abyssinian district of North-east Africa, for there is absolutely no character in the measurements for separating any other race of this species. A fine specimen from Somaliland has both wing and tail 6·1 inches, and among the Transvaal specimens I have found a wing-measurement of 6·2, and the longest wing-measurement I have come across from south of Abyssinia is 6·3 in one of the Ugogo specimens in the British Museum.

Onychognathus blythi (Plate 48).

Amydrus blythi, Hartl. J. f. O. 1859, p. 32 *Somali*; Sharpe, Cat. B. M. xiii. p. 164 (1890); Shelley, B. Afr. I. No. 617 (1896); Grant and Forbes, N. Hist. Sokotra, p. 22 (1933); Neum. J. f. O. 1904, p. 569; Witherby, Ibis, 1905, p. 519 *Somali*.

Onychognathus blythi, Reichen. Vög. Afr. ii. p. 701 (1903).

Amydrus creaghi, Grant & Forbes, Nat. Hist. Sokotra, p. 58 (1903)
Abd-el-Kuri.

Onychognathus creaghi, Reichen. Vög. Afr. iii. p. 837 (1905).

Adult male. Plumage, with the exception of the primaries, glossy violet black with a green shade on the forehead, sides of head, throat and thighs (breast also sometimes shaded with green); primaries cinnamon, scarcely paler below than above, with the small first primary and the ends of the others blackish; the dark end of the first long primary extends over the end third and down half of the outer web. "Iris brown; bill and feet black." Total length 14 inches, culmen 1.0, wing 6.6, tail 7.0, tarsus 1.4. ♂, 10. 2. 98, Dobar (Hawker). "Iris crimson" (Hamerton).

Adult female. Differs in having the entire head and neck uniform pale grey. Wing 6.5. ♀, 10. 2. 98, Dobar (Hawker).

Immature. Similar to the adult male only duller (♂ and ♀, January); but the female gradually replaces the black feathers of the head and neck with grey ones (♀, 8. 2. 98). Sokotra (Grant & Forbes).

Blyth's Chestnut-winged Starling inhabits North-east Africa and the Islands of Sokotra and Abd-el-Kuri.

In "The Natural History of Sokotra and Abd-el-Kuri," pp. 22-24, The Messrs. Ogilvie Grant and H. O. Forbes give the following interesting account of the species: "This handsome Starling was common on all parts of the island visited by us. On the Hadibu Plain it was constantly to be seen in pairs and small flocks, but on the granite mountains surrounding our highest camp, at Adho Dimellus (3,500 ft.), it was perhaps most numerous. During the day-time the birds might be met with in all sorts of places, on the plains and patches of open grass, as well as on the bush-clad hill-sides, but just before sunset they all retired to the neighbouring precipices, and might then be seen far overhead in pairs and flocks on their way to roost. At Jena-agahan, one of our camps in the Aaghier range, small flocks were constantly to be seen just before sunset, circling round above the granite peaks, much after the fashion of the Common Starling, and uttering their shrill, rather discordant cry, as they flew.

“Their food is very varied, consisting of grasshoppers and other insects, as well as fruits of all kinds, especially figs, and the berry of the dragon’s blood tree. Compared with the allied *A. frater*, birds of this species are wild and much more difficult to approach.” They further remark, that when feeding on the ground one of the party keeps a look out from the top of a bush or rock, they also follow the cattle in the pasture or a light on their backs to feed upon the parasites. “The actions of this bird, both on the ground and in trees, are like those of a Blackbird, it does not walk, like the Common Starling, but hops, and when jumping from branch to branch the carriage of the long tail increases the resemblance. The nesting season was apparently over when we reached Sokotra, early in December, for though we saw a number of old birds accompanied by young, none seemed to be nesting. Probably one egg is the full clutch, for we never saw the parent birds with more than one young bird. Several of the latter were secured and an interesting point with regard to their plumage is that the young female has the head and neck black like those of the male parent, the grey plumage of the adult female being subsequently assumed. The call-note of this species *chēe-chēe-chēe*, *chēe*, *whoūp*, uttered loud and quick, is much harsher, and quite different from that of *A. frater*. The female, when suddenly alarmed, emits a curious, harsh ‘sraich,’ not unlike that made by the Jay.” Both this species and *A. frater* are known to the natives of Sokotra as the “Shēlhè.” They have named a specimen of this Starling from Abd-el-Kuri Island, *Amydrus creaghi*.

The species was discovered by Speke in Somaliland. Heuglin met with it only near Berbera, and Mr. Elliot observed it once at Jerato. Mr. Lort Phillips and Mr. Hawker have procured specimens at Berbera in the gardens close to the

Dobar springs. Mr. Lort Phillips also found these Starlings "on the upper ledges of the Goolis, where they were evidently breeding in holès in the face of the cliff." In the British Museum there is a specimen procured by Mr. Gillett at Kaloko. Dr. Donaldson Smith obtained an immature bird in January near Bukar and several adults in the Liban district and I do not trace it further westward.

It ranges along the Red Sea to as far north as the Senafé Valley where it has been obtained by Blanford, who writes: "*Amydrus blythi* abounds around Mayen at an elevation of from 3,000 to 4,000 feet in the pass below Senafé. In January and February they were frequently met with in flocks, which were often seen flying around the rocks, their red wings flashing conspicuously in the sun. I once found a great roosting-place, where evidently large numbers from all quarters collected at night. It was in a ravine, where, owing to the presence of a band of hard rock, the water-course made a sudden descent, and here even in the dryest season a very small quantity of water trickled over the rocks. As in many similar places where water trickled down the face of a steep cliff, a large deposit of calcareous tufa had taken place, and, probably owing to the subsequent wearing action of the torrent, which in rainy weather rushes down the ravine, had been so excavated as to form an overhanging cliff, beneath which these birds took up their abode at nightfall in great numbers, clinging to the rock. The water also attracted numerous *Cynocephalus hamadryas* Monkeys, and a few Pigeons and other birds; the principal inhabitants, however, being the Monkeys and *Amydri*, and the noise produced by the two was deafening, especially whenever a shot was fired."

His specimens in the British Museum, from the Senafé Pass are remarkably large, as the following measurements

will show. ♂, 18. 2. 68, *Magen* (Blanford). Total length 15.0 inches, culmen 1.2, wing 7.1, tail 8.0, tarsus 1.5.

Onychognathus tenuirostris.

Lamproternis tenuirostris, Rüpp. N. Wirb. Vög. p. 26, pl. 10, fig. 1 (1835)
Abyssinia.

Cinnamopterus tenuirostris, Sharpe, Cat. B. M. xiii. p. 166 (1890);
Shelley, B. Afr. I. No. 623 (1896); Reichen. Vög. Afr. ii. p. 703
(1903); Grant, Ibis, 1904, p. 255 *Abyssinia*; Erlang. J. f. O. 1905,
p. 710.

Amydrus tenuirostris, Neum. J. f. O. 1904, p. 569; 1905, p. 241
N. E. Africa.

Oligomydus sturninus, Heugl. J. f. O. 1863, p. 15 *Wollo Gallaland*.

Amydries canolimbatus, Reichen. Orn. Monatsb. 1900, p. 99 *Tandalla*.

Adult male. Plumage, with the exception of the primaries, glossy blue-black; neck, body, scapulars and lesser wing-coverts more violet, head, portion of wings and the tail slightly greener; primaries cinnamon with the outer one and ends of the others blackish; the cinnamon scarcely paler beneath than above. Iris reddish brown; bill and feet black. Total length 13.4 inches, culmen 1.0, wing 5.9, tail 6.8, tarsus 1.3. ♂, 30. 8. 99, Mount Kenia (Makinder).

Adult female. Duller; all the feathers, excepting those of the tail and the quill, with ashy white edges, smallest and inclining to spots on the head, and to complete edges, especially defined on the lower back, and, broadest on the breast, thighs and under tail-coverts; wing 5.6, tail 5.9. ♀, 30. 8. 99, Mount Kenia (Makinder).

Immature. Like the male but duller and of a more sooty shade, especially on the under parts. Culmen 0.85, wing 5.5, tail 5.2, tarsus 1.2. ♀, 10. 10. 01, Harar (Zaphiro).

The Slender-billed Chestnut-winged Starling ranges from Lake Nyasa into Bogosland, and westward to the Ruwenzori Mountains.

Dr. Fülleborn has procured a hen of this species between Tandalla and Bulongwa, due north of Lake Nyasa, in about 9° S. lat., which is the type of *Amydrus canolimbatus*, Reichen., and is the only record of the occurrence of this Starling in German East Africa.

On Mount Kenia, just south of the Equator, the Mackinder Expedition obtained the specimens I have above described, and remarked: "Although fairly common among the crags at the head of the Höhnel Valley, this species was not observed in any other locality" (P. Z. S. 1900, p. 602).

Dr. Sharpe adds: "There is another specimen in Mr. Jackson's collection from Ruwenzori. It should be noticed that both the female birds have the grey edges to the feathers which I formerly considered to be characteristic of the young of this species." It would appear from the immature specimen I have described, labelled female, by Mr. Zaphiro, that the young of both sexes resemble the male and not the female; if so the latter would not acquire its distinctive colouring before the first moult. This is a question for future ornithologists to decide, for as yet the evidence is insufficient; but we know that in *O. blythi* the first plume of the female resembles that of the male.

Although fairly abundant in Shoa and Central Abyssinia, it has not been procured from further east than Harar, and is, as Mr. Ogilvie Grant has remarked, "a rare and local species." To the north of Shoa, Mr. Pease has procured specimens at Dembrateha and Ahouillet, Mr. Jesse at Aidigrat and Heuglin met with it in the highlands between Wogara and Semien, darting, with a noisy flight, from bush to bush along the sides of the precipices. The type was discovered by Rüppell in Abyssinia.

Onychognathus albirostris.

Ptilonorhynchus (Kitta), *albirostris*, Rüpp. N. Wirb. Vög. p. 22, pl. 9 (1835) *Abyssinia*.

Pilorhinus albirostris, Sharpe, Cat. B. M. xiii. p. 167 (1890); Shelley, B. Afr. I. No. 624 (1896); Reichen. Vög. Afr. ii. p. 704 (1903); Neum. J. f. O. 1904, p. 568; 1905, p. 242; Erlang. t. c. 1905, p. 710 *Arussi Galla*.

Adult male. Plumage, with the exception of the primaries, glossy blue black with a violet shade on the head, neck, back, scapulars, lesser wing-coverts and chest; remaining portions slightly greener; primaries cinnamon slightly paler below than above, but, with the first primary and fairly broad end to the other, blackish; the cinnamon extends beyond the end of the secondaries. "Iris red; bill white; feet black." Total length 11.4 inches, culmen 0.9, wing 6.4, tail 4.7, tarsus 1.3. ♂, 1. 7. 99, Let Marefia (Antinori).

Adult female. Differs in having the entire head and neck uniform grey. Total length 9.5 inches, culmen 0.9, wing 6.0, tail 4.5, tarsus 1.25. ♀, 26. 5. 68, Senafé (Blanford).

Immature male. Differs from the adult in having the head and neck mottled with grey. ♂, Abyssinia (Leadbetter).

The White-billed Chestnut-winged Starling inhabits North-east Africa from 7° to 17° N. lat.

The most southern range known for the species is Ginir, in Arussi Gallaland, where Erlanger procured three specimens, and it is abundant in Shoa, especially in the forest near Ankober, according to Dr. Ragazzi. Rüppell, who discovered the species, remarks that it is generally distributed over Abyssinia in small flocks, and has a loud, monotonous note which is heard only during flight. The note as well as the habits, Heuglin compares to those of our Jackdaw, and remarks that they frequent cliffs, ruins and high trees, and he met with them in the highlands between 5,500 and 10,000 feet. Blanford (Geol. and Zool. Abyss. p. 401) writes: "Precisely like *A. rüppelli*, the present bird is social, lives on fruits, and roosts in large communities among rocks. It was only seen in the highlands, and was particularly common in the neighbourhood of Senafé." It has been recorded from as far west as the White Nile, by Antinori.

Onychognathus salvadorii.

Galeopsar salvadorii, Sharpe, *Ibis*, 1891, p. 241, pl. 4 *Suk*; Shelley, *B. Afr.* I. No. 625 (1896); Reichen. *Vög. Afr.* ii. p. 705 (1903); Neum. *J. f. O.* 1904, p. 568; Erlanger, *J. f. O.* 1905, p. 710 *Arussi Galla*.

Adult (type). Plumage, with the exception of the primaries, glossy blue black, of a more violet shade on the head, neck, back, scapulars and lesser wing-coverts; remainder of wing, tail, breast, thighs and under tail-coverts greener; primaries cinnamon with the ends of the feathers and the whole of the first small primary dull black; the cinnamon colour extends well beyond the secondaries and is very slightly paler beneath than above. "Iris crimson; bill and feet black." Total length 15·3 inches, culmen 0·8, wing 6·2, tail 9·0, tarsus 1·3. ♀ 15. 1. 90, Turquel (Jackson).

Salvadori's Chestnut-winged Starling inhabits the country to the north-east of Victoria Nyanza.

The species, so well marked by the knob formed of bristly feathers on the front half of the crown, was discovered by Mr. Jackson in the Suk country, January 15, 1890, when, according to his diary, he camped at Kirakow, on the Suan River (1° 45' N. lat., 35° 7' E. long.). Mr. Neumann has met with the species in the country between Lake Rudolph and Mount Kenia, and Dr. Donaldson Smith has procured two specimens in Western Somaliland, at Stonybrook, near the junction of the Ehrer River with the Shebeli. One of these latter specimens, which, like the type, is labelled female, agrees perfectly with a male specimen in the colouring of the plumage, which has been well illustrated. "*Ibis*," 1891, p. 241, pl. 4.

In Arussi Gallaland, Erlanger met with a few small colonies of these Starlings breeding in the cliffs to the south of Ginir.

Genus IX. PŒOPTERUS.

Bill black, of moderate dimensions; culmen about 0·6 inch and shorter than the tarsus. Wing pointed. Tail graduated, graduation more than the length of the tarsus. Plumage glossed, and differs in adults of the two sexes, very strongly so in the wings, which in adult males have the quills uniform blackish, while in the females and young males a large portion of these feathers is rufous.

	<i>Type.</i>
Pœopterus, Bp. C. R. xxxviii. p. 381	<i>P. lugubris.</i>
Myiopsar, Cab. J. f. O. 1876, p. 93	<i>P. lugubris.</i>
Stilbopsar, Reichen. Orn. Monatsb. 1893, p. 31	<i>P. stuhlmanni.</i>

The genus is confined to Tropical Africa and comprises three known species.

KEY TO THE SPECIES.

- a.* Tail longer than wing, with the feathers more pointed; a blue gloss *lugubris.*
b. Tail shorter than wing, with the feathers less pointed.
*a*¹. With a blue gloss *stuhlmanni.*
*b*¹. With a bronze, and no blue, gloss *kenricki.*

Pœopterus lugubris.

Pœopterus lugubris, Bp. C. R. xxxviii. p. 381 (1851) *Gaboon*; Sharpe, Cat. B. M. iii. p. 281 (1877); id. P. Z. S. 1878, p. 803, pl. 49; Shelley, B. Afr. I. No. 626 (1896); Reichen. Vög. Afr. ii. p. 705 (1903); Neum. J. f. O. 1904, p. 569.

Myiopsar cryptopyrrhus, Cab. J. f. O. 1876, p. 93 *Chinchouxo.*

Adult male. Entire head, neck, body, scapular and lesser wing-coverts glossy steel blue with a slight violet shade; tail black with a glossy greenish blue wash on the outer webs of the feathers; remainder of the wings brownish black with pale ashy brown edges to the greater coverts and secondaries; under wing-coverts black with a slight blue gloss; under surface of quill uniform blackish brown. Iris yellow; bill and feet black. Total length 8·4 inches, culmen 0·6, wing 3·5, tail 4·5, tarsus 0·75, Denkera (Aubinn).

Adult female. Entire head, neck, body, scapulars and lesser wing-coverts grey, slightly darker and more strongly glossed with blue on the upper parts; tail black with a slight greenish gloss on the outer edges of

the feathers; remainder of the wings dusky black, with a large patch of cinnamon on the inner webs of the nine long primaries. Wing 3.3, tail 4.1, Denker (Aubinn).

Immature male. The adult plumage is nearly acquired, but the lower back and the breast, which resemble that of the female, are mottled with steel blue feathers, and the cinnamon has diminished but not disappeared from the two outer long primaries on each side, showing that the colour of these feathers change without being shed, and also that the immature male resembles the female in plumage. ♂, 14. 3. 02, Efulen (G. L. Bates).

The Western Narrow-tailed Starling ranges from the Gold Coast into Angola.

The species has not been recorded from further north or west than Fantee. In the British Museum there are five males and two females from that country, one from Fernando Po, and two from Efulen in Camaroons. The specimen from Fernando Po is an adult male and was shot at Banferberi, March 16, 1904, and is the first specimen recorded from that island. In Camaroons the species has been met with at Efulen (Bates), Bipindi (Lenker), Victoria and Buea (Preuss), and near Itoki; Mr. Sjöstedt found a colony of these birds frequenting an isolated clump of stunted trees, at times fluttering round the fruit with noisy chirps, at other times their loud note might be heard as they rose high up in the air. He also met with pairs breeding singly at Bonge and remarks that they are true Starlings in their habits and breed in holes.

Franquet discovered the species in Gaboon; Falkenstein procured the type of *Myiopsar cryptopyrrhus* at Chinchonxo in Loango, and others have been obtained in Angola at the Kuango River by Mechow.



♂ *Scaptura strubmanni*.
♀ do. " *kenricki*. ♀.

Pœoptera stuhlmanni (Plate 49, fig. 1).

Stilbopsar stuhlmanni, Reichen. Orn. Monatsb. 1893, p. 31 *Albert Nyanza*; Shelley, B. Afr. I. No. 628 (1896); Reichen. Vög. Afr. ii. p. 706 (1903); Neum. J. f. O. 1904, p. 569; 1905, p. 242.
Pœoptera greyi, Jackson, Bull. B. O. C. viii. p. 50 (1899) *Nandi*.

Adult male. Brownish black, with a deep violet blue gloss on the head, neck, entire body, and upper tail-coverts, and a slight wash of that gloss on the edges of the lesser wing-coverts and under wing-coverts, the remainder of the wings and tail being dull black. Iris brown, with an outer ring of yellow; bill and feet black. Total length 7·7 inches, culmen 0·6, wing 4·15, tail 3·5, tarsus 0·85. ♂, 19. 5. 98, Nandi (Jackson).

Adult female. Differs in being paler, with the gloss of a greenish grey shade, and in having a large patch of cinnamon on the wing, almost entirely confined to the basal two-thirds of the inner webs and the shafts of the primaries. Total length 7·7 inches, culmen 0·55, wing 3·95, tail 3·3, tarsus 0·8. ♀, 19. 5. 98, Nandi (Jackson).

Stuhlmann's Narrow-tailed Starling ranges from the northern portion of the Victoria Nyanza district to 7° N. lat.

The type, which is in the Berlin Museum, formed part of Emin and Stuhlmann's collection and was procured by them at Badsua on the Albert Nyanza. The species has been obtained by Sir Harry Johnston on Mount Elgon at 7,000 feet, and a little further east, in the Nandi forest at 6,000 feet, by Mr. Jackson, who writes: "When first seen I mistook a flock of these birds for small Bee-eaters, which they resembled in a remarkable degree, both in flight and in their short, loud, thrilling note. To-day (May 19) I procured four specimens, and, unfortunately, lost two others in dense green undergrowth. Several small flocks were attracted by a little yellow fruit of a tall forest tree in a small clearing. These birds, together with *Zosterops*, Bulbuls, Barbets, and other birds, were either so intent on the fruit or so unaccustomed to the report of a gun (certainly not a loud one, as I

was using E. C. powder) that, until I had fired several shots, they took no notice, but went on feeding. Even when eventually they took alarm, they only flew a short distance to the nearest tree, and came back again almost immediately. The females are easily distinguished from the males when on the wing, by their conspicuous reddish-brown primaries" (*P. greyi*, "Ibis," 1899, p. 592). Further north, in the Malo and Kaffa countries, Mr. Oscar Neumann met with these birds at an elevation of 8,000 to 9,000 feet, frequenting, in company with *Cinnyricinclus sharpei*, the thick virgin forest and the tops of the high trees surrounding Anteratsha, the capital of Kaffa. In March and April they were accompanied by their young.

Pœoptera kenricki (Plate 49, fig. 2).

Pœoptera kenricki, Shelley, Bull. B. O. C. III. p. 42 (1894) *Usambara*;
id. B. Afr. i. No. 627 (1896).

Stillbopsar kenricki, Reichen. Vög. Afr. ii. p. 707 (1903), iii. p. 838 (1905);
Neum. J. f. O. 1904, p. 569.

Amydrus ? dubius, Richmond, Auk, 1897, p. 158 *Taveta*.

Adult male. Plumage sooty brown, with a faint purple shade on the wings and a slight bronze gloss, strongest on the head, neck, body, scapulars and lesser wing-coverts. Bill and feet black. Total length 7·5 inches, culmen 0·55, wing 4·0, tail 3·3, tarsus 0·8, Ngiri R. (Kenrick). *Type.*

Female or young. Differs in being paler and less glossy; head, neck and under parts greyish; the nine long primaries with a large portion of their inner webs cinnamon. Total length 7·0 inches, wing 3·9, tail 3·2, tarsus 0·7. Usambara Mountains (Kirk, 1879).

Kenrick's Narrow-tailed Starling ranges in Eastern Africa from the Usambara country to the Kilimanjaro district.

The type was discovered in the mountains of Usambara before 1881, when I referred it to *P. lugubris*, under the impression that it would prove to be an immature specimen

of that species, which was certainly an incorrect conclusion, so I did not give it a name until 1894. In the meantime, Dr. Reichenow, in 1893, described his *Stilbopsar stuhlmanni*, and writes in his Vög. Afr. ii. p. 707: "Possibly *S. kenricki* is only a young specimen of *S. stuhlmanni*." He corrects this determination in his Appendix (1905), and I may add that the known range of *P. kenricki* and *P. stuhlmanni* is as yet distinct.

Genus X. STURNUS.

Bill straight and pointed, as broad as deep at the nostrils, blackish during winter and changing into yellow for the breeding season; nasal apertures exposed, with a distinct overhanging membrane. Wings pointed. Tail short and square, not half as long as the wing. Tarsi, feet and claws brown and of moderate size.

Type.

Sturnus, Linn. S. N. i. p. 290 (1766) *S. vulgaris*.

The genus belongs to the Western Palearctic and Indian regions.

***Sturnus vulgaris*.**

Sturnus vulgaris, Linn. S. N. i. p. 290 (1766) *Europe*; Dresser, B. Eur. iv. p. 405, pls. 246, 247 (1874); Sharpe, Cat. B. M. xiii. p. 27 (1890); W. L. Sclater, Ann. S. Afr. Mus. iii. pp. 307, 366 (1905).

Adult. Feathers of the head and neck lanceolate; general plumage glossy black, with violet and green reflections; feathers of head, neck and body more or less distinctly tipped with buff; greater series of wing-coverts, quill and tail nearly uniform brown, with paler edges to the feathers. Iris brown; bill brown, excepting in males during the breeding season, when it is pale yellow; feet brown. Total length 7·5 inches, culmen 1·1, wing 5·0, tail 2·75, tarsus 1·2.

Young. General plumage dull brown, with some white towards the chin and broad whitish edges to the feathers of the under parts. Iris, bill and feet brown.

The Common Starling is a native of Europe, ranging in winter into North Africa, Syria and Persia, and has been introduced into South Africa.

The claims for this species to be entered in my present work are the same as those of *Acridotheres tristis* and *Mainatus religiosus* and others, such as the Java Sparrow, which have been introduced, and thrive in a wild state in their adopted countries.

Mr. W. L. Sclater writes: "The English Starling has, during the last few years, completely established itself in Cape Town and the various suburbs extending round the slopes of Table Mountain; it has also been seen as far as Stellenbosch about twenty-five miles inland. It is said that a few pairs were imported and turned out in the Groote Schur grounds at Rondebosch some years ago (I believe in 1898), together with several other species of English birds, by Mr. Cecil Rhodes. The Starling, however, is the only one which has thoroughly established itself and spreads any distance from its original starting-point. It nests freely about Cape Town and the suburbs, choosing somewhat similar sites to those made use of in England, such as attics, chimneys, watershoots, and other convenient places about dwelling-houses."

Genus XI. CREATOPHORA.

Bill very like that of our Common Starling; nasal aperture exposed, elongated and with an overhanging membrane. Head sometimes bare, with two erect wattles on the forehead and crown, as well as two large ones hanging down from the throat, otherwise the head and neck is feathered and even, with a bare tract down each side of the throat. Wing pointed, first primary shorter than the primary coverts. Tail shorter than the wing and square, with the centre feathers slightly the shortest.

Type.

Dilophus (non Meigen. 1804, <i>Dipt.</i>) Vieill. Analyse, p.	
34 (1816).	<i>C. carunculatus.</i>
Creatophora, Less. Descr. Mamm. & Ois. p. 308 (1847).	<i>C. carunculatus.</i>
Perissornis, Oberholser, Proc. Philad. Acad. 1899, p.	
216	<i>C. carunculatus.</i>

The genus is represented by a single species, which is confined to the Ethiopian Region and Arabia.

Creatophora carunculata.

- Gracula carunculata*, Gm. S. N. i. p. 399 (1788) *Cape*.
Creatophora carunculata, Less. Descr. Mamm. et Ois. p. 308 (1847);
 Newton, Dict. Birds, Pt. ii. p. 379 (1893); Sharpe, *Ibis*, 1904, p. 365
Cape Col.
Dilophus carunculatus, Sharpe, Cat. B. M. xiii. p. 61 (1890); Shelley
 B. Afr. I. No. 630 (1896); Whitehead, *Ibis*, 1903, p. 223 *Orange R.*;
 Grant, *Ibis*, 1904, p. 255 *S. Abyssinia*; Clarke, *t. c.* p. 525 *Bloem-*
fontein; Grant, *Ibis*, 1905, pp. 201, 203 *Uganda*.
Perissornis carunculatus, Reichen. Vög. Afr. iii. p. 670 (1904); Neum.
 J. f. O. 1905, p. 237 *Abassi Lake*; Erlanger, *t. c.* p. 705 *N. E. Africa*.
Sturnus gallinaceus, Lath. Ind. Orn. i. p. 324 (1890) *Cape*.
Gracula larvata, Shaw. Gen. Zool. vii. p. 468, pl. 57 (1809) *S. Africa*.
 Le Porte-Lambeaux, Levaill. Ois. Afr. ii. p. 178, pls. 93, 94 (1799).

Adult female. Upper parts pale ashy brown with the rump cream-white; wing and tail dark brown with a greenish bronze gloss, and some white, generally present, on the outer greater coverts; under wing-coverts with broad white edges; under parts paler than the back and gradually fading into white on the abdomen and under tail-coverts. "Bare skin near the eye pale greenish yellow; bare skin on sides of chin dark ash colour; iris hazel; bill pale with the ridge dusky; tarsi and feet dusky brown." Total length 7·5 inches, culmen 0·8, wing 4·6, tail 2·6, tarsus 1·15. ♀, 20. 7. 78, Rustenburg (T. Ayres).

Adult male in ordinary plumage. Differs from the female only in the colouring inclining more to sandy buff, and the wings and tail being blacker and more strongly glossed with green. "Iris pale brown; bill pale pink; tarsi and feet light dusk brown; bare skin round the eye pale ash colour, shading into bright greenish yellow behind and under the eye; bare skin on sides of chin dark ash; wing 4·8. ♂, 4. 9. 78, Potchefstroom (T. Ayres).

Male in full breeding plumage. Differs from the last in having the upper half of the throat and the head, with the exception of the ear-coverts and nape, bare with erect wattles on the forehead, crown and centre of throat. "Iris hazel; bill white tinted with lilac; tarsi and feet dark brownish flesh-colour; bare skin on head deep black in front; bright yellow behind, and round the eye a small bluish patch." ♂, 18. 11. 74, Tati (Oates).

The Wattled Starling ranges over the open districts of Africa generally, southward from Angola and Abyssinia and extends eastward into Arabia.

The species has been procured at Malandje, in Angola,

by both Schütt and Mechow. Sala met with it at Galungo-alto, and Monteiro at Equemina Bay near the town of Benguela, "in a newly dug field, evidently seeking for worms or grubs."

Anchieta found these Starlings fairly abundant at the Rio Coroca as well as in the Humbe district and were known to the natives as the "Virindongo." Kellen procured specimens at Gambos, Humpata and at the Okavango River, and Andersson writes: "These singular birds appear in Damara and Great Namaqualand about the beginning of the rainy season, and mostly leave again upon the return of the dry; but I suspect that a few pairs occasionally remain and breed, as young birds are to be found throughout the year. This species is always in flocks, often consisting of a hundred or more individuals, which greatly remind me of a flock of European Starlings, and are rather shy and difficult to approach; they feed on worms, berries and insects, chiefly small coleoptera."

Layard writes: "They breed in companies. We found them in September, 1869, at the Berg River; their nests filled many small bushes; they were cup-shaped, but built close together, and added to from time to time till they became almost a dense mass which filled the bush," and he received the following communication from Mr. Barber: "Some years ago, when large flights of locusts laid their eggs in the valleys of the 'Konappe' and 'Chaka' Rivers, they were followed as usual by the small locust birds.

"It was spring-time, and these birds filled the thorn trees (*Acacia horrida*) with their nests; and some of the trees were so over-burdened with nests, which were packed about, and upon each other, that with the additional weight which a stormy wet day supplied, the trees gave way and fell to the earth, and an awful smash of eggs and young birds bore witness to the melancholy result."

“On another occasion these birds, for some reason or other, were too late in commencing their nests, and it so happened that before their young were fully fledged the locusts began to leave the neighbourhood, most of the ‘voet gangers’ had thrown off their working jackets and resumed the ‘imago’ state. It was easy work for the birds to follow them at first and bring back a sufficient supply of food to their nests, but as the locusts day by day winged their flight towards the interior, they found the task a difficult one; still for some days they succeeded in keeping their young alive, but the winged swarms of locusts travelled so fast that the birds were beaten in this great struggle for life, and were compelled to abandon their nests, leaving the half fledged ones to their sad fate; and to save themselves from a similar one, flew after the locust swarms that were leaving the colony. It seems unnatural for any animal to desert its young, and I have frequently seen birds risk their lives for the sake of their nests, but in the above-mentioned case, no blame nor want of natural affection could be attached to the Locust Birds—they did all they possibly could under the circumstances—for, excepting the locust swarms, no other source remained by which so great a multitude could be supplied with food.” In a note Dr. Sharpe writes: “We have heard of a similar incident occurring with the other Locust Bird, *Glareola nordmanni*, when a whole hill-side covered with nests containing young birds was deserted.”

The present species, Stark remarks, “is of gipsy-like habits, migrating here and there without much regard to season, and frequently appearing suddenly in a district for several days or weeks in flocks numbering tens of thousands, to disappear as suddenly, often for many years. These Starlings are in fact so largely dependent for food upon the

migrating swarms of locusts, that they are compelled to remain in touch with these insects for the greater portion of the year. A few stray individuals occasionally remain for a time after the larger flocks have taken their departure, and find an asylum in the ranks of the resident Red-winged or Brown and White Starlings, with both of which species they are on amicable terms."

"When pursuing a flight of mature locusts these Starlings perform various extraordinary and beautiful aerial evolutions with the object of intercepting and surrounding a portion of a swarm, and in doing this their movements closely resemble those of another locust-destroying Starling, the beautiful Rose-coloured Pastor of Eastern Europe and Asia. Individually the two species are very different, collectively and under similar conditions their actions are quite similar. Starting in a dense 'ball-like' mass, they suddenly open out into a fan-shaped formation, then assume a semi-circular arrangement, and finally end by forming a hollow cylinder, in which a portion of the locusts are enclosed; as the imprisoned insects are destroyed, the Starlings gradually fill up the hollow of the cylinder until they again assume their 'ball' formation and proceed to follow the remaining locusts. At other times the Starlings station themselves on the tops of bushes and trees, from which they dart on the flying insects like Flycatchers. When feeding on the ground, on the young locusts, they advance in long lines, three or four deep, the rearmost birds constantly jumping over those in front of them, like English Starlings. When locusts are not to be had the Wattled Starling will eat almost any variety of insect food, but seem to prefer grasshoppers and small beetles: occasionally they feed upon berries and seeds.

"In Cape Colony the Locust Birds usually breed in very large colonies, in localities in which the locusts have

deposited their eggs. For hundreds of yards every thorny bush is packed full of cup-shaped nests, even the spaces between the nests being often filled up with sticks or rubbish, through which narrow passages are left for the ingress and egress of the birds. Many Starlings that can find no room in the bushes, build on the ground, or under stones, or in holes, and these unfortunates, together with their eggs or young, ultimately become the victims of the smaller carnivorous mammals or of snakes. It frequently happens also that either the young locusts are hatched in insufficient numbers or that they migrate before the young Starlings are fledged. In either case large numbers of birds perish of hunger, the majority of the old birds and the more advanced young following the locusts. Four or five eggs are laid, usually in August or September; these are of a very pale blue colour, sometimes with a few specks of black at the larger end, but usually unspotted. They are rather pyriform in shape, and average 1.20×0.90 ."

Dr. Reichenow (Vög. Afr. ii. pp. 670, 671) gives a full list of the places from whence specimens have been recorded, so it will suffice for me to remark that these Starlings are very abundant and generally distributed throughout South Africa and the eastern half of the continent to as far north as Shoa, where Antinori found them in large flocks throughout the year and breeding in the valley of Daimbi in May. In Angola, the Nile district and westward, it is apparently not so abundant, and is probably a "straggler" only in Arabia, where on one occasion Major Yerbury met with a party of five or six near Aden. Heuglin found it along the Blue and White Nile, in Abyssinia and Kordofan only during the wet season, and according to Emin it was not very common at Lado.

In Somaliland Mr. Elliot met with these Starlings in

flocks on two occasions, at Gelalo in the middle of Togo Plain and on the southern edge of the Haud, and writes: "The individuals busied themselves upon the ground apparently searching for seeds and insects, probably chiefly the latter, and on being approached flew rapidly for a short distance and alighted on the ground or on one of the thorn bushes near our tents. The wattles were very conspicuous at all times, the two pendant from the throat flapping about as the birds moved their heads, while the two on top of the crown stood upright."

These naked-headed specimens are of extremely rare occurrence and the reason for it has never been explained; we only know that it is not a mere sign of breeding plumage, for in the great masses of nesting birds it has seldom been met with, and we can only suppose it to be a sign of great age. It would be an interesting subject for the aviculturist to determine, if all the males, and males only, are subject to this change, and at what period of their life it takes place.

Genus XII. **ACRIDOTHERES.**

Bill yellow and somewhat Thrush-like in form, with the nostrils exposed; some bare skin next to the eyes, and the feathers of the crown lanceolate. Wing pointed and longer than the tail; tail nearly square, tarsi, feet and claws yellow.

Type.

Acridotheres, Vieill. Analyse, p. 42 (1816) *A. tristis.*

This is an Eastern genus of which one species, *A. tristis*, has become acclimatised on many of the islands of the Indian Ocean.

Acridotheres tristis.

Paridisea tristis, Linn. S. N. i. p. 167 (1766) *Philippines.*

Acridotheres tristis, Sharpe, Cat B. M. xiii. p. 80 (1890); Shelley, B.

Afr. I. No. 629 (1896).

Gracula gryllivora, Daud. Traité, p. 285 (1800).

Maina tristoides, Hodgs. J. A. S. Bengal, v. p. 771 (1836).

Pastor tristoides, id. Icom. incl. in Brit. Mus. pl. 272, figs. 1, 2.

Adults. The narrow pointed feathers of the forehead and crown black glossed with green; cheeks, ear-coverts, upper neck and entire throat dusky greenish black; remainder of neck, back, scapular and upper tail-coverts vinous brown; wing more bronzy brown shading into black on the primaries, and with the bases of the latter, the primary coverts and the under wing-coverts white, forming a large patch on the wing both above and beneath; tail greenish black with white ends to the feathers, broadest on the outer ones; breast and thighs vinous brown, with the centre of abdomen and the under tail-coverts white; bare skin behind and under the eyes yellow. Iris pale brown; bill, tarsi, feet and claws yellow. Total length 9.3 inches, culmen 0.9, wing 5.4 and 5.1, tail 3.3, tarsus 1.45. ♂, ♀, 24. 12. 73, Pahpoon (W. Davison).

The Common Myna is a native of Southern Asia, and has been introduced into many islands of the Pacific Ocean, including the Seychelles, Madagascar, Réunion, Mauritius and Rodriguez.

Regarding its occurrence in the Seychelles Archipelago, Sir E. Newton wrote (*Ibis*, 1867, p. 342): "The commonest bird in Mahé is the 'Martin' (*A. tristis*), introduced from Mauritius, and now nearly as abundant as it is there. It is said not to thrive on all the islands." He also mentions (*Ibis*, 1863, p. 349) seeing pairs of this species in Madagascar feeding amongst herds of cattle, and were known to the natives as the "Martine." Mr. Bewsher has collected specimens for me, on Madagascar and Mauritius, which are now in the British Museum, where there are also four others from Réunion, and one from Rodriguez. With regard to its habits, Mr. E. W. Oates writes (*Faun. Brit. Ind.* i. p. 538): "Breeds from March to August, constructing its nest in houses or in holes of trees. The nest is an accumulation of straw, feathers, and other materials, either without shape, or slightly cup-shaped. At times this Myna constructs a nest in the branch of a tree. The eggs, frequently five in number, measure

about 1·19 × 0·86," and are pale blue, like those of our English Starling.

Genus XIII. MAINATUS.

Bill, and a bare lappet on each side of the crown, yellow; nasal aperture exposed, with a membrane overhanging the front part. Wings pointed. Tail short and square, scarcely more than half the length of the wing. Tarsi and feet yellow.

Type.

- Mainatus, Briss. Orn. ii. p. 305 (1760); Rafin, Analyse,
 p. 68 (1815) *M. religiosus*.
 Gracula, Linn. S. N. i. p. 164 (1766) *M. religiosus*.
 Eulabes, Cuv. Règne An. i. p. 401 (1817) *M. intermedius*.
 Maina, Hodgs. J. A. S. Beng. v. p. 771 (1836) *M. intermedius*.

The genus belongs to the Indo-Malayan Region, and one species, *M. religiosus*, has been introduced into the Island of St. Helena.

Mainatus religiosus.

- Gracula religiosa, Linn. S. N. i. p. 164 (1766) *Asia*; Melliss, Ibis, 1870,
 p. 101 *St. Helena*.
 Mainatus religiosus, Sharp, Cat. B. M. xiii. p. 99 (1890).

Adult. General plumage glossy greenish black, with a purple shade on the crown, hind neck, mantle and chest; primary-coverts and the greater part of the quills black, the latter with a white patch, formed by a portion of the inner web of the first long primary, of both webs of the next four quills, and outer web only of the seventh being white. "Bill orange yellow; tarsi and feet citron yellow; lappets and cheek-spot rich yellow, the latter tinged with blue at the upper edge; iris brown, the outer edge white, darkly mottled" (W. V. Legge). Total length 9·5 inches, culmen 1·05, wing 5·6, tail 2·6, tarsus 1·15. ♂, Ceylon.

The Common Grackle is a native of India and Ceylon, and has been introduced into St. Helena.

With regard to its occurrence on St. Helena, Mr. J. C. Melliss, in 1870, writes: "This bird was introduced in the year 1829 and has not multiplied to any extent: but a few

are still to be found inhabiting the Peepul trees (*Ficus terebrata*) in Jamestown."

I am not aware of any other mention of the species from the Ethiopian Region.

Genus XIV. FREGILUPUS.

Bill yellow, long, culmen 1·6 inches, slender and much curved; nasal aperture rounded and situated in the front of the nasal-groove. Head with a crest of narrow long feathers of loose structure; a patch of bare skin behind the eyes. Wing with the fourth and fifth primaries the longest. Tail square and shorter than the wing. Tarsi, feet and claws yellow.

Type.

Fregilupus, Less. *Traité*, p. 323 (1831) *F. varius*.

Lophopsarus, Sunde. *Av. Meth. Tent.* p. 40 (1872) : . . . *F. varius*.

The genus is represented by one species, now extinct, which inhabited the Island of Réunion.

Fregilupus varius.

Upupa varia, Bodd. *Tabl. Pl. Eul.* p. 43 (1783) *Réunion*.

Fregilupus varius, Sharpe, *Cat. B. M.* xiii. p. 194 (1890); Shelley, *B. Afr. I.* No. 631 (1896).

Upupa capensis, Gm. *S. N. i.* p. 466 (1788).

Upupa madagascariensis, Shaw, *Gen. Zool.* viii. (1) p. 140 (1812).

Coracias cristata, Vieill. *N. D.* viii. p. 3 (1817).

Pastor upupa, Wagler, *Syst. Av. Pastor*, sp. 13 (1827).

Fregilupus borbonicus, Vinson, *Bull. Soc. Acclim.* 1868, p. 627.

Adult. Head and neck white, with the elongated crest of disintegrated feathers, and the back of neck of a pale ashy shade; back brown; wing and tail slightly darker brown and more glossy; end half of primary-coverts white, like the under wing-coverts, and edge of bend of wing; under surface of quills and tail uniform brown, with whitish shafts to the feathers; breast white, with the thighs and under tail-coverts brown. Bill, tarsi, feet and claws yellow; a dark bare patch behind the eye. Total length 12·5 inches, culmen 1·6, wing 6·5, tail 5·0, tarsus 1·7, crest 1·3, Réunion (Riécour).

The Crested Yellow-billed Starling inhabited the Island of Réunion.

The species is no doubt now extinct, no specimen having

been received since 1844. The specimen I have described is in the British Museum, and there are both adult and young birds in the Paris Museum.

Genus XV. NECROPSAR.

As the type of the genus is known only by a few bones, I have taken the following characters from *M. leguati*.

Structure and proportions of the bill and legs vary similar to that of *Hartlaubius*, with a slight notch on the upper mandible close to the tip; but the wings are totally different. Primaries five and six equal, and the longest 1=1.52 inches; 2=2.60; 3=3.12; 4=4.25; 5=4.36; secondaries fall short of tip of wing by 0.52, tarsus 1.25, culmen 1.3.

Type.

Necropsar, Selater, Phil. Trans. clxviii. p. 427 (1879) . *M. rodericanus*.

The genus was founded upon a few bones of an extinct bird obtained on Rodriguez, one of the most eastern islands of the Madagascar subregion, and was named *M. rodericanus* (Günther and E. Newton, Phil. Trans. clxviii. p. 427, pl. 42, figs. A—G (1879); Sharpe, Cat. B. M. xiii. p. 195).

The second species, *M. leguati*, is known by a single skin, which is now in the Liverpool Museum, and is presumed to have been a native of the Isle de Mât, a little barren island off the southern coast of Rodriguez. It passed into the Derby collection in 1850.

Necropsar leguati.

Necropsar leguati, Forbes, Bull. Liverpool Mus. i. p. 34, pl. 1 (1898)
Madagascar (Verr.).

General plumage pure white, with a rufous shade on the quills and tail. Bill, tarsi, feet and claws, yellow. Total length 9 inches, culmen 1.3, wing 4.35, tail 2.9, tarsus 1.25.

Leguat's White Starling probably inhabited the Isle de Mât. The type is now in the Liverpool Museum, and has been carefully described and figured by Dr. H. O. Forbes, who believes it to be the White-bird or Egg-eating Starling of the Islet de Mât, and observes: "In one of the appendices to the second volume of Captain Oliver's edition of *The Voyage of François Leguat*, where under the heading

Relation de l'Île Rodrigue, there occurs the following (translated) paragraph on p. 335: 'A little bird is found, which is not very common, for it is not found on the mainland. One sees it on the *Islet au Mât*, which is to the south of the main island, and I believe it keeps to that islet on account of the birds of prey which are on the mainland, as also to feed with more facility on the eggs of the fishing birds which breed there, for they feed on nothing else but eggs, or some turtles dead with hunger, which they well know how to tear out of their shells. These birds are a little larger than a Blackbird, and have white plumage, part of wings and tail black, the beak yellow, as well as the feet, and make a wonderful warbling. I say a warbling, since they have many and altogether different notes. We brought up some with cooked meat, cut up very small, which they eat in preference to seeds.' "

Francois Leguat was on the *Islet de Mât* in about 1830, and Verreaux visited Madagascar in 1832, so it appears to me quite as probable that the type was one of Leguat's specimens, which he reared on cooked meat, as that it was ever a native of the Island of Madagascar.

Family III. CORVIDÆ.

Bill with a notch near the tip of the upper mandible; nostrils covered with strong bristles unless the front of the head is bare. Wings long and pointed; first primary scarcely extending beyond the primary-coverts. Tail variable, generally square or rounded, and shorter than the wing when it consists of twelve feathers, and longer and graduated when it is composed of only ten feathers. Tarsi, feet and claws fairly strong.

The young are similar in plumage to the adults, but duller. They are omnivorous, and often gregarious. The nests are cup-shaped, placed among the boughs of trees, on rocks or in holes. The eggs, generally five in a nest, are spotted, and usually have a bluish ground colour.

The family includes some two hundred species, and is distributed over the whole world; but only eleven of the species occur in the Ethiopian Region.

KEY TO THE GENERA.

- a.* Tail much shorter than the wing; head feathered.
*a*¹. Bill stout; tarsi and feet black.
*a*². Bill very deep, its depth being more than the length of the outer toe *Corvultur.*
*b*². Bill less deep, and entirely black *Corvus.*
*b*¹. Bill slender; tarsi and feet red *Pyrrhocorax.*
b. Tail longer than the wing or with the head bare.
*c*¹. Head bare; tail rounded, of twelve feathers *Picathartes.*
*d*¹. Head feathered; tail graduated, of ten feathers *Cryptorhina.*

Genus I. CORVULTUR.

Bill black with the end whitish, extremely strong and deep; culmen curved and not shorter than the tarsus; nostrils covered with stout bristles. Wing pointed and about twice the length of the tail. Tail of twelve feathers and slightly rounded. Tarsi and feet black and strong.

General plumage black or dark brown, with some white on the hind neck or crop.

Type.

- Corvultur, Less. *Traité*, p. 327 (1831) *C. albicollis.*
 Archicorax, Glog. *Handb.* p. 274 (1842) *C. albicollis.*

The genus is confined to Tropical and South Africa and comprises two species.

Corvultur albicollis.

- Corvus albicollis, Lath. *Ind. Orn.* i. p. 151 (1790) *Africa.*
 Corvultur albicollis, Sharpe, *Cat. B. M.* iii. p. 24 (1877); Shelley, *B. Afr. I.* No. 632 (1896); Johnston, *Brit. Central Afr.* p. 330 (1897); Reichen. *Vög. Afr.* ii. p. 640 (1903); Shortridge, *Ibis*, 1904, p. 174 *Pondoland*; Sharpe, *t. c.*, p. 367 *Cape Col.*; Sparrow, *Journ. S. Afr. O. U.* i. p. 9 (1905); Sclater, *Ibis*, 1905, p. 112 *Matoppo Hills.*
 Corvus cafer, Licht. *Cat. Rer. Nat. Hamb.* p. 9 (1793).
 Corvus vulturinus, Shaw, *Gen. Zool.* vii. p. 343 (1809).
 Corvultur crassirostris (non Rüpp.), Grant, *Ibis*, 1905, p. 201 *S. Uganda.*
 Le Corbivau, Levaill. *Ois. Afr.* ii. p. 5, pl. 50 (1799).

Adult. General plumage glossy black, with a broad white collar round the back of the neck; feathers of the throat more lanceolate than in *C. crassirostris*, and, like the foreneck, dull brown, contrasting with the remainder of the under surface, and is separated from it by a somewhat concealed white band, the feathers of which are either edged with white or pure white, sometimes with dark brown margins. "Iris hazel; bill very dark brown, with the ends of the mandibles whitish horn colour; tarsi and feet brownish black" (Andersson). Total length 18.5 inches, culmen 3.0, wing 16.0, tail 7.1, tarsus 3.0. ♂, Nyika Plateau (Whyte).

Immature. More dusky brown; the white collar at the back of the neck mesially streaked with brown towards the upper back; the white collar on the fore-chest very distinct, but all these feathers are mottle with brown.

The White-necked Corbivau ranges southward from 1° N. lat. over the eastern half of Africa, and into Namaqualand and Cape Colony.

With regard to its western range, Andersson, who calls it the Southern Corbivau, writes: "This Raven-like-looking bird is not, to my knowledge, an inhabitant of Damaraland, but is abundant in the southern portion of Great Namaqualand, where it remains throughout the year. It is generally found singly or in pairs, but sometimes congregates in flocks. It perches indiscriminately on rocks and trees, and may occasionally also be seen perched on the backs of cattle, and many species of wild animals, whose hides it examines in search of parasitic insects; it, however, passes most of its time upon the ground, where it stalks about with ludicrous gravity, uttering at intervals cries not unlike those of a true Raven. Carrion probably constitutes its chief nourishment; but it is said also to attack with ferocity and success the young of the smaller quadrupeds. The flight of this species is powerful; and it occasionally rises to a great height."

Regarding the habits of the species, Stark writes: "Found alike on the coast, among the mountains and on the high veldt, as well as in the Karroo and the sandy wastes of

Namaqualand, the 'Ring-hals' is one of the most widely distributed and best known birds of South Africa. Where not molested it is a bold and fearless species, frequenting the outskirts of towns and villages, and the vicinity of farmhouses, native kraals and outspans, on the look-out for offal and scraps of all kinds. When reared from the nest it makes an extremely tame and amusing, if sometimes mischievous, pet; it has, in fact, all the habits and idiosyncrasies of our European Raven; its ordinary cry, also a harsh croak, is, to my ear, exactly similar to that of the latter bird.

"In the interior the 'Ring-hals' feeds largely on carrion, and is usually the first bird to detect a carcass; on the coast it devours dead fish cast up by the waves, shell-fish of all kinds, the paper-nautilus being a favourite tit-bit, as well as the eggs of penguins and other sea-fowl. At times it kills and eats snakes, lizards, frogs and small tortoises. Nor does it disdain an insect diet, beetles, grasshoppers, locusts and termites are all readily devoured, as well as ticks and bots picked from the hides of cattle. I have sometimes amused myself by watching the bold, yet cautious and gentle manner in which one of these Ravens will approach a reclining ox, and after a preliminary course of soothing caresses, accompanied by a soft 'cawing' note, insert his head into the ear and dexterously extract the ticks. These birds always seem to have a good understanding with the older and more experienced oxen, who will, at a hint from one of them, lie down and place themselves in the most favourable possible position for the extraction of their parasites.

"The 'Ring-hals' is usually a resident in Cape Colony and Natal, and roosts all the year round in or near its nest. This latter is invariably, so far as I have observed, built on a rock or krantz, on a ledge, or in a hole. It is large and firmly constructed of dead sticks and twigs mixed with pieces of turf

and tufts of grass, and is lined with rootlets, wool, hair, grass and various soft materials. The eggs, almost invariably three in number, vary considerably in colour and shape, even in the same nest; they are of some shade of bluish-white, more or less thickly marked with various shades of olive-brown, and are not to be distinguished with certainty from eggs of the European Raven (*Corvus corax*). They average 2.05×1.32 .

“The same nest is occupied year after year. In the neighbourhood of Cape Town the eggs are usually laid in August.”

In Layard's time, according to his notes, it might be “frequently seen about Table Mountain, descending from thence to the shores of the bay in the morning, and returning at night, but always flying at a great height over the town.” I saw it occasionally in Cape Colony, but more frequently in Natal. In Pondoland, Mr. Shortridge called it “a very common resident, generally seen by day in pairs, which gather together in flocks towards the evening and roost among the rocks.” Major Sparrow writes: “The clutch is usually five, not three, eggs. In the Orange River Colony and Natal I have found that it lays in August.”

At the Zambesi Mr. Boyd Alexander found these Ravens in pairs, but by no means common, and remarks: “Unlike *Corvus scapulatus*, it is a resident about the Zambesi, while in whatever locality it was seen the latter species was absent.”

Throughout East Africa, from the Zambesi to the Equator, it is apparently fairly abundant, varying in numbers according to the food supply of the locality. In British Central Africa Sir Harry Johnston informs us that it “is extremely common in all the hill country,” and further remarks: “It carries off all small ducks and chickens within its reach.”

Böhn met with these Ravens on both sides of Lake Tanganyika, and according to Stuhlmann it is known to the

natives of Ungaru as the "Kunguru," which name he found was also applied to the Black-and-white Crow at Zanzibar. Fisher records them as daily visitors to his camps near the mouth of the Pangani River and at Lake Nawasha, and remarks that while they were abundant in the vicinity of the huts of the Masai people, who feed upon meat and rear cattle, they were absent from the seed-growing lands near Nguruman. On Kilimanjaro Mr. H. C. V. Hunter met with them up to 15,000 feet, and Sir Harry Johnston writes: "Inhabits the whole mountain up to the snow, and breeds in August in the most inaccessible rocks." In his book entitled "The Kilimanjaro Expedition," he gives a good figure of this Raven. Close to the Equator Mr. Jackson has procured the species from the Ruwenzori Mountains, at Kampala, in Southern Uganda, on Mount Elgon, and in Nandi, and writes: "This fine Raven is plentiful in Nandi. It is a tame and confiding bird. Although plentiful here in July, it was not present two months ago, and was probably away breeding." In South Uganda it has also been procured by the late Mr. W. G. Doggett at Mulema.

Corvultur crassirostris.

Corvus crassirostris, Rüpp. N. Wirb. Vög. p. 19, pl. 8 (1835-40) *Abyssinia*.
Corvultur crassirostris, Sharpe, Cat. B. M. iii. p. 25 (1877); Shelley,
 B. Afr. I. No. 633 (1896); Reichen. Vög. Afr. ii. p. 641 (1903);
 Grant, Ibis, 1903, p. 255 *S. Abyssinia*; Neum. J. f. O. 1905, p. 231
Shoa.

Corvus albirostris crassirostris, Kleinschmidt, J. f. O. 1906, p. 82.

Adult. Similar to *C. albicollis*, from which it differs in the bill, being double the size; feathers of the throat being more rounded and of a more purplish shade like the entire under parts, there being no trace of a white pectoral band; on the hinder neck a large patch of white covers the sides and back of the nape, and is continued in a narrow line down the neck, and widens out slightly towards the mantle. Iris brown; bill black with the end whitish; feet black. Total length 23·5 inches, culmen 4·0, wing 18·5, tail 10·0, tarsus 3·3. ♂, 21. 4. 68, Takonda (Jesse).

The Thick-billed Corbivau inhabits North-east Africa.

It is very similar to *C. albicollis*, but may be readily distinguished by the entire absence of any white pectoral band, while in habits these Ravens are still more alike, but the present species is the northern form ranging from Somaliland and Lake Rudolf, northward to Kalabat and Taka, and westward to the White Nile and Kordofan.

In Somaliland the species was first met with on the plateau by Speke, and more recently Dr. Donaldson Smith procured a pair at Sheik Husein in September, 1894. Lord Lovat writes: "On the Addis Abbeba plateau it is common, its ordinary food is carrion, but it will eat the fruit of the wild fig with avidity. It has a harsh guttural note." He procured a specimen at Borumeda, and Mr. J. J. Harrison obtained others at Loko and Dincha. In Shoa, Harris procured it at Angolalla, and Antinori records the species as abundant in the mountains of Ankoba, and always to be met with in the company of flocks and herds near Let Marefia. Rüppell, who discovered the species, mentions it as common in the more elevated parts of Abyssinia, but according to Dr. Blanford, it is locally distributed there. Von Heuglin found it feeding in the market places of the native towns, and during the Galla war in 1862, appeared on the battle fields in company with Vultures and Kites, and he records it from as far north as Taka.

In March he found a nest placed in the crevice of a precipitous rock overhanging a waterfall in Wogara, and was entirely hidden by the creepers which grew over it. This Raven, he further remarks, rarely perches on trees, but mostly frequents the open country, where it takes up its position on some rock or stump, and although not shy, is exceedingly cunning, like most of its allies.

In Mr. Ogilvie-Grant's list of the late Mr. W. G. Doggett's

last collection from South Uganda, *C. albicollis* is recorded from Mulema, by error, as *C. crassirostris*.

Genus II. CORVUS.

Bill, tarsi and feet black and strong; culmen curved, and of about the same length as the tarsus; nostrils always covered with thick bristles in all the Ethiopian species. Wing long and pointed, nearly twice the length of the tail. Tail square or rounded, of twelve feathers.

- Corvus, Linn. S. N. (x.), p. 105 (1758); (xii.) i. p. 155
 (1766) (?) *C. corax*.
 Corone, Kaup. Naturl. Syst. p. 99 (1829) *C. corone*.
 Pterocorax, Kaup. J. f. O. 1854, Suppl. p. lv. *C. albus*.
 Heterocorax, Sharpe, Cat. B. M. iii. p. 11 (1877) *C. capensis*.
 Rhinocorax, Sharpe, *t. c.* p. 45 *C. affinis*.

This is the most widely spread genus of the family, and is represented in the Ethiopian Region by five species, three of which are confined to the Ethiopian region.

KEY TO THE SPECIES.

- a.* Nasal-bristles mostly directed upwards *affinis*.
b. Nasal-bristles all set flat over the nostrils; bill less stout.
*a*¹. Bill stouter. Nasal-bristles longer, extending over more than half the distance from the eye to tip of bill.
*a*². Plumage black and white *albus*.
*b*². Plumage blackish, with no white ends to the feathers.
*a*³. Basal portion of all the feathers dusky *umbrinus*.
*b*³. Basal portion of feathers of neck and chest pure white; wing about 14 inches *edithæ*.
*b*¹. Bill more slender. Nasal-bristles shorter *capensis*.

Corvus affinis.

- Corvus affinis*, Rüpp. N. Wirb. Vög. p. 20, pl. 10, fig. 2, *head* (1835-40) *Massawah, Shendi*; Dresser, B. Eur. iv. p. 559, pl. 262, figs. 5, 7 (1894); Shelley, B. Afr. I. No. 635 (1896); Kleinschmidt, J. f. O. 1906, p. 83.
Rhinocorax affinis, Sharpe, Cat. B. M. iii. p. 46 (1877); Reichen. Vög. Afr. ii. p. 639 (1903); iii. p. 836 (1905); Neum. J. f. O. 1905, p. 231 *N. E. Africa*.
Corvus brachyurus, Brehm. J. f. O. 1854, p. 75.

Corvus brachyrhynchos, Brehm. Vogelf. 1855, p. 414.

Corvus brevicaudatus, Mull. J. f. O. 1855, p. 456.

Adult male. Black, with a gloss on the upper parts purple inclining to green on the sides of the head and neck and to deeper black on the breast; nasal-bristles erected towards the forehead. Iris dark brown; bill, tarsi and feet black. Total length 19·5 inches, culmen 2·5, wing 15·7, tail 7·0, tarsus 2·7. ♂, Adigrat (Blanford).

Adult female. Like the male. Culmen 2·55, wing 15·3. ♀, Koom-aylee (Blanford).

The Fan-tailed Raven ranges over North-east Africa generally, from the Equator into Egypt and from the Upper White Nile and Kordofan into Arabia.

The only specimen known to me from the Upper White Nile was procured by Emin at Lado. Mr. Jackson saw two at Elgeyu on the Kamassia range and found the crop in the one he shot there full of egg and young birds; but from Turquel Suk he writes: "Plentiful in Kavamoja, together with *C. scapulatus* and *Corvultur albicollis*."

In Somaliland, according to Speke, it is known to the natives as the "Tukka," and Mr. Lort Phillips writes: "Extremely common in Somaliland from the sea-coast at Berbera to the top of the Ghoolis. It is a persistent and most fearless camp-follower, and is ever on the look-out for scraps from the kitchen. It has a curious habit of walking about with its beak wide open, as if greatly affected by the heat." Dr. Elliot also found them abundant in the country and like *C. edithæ* had a peculiar habit of soaring in the air, when it could easily be recognised by the form of the wings and tail, the secondaries reaching to the end third of the latter and he writes: "A number would rise in the air, generally in the middle of the day when the heat was excessive, and ascending in more or less extensive circles until they became mere specks in the sky or disappeared

altogether. Often during this performance they would join, or be joined by, Vultures, Eagles or Hawks, and then the entire company would sail along, circling as they went, the Crows cutting across the paths of their larger companions in utter disregard of their movements, or without, apparently, fear of a collision. While thus soaring I never noticed any movement of the wing, the birds propelling themselves onward and upward in the same mysterious manner as is observed of the birds of prey, when similarly engaged." This phenomenon of rising without effort, in the air, is, I believe, due, to a great extent, to the bones of birds being hollow and not air-tight, at least when the wings are expanded, and consequently the air becomes more rarefied in their bodies as they ascend, and this being warmed by the peculiarly rapid circulation of the blood in birds, diminishes their weight as they ascend.

The species is equally abundant throughout Shoa, Abyssinia and Arabia, but gradually dwindles in number towards Palestine, Egypt and Kordofan, where it can hardly be regarded as more than a straggler. The types were discovered by Rüppell at Massawah and Shendi, where he records them as abundant. Heuglin writes: "I once saw it at Thebes, afterwards in Southern Nubia, in the oasis of El Kab, at Kordofan, through the whole of Abyssinia up to an altitude of 10,000 to 12,000 feet; on the Danakil and Somali coasts in large flocks in October. In general it is much more gregarious in its habits than *C. umbrinus* and *C. scapulatus*; in the plains, in the mountains, and on the coast it is not unfrequently seen, as also near human habitations. In the highland it appears to breed in colonies in the cliffs, and I saw large flocks circling round like Jackdaws. In the flat country it is rarer, usually occurring in pairs; and it sometimes inhabits the most sterile deserts, frequenting the caravan halting-places and the wells."

Canon Tristram (Ibis, 1866, p. 71), while camping in a deserted part of Palestine, near the ancient fortress of Mesada, first saw a specimen of this Crow in company with a pair of *C. umbrinus* and observed that their flight was very different, *C. affinis* "rather sailed than flew, and the motion of the wings was scarcely perceptible. But more marked than all was the contrast of its outline. Its depth of wing, not only long but broad, till the secondaries appeared to reach almost to the end of the tail, and its short broad tail extending to twice the width of the other, made it appear to cover double the surface its companions did and we at once named it the Fantail Raven. But its note was the richest, most powerful, and most musical that ever Raven uttered. No croak, but a long-sustained cheery cry which decidedly belied its relationship." He further mentions that on reaching the rich oasis of Safieh below Kerak he found the smoking embers of a plundered village, strewn with the corpses of the combatants in a recent battle; but he had to camp there for the night, and writes: "Wheresoever the carcass is, there will the Eagles be gathered together: and the Ravens also; for the sun was not above the horizon when a steady stream of carrion-eaters, who had scented the battle from afar, began to set in from the south. All the Vultures, Kites and Ravens of North Arabia, seemed to be rushing to the banquet. Against them we perpetrated a regular *battue* on their way to their uncleanly feast. We brought down more specimens than we could carry away of the three species of Raven—the Common, the Brown-necked, and four good specimens of our long-sought Fantail, *C. affinis*. The Vultures and Kites sailed too high, out of reach of our shot. Had we not been compelled to leave, we might doubtless have stood among the trees, and with a human bait before us, have continued our warfare throughout

the day. After this we never saw our new friend again, for the south end of the Dead Sea appears his northern limit; nor did we ever meet with *C. umbrinus* north of Jerusalem, not even in the upper part of the Jordan valley. Neither does it ever descend to the coast, where *C. corax* alone is found."

Blanford (Geol. & Zool. Abyss. p. 393) writes: "It abounds everywhere on the highlands and in the subtropical zone, and it descends almost to the sea-level at times. When I first visited Komayli, at the base of the hills, in January, the only Crow to be seen was *C. scapulatus*, but in February, after some rain had fallen, *C. affinis* abounded. In the former instance I first met with this species at about 3,000 feet, near Mayen. In May it had retreated once more to its former range, and the white-breasted Crow alone was to be seen in the tropical region; in ascending to the Bogos country it first appeared on the Lepka at about 12,000 feet above the sea, at Ain."

According to Mr. Oscar Neumann they breed in February.

Corvus albus.

Corvus albus, P. L. S. Müll. S. N. Suppl. p. 85 (1776) *Senegal*;
Kleinschmidt, J. f. O. 1906, p. 90.

Corvus scapulatus, Daud. Traité ii. p. 232 (1800); Sharpe, Cat. B. M. iii. p. 22 (1877); Milne, Edw. & Grand. Hist. Madag. i. p. 444; Atlas ii. pl. 177; iii. pl. 304, fig. 6, *egg* (1879); Shelley, B. Afr. I. No. 634 (1896); Johnston, Brit. Centr. Afr. p. 330 (1897); Reichen. Vög. Afr. ii. p. 634 (1903); Shortridge, Ibis, 1903, p. 174 *Pondoland*; Grant, t. c. p. 255, *Shoa*; Whitehead, Ibis, 1904, p. 223 *Orange R.*; Alexander, t. c. p. 359 *Fernando Po*; Kemp, Ibis, 1905, pp. 214, 247 *Sierra Leone*; A. L. Butler, t. c. p. 326 *Soudan*; Neum. J. f. O. 1905, p. 230 *N. E. Africa*.

Corvus scapularis, Leach in Tuckey. Exped. Zaire, p. 407 (1818).

Corvus scapularis, var. *æthiops*, Hempr. & Ehr. Symb. Phys. fol. z (1828).
" *Corvus dauricus*, Lath." Desj. P. Z. S. 1831, p. 45 *Madagascar*.

Corvus curvirostris, Gould, P. Z. S. 1836, p. 18 *W. Africa*.

Corvus leuconotus, Swains. B. W. Afr. i. p. 133, pl. 5 (1837) *Senegal*.

Corvus phæocephalus, Cab. Mus. Hein. i. p. 232 (1851); Kleinschmidt, J. f. O. 1906, p. 92, pls. 2, 3, 4.

Corvus madagascariensis, Bp. C. R. 1853, p. 829.

Adult. Black and white; the dark parts glossed with purple and steel-blue, less so on the abdomen and under wing-coverts; hind neck, mantle, sides of neck and breast from crop to abdomen pure white. Iris dark brown; bill, tarsi and feet black. Total length 18 inches, culmen 2·3, wing 13·5, tail 7·2, tarsus 2·4. ♂, 29. 7. 66, Otjimbingue (Andersson).

The African Black and White Crow ranges over the whole of Tropical and South Africa and the surrounding islands, including those of the Madagascar subregion.

The range of this species is remarkable as including the whole of the Ethiopian Region, as I define it, and does not occur elsewhere. Throughout its wide range it is apparently very evenly distributed, like the Grey Crow (*Corvus cornix*) is over Great Britain, and much resembles that bird in size, structure and habits. Sir Harry Johnston, with his wide knowledge of Africa, writes: "The Common Black and White Crow is found throughout Africa from the verge of the Sahara to Natal; but I have sometimes thought it was less prevalent in the interior, especially in the forest regions, than on or near the sea-coast, where it is always the bird most commonly met with. It is useful as a scavenger."

Dr. Reichenow, in his *Vögel Afrikas*, gives a long list of the localities where specimens have been procured, which I need not here repeat, and the following native names for the species: Abomey, "Avunsoco-o" (F. Newton); Fernando Po, "Caha" (F. Newton); Benguela, "Xiquamango," "Kelambalambe," "Equala," "Quiquamanga," "Kiquela" (Anchieta); South Africa, "Bonte Kraai" of the Boers (W. L. Sclater); Zambesi, "Kounjouboui" (Foa); Quilimane, "Nyakungu" (Stuhlmann); Zanzibar, "Kurabu" (Fischer); Mombasa, "Kunguru" (Fischer); Taita, "Gursi" (Hildebrandt).

Dr. P. Rendall found a pair breeding in a tree in the Government-house grounds at Bathurst on the Gambia, and Dr. Hartert met with the species nesting on Los Island in April. Dr. Büttikofer writes from Liberia: "This species lives more exclusively than any of its congeners, upon fish, craw-fish and molluscs, which are sometimes left behind in great quantities by the retiring tide, and is, moreover, very fond of palm-nuts. During the palm-oil season, from February to May, as the country people say, its meat must be 'much sweet,' and I was obliged to shoot lots of them for our boys' dinners. Now and then I tasted this 'meat' myself, and although I did not find it exceedingly palatable—especially that of adult birds—I much preferred it to that of Hornbills, Plantain-eaters, Parrots and the like, which is very tough and dry indeed. The nest of the African Rook is built in the crowns of high, inaccessible cotton-trees." At the Niger, Dr. Hartert found a pair breeding in February on the top of a tall Bombax tree.

Andersson, in his "Birds of Damaraland," writes: "It is a regular scavenger, being always present where offal is to be had, and at times resorting in numbers to the bays and inlets of the coast in search of carrion thrown up by the waves; indeed its scent and sight for carrion rivals that of the Vultures, and it is not unfrequently seen about a carcass before even a single Vulture has appeared. It is quite fearless, and will approach a person within a few steps, but if once shot at, displays considerable cunning and caution. From its commonness and sociability its presence is often disregarded; and it avails itself of such opportunities to carry off any pieces of meat and fat which may chance to be within its reach; but such little depredations are amply compensated by its usefulness as a scavenger, and also in ridding domestic as well as wild animals, from the fearfully blood-thirsty ticks

which infest their hides. Some of the notes of this Crow, more especially on a raw misty morning, are absurdly singular and ridiculous. In the heat of the day nearly all the birds of this kind found in a limited locality will join in circling round and round for hours together, sometimes ascending to a very great height." Their nests, he remarks, much resembled those of the Kites.

Stark writes: "Its usual note is a harsh croak, but, like many of the Crows, it has a singular variety of cries, especially in Spring, many of them sounding as if the bird were about to choke or was trying to call with its mouth full of food. The nest, built in September in Cape Colony, is a large basket work of sticks and twigs, lined with wool and other soft material. It is usually placed in a tree, but occasionally on the ledge of a krantz. The eggs, from four to six in number, are bluish-green, spotted and streaked, especially towards the larger end, with different shades of olive-brown. They measure 1.65×1.15 ." The Colonels Butler and Feilden and Captain Reid, write from Natal: "Note extremely guttural and hoarse, only to be compared to that of a frog with a bad cold! Nest in both trees and rocks. Reid took a nest in a 'krantz' close to Newcastle, containing four eggs, on October 9; the old birds, nothing daunted, built another nest on a ledge of rock close by, and in twelve days one of them was sitting on a fresh clutch of eggs. It is worthy of note that the first nest was so compactly built, though to all appearance a most flimsy construction, that it was lifted bodily from its site by the end of one of its component sticks, and that the lining consisted solely of a mass of pieces of ox hide (evidently torn from a carcass), weighing quite two pounds."

T. E. Buckley, during his journey through the Transvaal and Matabeleland, found this species and *Corvultur albicollis*,

equally common, affecting the open plains and neighbourhood of towns in preference to the bush country. From the Zambesi, Sir John Kirk writes: "Particularly common in the Portuguese towns, where it is the common scavenger, and also all up the river." Mr. Boyd Alexander, while on the Zambesi, saw them generally in large flocks, one of which he put up out of a mealie-field, which rose "with a great uproar, and circled in the air after the manner of Rooks." In Nyasaland, according to Sir Harry Johnston, it takes the place of *Corvultur albicollis* in the less elevated districts, and he found this also to be the case when he ascended Kilimanjaro.

In North-east Africa, according to Heuglin, it is to be met with singly or in pairs, excepting during the winter months, when they assemble in small parties. In Sennaar in June, he found one of their nests placed in a small acacia tree about 12 feet from the ground, and resembled in structure that of our Common Rook. Hartman likewise found a nest in the same country, on May 3, with eggs resembling those of the Carrion Crow.

In the Indian Ocean the species ranges as far east as Madagascar and the Seychelles Archipelago. It is plentiful in Madagascar, where its Betsileos name is "Goaka," in the Bar language the "Gaga" and the Hovas call it "Voromkako." On the island of Anjuan it is known, according to Mr. Bewsher, as the "Quihe." The species has been obtained in Mohilla by Kersten, on Mayotte by Pollen and Humblot, and it is known to be distributed over the Seychelles Islands.

During Sir E. Newton and Mr. S. Roch's expedition from Tamataye to Antananarivo they "found a nest on a low tree in the middle of the capitol. The nest and eggs were in every respect similar to those of the Common or Hooded Crow."

Corvus umbrinus.

- "*Corvus umbrinus*, Hedenb." Sundev. k. Vet. Akad. Förh. Stockh. 1838, p. 199; Dresser, B. Eur. iv. p. 577, pl. 265, fig. 2 (1874); Sharpe, Cat. B. M. iii. p. 17 (1877); Shelley, B. Afr. I. No. 636 (1896); Alexander, Ibis, 1898, pp. 81, 91; Salvad. Ann. Mus. Gen. 1899, p. 288 *Cape Verde Isl.*; Reichen. Vög. Afr. ii. p. 633 (1903); Grant and Forbes, Nat. Hist. Sokotra, p. 22 (1903); Nicoll, Ibis, 1904, p. 35, *Cape Verde Isl.*; A. L. Butler, Ibis, 1905, p. 326 *Soudan*.
- "*Corvus infumatus*, Wagn. 1839," Sundev. Œv. 1850, p. 130.
- Corvus corax umbrinus*, Kleinschmidt, J. f. O. 1906, p. 86.
- Corvus corone* (non Linn.) Dorhn. J. f. O. 1871, p. 5 *Cape Verde Isl.*

Adult male. General plumage brownish-black, with a bronze gloss; the nasal bristles, which set flat over the nostrils, are black like the lores and feathers surrounding the eyes; feathers of foreneck lanceolate. Iris dark brown; bill, tarsi and feet black. Total length 21 inches, culmen 2.95, wing 14.9, tail 8.4, tarsus 2.95, Egypt (Shelley).

Adult female. Like the male in plumage. Culmen 2.4, wing 15.4, tail 8.3, tarsus 2.4; depth of bill at nostrils 0.8, St. Jago (Alexander).

The Brown-necked Crow is abundant on the Cape Verde Islands, but has not otherwise been recorded from further west than Kordofan and the Nile Valley, from whence it ranges eastward over the southern half of Asia to Baluchistan.

On the Cape Verde Islands the species is generally distributed, so it is surprising not to find it recorded from the mainland of West Africa. That caused me in 1896 to enter *C. leptonyx* (B. Afr. i. No. 637) under the impression that the Cape Verde Island Crow would prove to belong to the same species as the Madeira and Morocco small Raven, but that has been proved conclusively not to be the case. The two species are very similar, but the Morocco bird has a stouter, more Raven-like bill, and for comparison, I have given the depth of the bill in the Cape Verde Island specimen I have described.

Regarding the Brown-necked Crow on Santiago, Mr.

Boyd Alexander writes: "On February 25, we discovered a nest ready for eggs on a ledge of rock close to the sea and about 30 feet up. Locusts formed the chief food of these birds, which they hunted in a most systematic manner. On several occasions I had the opportunity of watching them on the war path. A party get together, and straightway set about circumventing a portion of ground that is likely to hold locusts. Then a certain number spread themselves out like the cordon system of outposts, while the remainder, with quick strides, beat up the ground towards the locusts, which jump forward—the majority becoming the prey of the birds drawn up in line, who, carrying out the principle of 'share and share alike,' act in their turn as the skirmishers of the next beat. Three specimens were obtained (one a pied variety)." On the Island of Brava, he calls it "common everywhere." Fea procured specimens at Boavista, San Filippe and Sao Nicolau. On this latter island Boll met with the species in large flocks, and remarks that it was called by the natives the "Curvo."

The most southern range known for the species is Kawango on the eastern shore of Victoria Nyanza, where Fischer obtained it during his last journey; he also met with it at Barawa on the Somali coast, and in this country Speke found it fairly plentiful towards Berbera.

On the island of Sokotra, according to Messrs. Ogilvie Grant and H. O. Forbes, it is known as the "Aäireb," but when in flocks as "Aäiroop." They did not find them abundant anywhere on the island, but were generally seen in pairs and as a rule were not wild. The harsh croak of this Crow they liken to that of *Corvus corax*, but not so deep.

Antinori considered it to be common between Takasia and Adda Galla. Heuglin also records it from that country, Abyssinia, the Red Sea, Sennar, Kordofan and Egypt,

generally to be met with singly or in pairs, frequenting the native villages, the palm groves, where they feed upon the dates, or the pasture land where they search for insects and grubs amongst the herds of cattle and camels. Mr. A. L. Butler writes: "The Brown-necked Raven is common on the sandy and gravelly deserts of the Northern and Western Soudan, but is scarce in the cotton-soil country. Along the Desert railway from Halfa to Khartoum it is always to be seen; it is abundant behind Khartoum, attracted by the garbage from the town; and is constantly met with on the deserts and Jebels of Kordofan. I did not see it once on the Dinder, Rahad, Atbara or Setit Rivers (March to May, 1904)." They breed both in trees and on rocks, for in Egypt my late friend, E. Cavendish Taylor, found a nest in the centre of the crown of a Date-palm near Assuan in March with four eggs and another one, with five eggs, on one of the pyramids of Ghizah. The eggs closely resemble those of the Common Raven and measure about 1.55×1.25 .

Corvus edithæ.

Corvus edithæ, Phillips, Bull. B. O. C. iv. p. 36 (1895) *Somali*; Shelley, B. Afr. I. No. 638 (1896); Reichen. Vög. Afr. ii. p. 633 (1903); iii. p. 836 (1905).

Corvus corax edithæ, Kleinschmidt, J. f. O. 1906, p. 87, pl. 1.

Adult. Extremely similar in general colouring to *C. umbrinus*, but differ in having the greater basal portion of all the feathers of the neck and chest pure white, while in *C. umbrinus* all the feathers are alike in having their base pale dusky; the bill is also slightly shorter in *C. edithæ*. Total length 18.0 inches, culmen 2.0, wing 13.8, tail 7.3, tarsus 1.3. ♀, 18. 1. 97, Berbera (L. Phillips).

Edith's Crow ranges over Somaliland and westward to Lake Rudolf.

This bird was named after Miss Edith Cole, who accompanied Mr. Lort Phillips' party into Somaliland when he

discovered the species, of which he writes: "At Dejamio, in the Hainwaina Plain, I was writing in my tent, and, hearing a distinctly different caw-caw to that of our usual camp-followers, I went out and saw two brown Crows seated on a koodoo head that had been put outside the Zareeba hedge for the birds to clean. Directly they saw me they flew away, but came circling back over the camp."

"This small Crow," Dr. Elliot writes: "was seen at various places during the journey, such as Deregodleh, Laferug, Higlileh in Ogaden, &c. It was at once recognisable, even if not in sight, by its entirely different caw, quite unlike that uttered by the other Crows, and when flying, the tail extending far beyond the secondaries made the bird quite conspicuous, when in company with individuals of *Rhinocorax affinis*."

The most western range known for the species is Lake Rudolf, where Mr. J. J. Harrison obtained a pair, April 18, 1900.

Corvus capensis.

- Corvus capensis*, Licht. Verz. Doubl. p. 20 (1823) *Cape*; Rüpp. N. Wirb. Vög. p. 21, pl. 10, fig. 3, *head*; Shelley B. Afr. I. No. 639 (1896); Johnston, Brit. Centr. Afr. p. 330 (1897); Shortridge, Ibis, 1904, p. 174 *Pondoland*; A. L. Butler, Ibis, 1905, p. 326 *Soudan*.
Heterocorax capensis, Sharpe, Cat. B. M. iii. p. 12 (1877); Reichen. Vög. Afr. ii. p. 637 (1903); Sharpe, Ibis, 1904, p. 367 *Cape Col*.
Corvus segetum, Temm. Pl. Col. Gen. *Corvus*, p. 70 (1826).
Corvus macropterus, Wagl. Syst. Av. Gen. *Corvus*, sp. 10 (1827).
Corvus capensis minor, Heugl. Orn. N. O. Afr. p. 499 (1871); Reichen. Vög. Afr. ii. p. 638 (1903); iii. p. 836 (1905); Kleinschmidt, J. f. O. 1906, p. 79.
Heterocorax capensis minor, Neum. J. f. O. 1905, p. 230 *N.E. Afr*.
 Le Corneille du Cap. Levaill. Ois. Afr. ii. pl. 52 (1799).

Adult. Entirely black, glossed with steel blue and purple inclining to greenish bronze on the quills and tail. Iris dark brown; bill and feet black. Total length 18 inches, culmen 2·8, wing 14·3, tail 8·3, tarsus 3·0. ♂,

25. 5. 01, Cape Col. (Sloggett). In others from Cape Colony, the culmen measures 2.5 and 2.0 and the wing 13.3 and 12.2.

N.E. Africa, Adults. Total length 18.0 inches, culmen 2.2 and 2.1, wing 13.5 and 12.7, tail 7.1, tarsus 2.6 and 2.5, Kavirondo (Jackson) ♂ & ♀, 12. 12. 89.

Immature. Duller and browner than the adults.

The Cape Rook is known to range over South Africa generally and North-east Africa, to nearly 16° N. lat.: but has not yet been recorded from the country between the Equator and 10° S. lat.

The range of this species, although remarkable for the wide tract of country it is not known to inhabit, is far less strange than that of *C. umbrinus*, in which a similar interruption of the known range extends from Kordofan to the Cape Verde Islands. I cannot admit that there is any character for distinguishing a North-east African subspecies of *C. capensis*.

The most northern range known for these Rooks in Western Africa is Benguela. Anchieta has collected specimens at Galanga, the Koroko River, Caconda and Humbe, and informs us that it is known to the natives as the "Kiquamanga."

Andersson writes: "I found this Crow very common in Ondonga, where it nests. In Damaraland it is very local, and nowhere common; but it is more frequent in Great Namaqualand, especially towards the Orange River; and in the Cape Colony it abounds. In Damaraland, where, till lately, the natives never cultivated the ground, it is a shy bird, and I never saw it there near the native villages: but in the Cape Colony it is pretty sociable, frequenting the cultivated land, where it resorts to the vicinity of domestic buildings, and sometimes follows in the wake of the plough in search of insects and larvæ, which constitutes its chief food, though it is said that it will also feast upon carrion, and will sometimes

plunder the crops of maize. It is usually found in small flocks, and is a clamorous bird, uttering harsh choking sounds, just as though its crop was full. The nests of this species, which I observed in Ondonga, were built on palm trees." In Cape Colony, according to Layard: "This species never approaches Cape Town, but appears to be otherwise generally distributed."

Starke writes: "This species, the well known 'Koran-land Kraai' of the Dutch, is generally found in the neighbourhood of cultivated land, for, like the Rook in England, it is a constant follower of the plough, for the sake of the worms and larvæ that are turned up; so much is this the case, that in Damaraland where it is a comparatively recent immigrant, its appearance seems to have coincided with the first ploughing of the land by the natives. In addition to insects this Crow feeds upon grain and various small seeds, occasionally upon carrion. In western Cape Colony it is a constant attendant upon the cattle on the mountain pastures, apparently for the sake of the beetles and other insects obtained by turning over the dung. It is a noisy, clamorous bird, especially in spring, when it appears to lose all control over its voice, and gives vent to a curious variety of harsh, cracked falsetto notes. The nest, usually built on a tree, but occasionally on the ledge of a rock, is large, firmly constructed of dead sticks and twigs, lined with rootlets, hair, wool and dry grass. The eggs, three to five in a nest, vary from buff to pink, thickly marked all over with small spots and dots of red, pink and brown.

"My friends, Messrs. Jupp and Ivy, of Grahamstown, inform me that in the valley of the Great Fish River this Crow plays the part of foster parent to the young of the Great Spotted Cuckoo (*Coccyzus glandarrius*)." In Egypt it is the Hooded Crow (*Corvus cornix*) which in like manner performs the part of foster parent (Shelley, B. Egypt, p. 163).

The Colonels Butler and Fielden, and Captain Reid (Zoologist, 1882, p. 255), give some interesting notes regarding these Rooks in Natal. Gregarious in small bands, never exceeding, perhaps, twenty in number, attaching themselves to particular spots, and maintaining a regular line of morning and evening flight. Nest bulky, built in isolated thorn-trees, frequently close to farms or Kaffir kraals. These nests might be counted by dozens in the thorny bush near Ladysmith, and all along the main road between that town and Estcourt. Colonel Butler, "found a nest containing fresh eggs about September 12, which were unfortunately destroyed by Kaffirs. The same pair built another nest at once in an adjoining tree, but being again disturbed by Kaffirs deserted it before completion, and built a third nest at the top of the tree in which the first nest had been placed. From this last I took a single egg on October 2. The birds then built again in a low peach tree, about ten yards off, but the eggs were again destroyed by the Kaffirs on November 5. The Kaffirs regard them as birds of ill omen."

Although the species appears to be distributed over the whole of South Africa, it seems to be rare between the Vaal and Zambesi rivers, and regarding its occurrence in British Central Africa, Sir Harry Johnston wrote in 1897 (Brit. Centr. Afr. p. 330): "No specimen has been sent home, but I have seen it or a bird singularly like it, entirely black in plumage, on the upper part of Mount Mlanji, and on the higher plateau of Zomba Mountain." This ends all I know regarding the species from south of 10° S. lat.

It has not been recorded from any part of German East Africa, but as soon as we cross that frontier towards the Equator it again becomes fairly abundant from Kavirondo over North-east Africa, with the exception of Somaliland.

Mr. Jackson met with it first in Kavirondo, where he only

saw it in pairs and obtained two specimens, December 12, 1889, on which day he camped at Mwendu in $0^{\circ} 35'$ N. lat. by $34^{\circ} 85'$ E. long. It has also been procured by him in Nandi and by Emin, as far west as Lado. Lord Delamere obtained a specimen at Laka Nakuro.

The species has not yet been recorded from Somaliland; but it has been met with by Sir Harry Johnston at Lake Baringo, and by Lord Lovat and Mr. Pease in Southern Abyssinia. In Shoa, specimens have been collected at Angolala by Harris in February, by Antinore at Luce in October, and by Ragazzi at Goro, in November, where, according to the latter naturalist, it is very common. Mr. Neumann gives the wing measurement of five specimens from this district, which vary from 12.2 to 14.6 inches. Heuglin calls it a resident in the Abyssinian highlands, and found it in Sennaar and South Kordofan, frequenting the rocks, woods and cultivated land, but rarely entering the towns. Mr. Hawker writes: "I only met with the African Rook in a small district extending from the south and west of Kaka to Fashoda. It was generally found near villages, and had a very harsh cry. When sitting on a tree it puffs out the feathers on its head and neck, which gives it the appearance of having a very large head. Its nest is generally placed on the end of a very thin bough; it is beautifully made of smallish thorn branches with an outer lining of fibre and an inner lining of the felted hair of animals. The eggs, three in number, are rosy white, freckled and blotched with maroon and dark cinnamon." Mr. A. L. Butler writes: "I have only noticed the African Rook between Kaka and Fashoda, the district in which Mr. Hawker met with it."

Genus III. PYRRHOCORAX.

Bill red or yellow, slender; culmen about the same length as the tarsus; nostrils covered by stiff bristly feathers directed forward. Wing long and pointed, about twice the length of the tail. Tail rounded and of 12 feathers. Tarsi, feet and claws red. Plumage entirely glossy black.

Type.

Pyrrhocorax, Vieill. Analyse, p. 36 (1816) *P. pyrrhocorax*.
Fregilus, Cuv. R. Anim. i. p. 406 (1817) *P. graculus*.

This genus ranges from the British Island eastward to China and southward into North and North-east Africa. It includes two species, of which only one occurs in the Ethiopian Region.

Pyrrhocorax pyrrhocorax.

Upupa pyrrhocorax, Linn. S. N. (x.) p. 118 (1758).
Corvus pyrrhocorax, Linn. S. N. (xii.) i. p. 158 (1766) *Europe*.
Pyrrhocorax pyrrhocorax, Shelley, B. Afr. I. No. 640 (1896); Reichen.
Vög. Afr. ii. p. 645 (1903).
Pyrrhocorax alpinus var. digitata, Hempr. & Ehr. Symb. Phys. fol. z (1828).
Pyrrhocorax rupestris, Brehm. Vög. Deutschl. p. 175 (1831).
Pyrrhocorax alpinus, Vieill. N. Diet. vi. p. 568 (1816); Dresser, B. Eur.
iv. p. 445, pl. 251, fig. 2 (1875); Sharpe, Cat. B. M. iii. p. 148
(1877).

Adult. Black, more shiny above and with a green gloss on the wings, upper tail-coverts and tail. Iris brown; bill yellow; tarsi and feet red. Total length 16·3 inches and 15·5, culmen 1·25, wing 11·0 and 10·5, tail 7·0, tarsus 1·7. Ussern, ♂, and Grim Pass, ♀ (Biddulph).

Immature. Duller and browner. Bill blackish inclining to yellow towards the base; tarsi and feet blacker.

The Alpine Chough ranges from the higher mountains of Southern Europe into Abyssinia and the Himalayas.

Blanford, in his "Geology & Zoology of Abyssinia," p. 395, writes: "I met with it once on the Wadela plateau, near Gaso, at an elevation of 10,500 feet, but I did not secure a specimen. There was a small flock, not very wary; indeed I approached so near that I could only account for my not killing a bird by my cartridges being damp. They appeared to be searching for insects on the ground." Heuglin met

with it only in the higher mountains of the Semien district of Abyssinia on the Amba-Ras, but was informed by the natives that it inhabits the Guna and Kolo mountains and frequents in large flocks the inaccessible cliffs at an elevation of 11,000 feet and upwards, where in the morning and evening they become clamorous. With the dawn they leave their roosting-quarters, and, with loud cries, wend their way to the pasture-land to seek amongst the cattle for their food, which consists of all kinds of insect life. They also frequent the villages, where they have been seen nesting in the thatched roofs of churches. Their harsh note was mostly to be heard during their flight out and back from the feeding to the roosting-quarters.

The following notes I take from Mr. Dresser's "Birds of Europe": This species closely resembles our British Red-billed Chough, but is more essentially an alpine bird frequenting the most elevated portion of the mountains in the immediate vicinity of glaciers and eternal snow. Its flight is swift, and it frequently hovers or glides with outstretched wings in circles, especially when descending from an altitude, or when ascending. When it shifts its quarters from the high regions for the valleys it is said to be a sure sign of snow or rain. It feeds on all kinds of insects and seeds and is naturally a shy bird; in confinement, however, according to Bailly, it becomes exceedingly tame and exhibits the greatest attachment to its master. During the spring and summer they are to be met with in pairs, or accompanied with their young, but later in the season they assemble in flocks, which frequently contain a very large number of individuals. About the end of March or the commencement of April they take possession of their breeding-places, which, should they not be disturbed, they use year after year in succession; and about the middle of April or early in May, according to the

altitude where the nesting place is, they commence to construct or repair their nest, which is placed in a fissure in the rocks or in a cave, or else amongst ruins and buildings where they are not likely to be interfered with. The exterior portion of the nest, which is a large and bulky structure, is composed of twigs, grasses and roots, worked together and intermixed with lichens and mosses; and the inside lining is composed of leaves, hair and fine roots. The eggs, from four to five in number, are incubated by both male and female in turn, the term of incubation being about eighteen or nineteen days. The eggs are creamy white, or with a greenish tinge, with underlying faint purplish marking and surface spots and blotches of brown, and measure about 1.4×1.0 .

Genus IV. PYCATHARTES.

Head naked; bill grey or blackish, culmen about the length of the head or middle toe with claw; nostrils rounded and opening at the end of a groove half-way between the forehead and tip of bill. Wing short and somewhat rounded; primaries 5, 6 and 7, the longest. Tail long and rounded, generally longer than the wing. Tarsi and feet greyish, the former rather long, much longer than the culmen.

Type.

Picathartes, Less. Man. Orn. 1828, p. 374 *P. gymnocephalus*.

The genus is confined to West Africa and comprises two species, and these are, apparently, restricted to the highland forests.

Picathartes gymnocephalus.

Corvus gymnocephalus, Temm. Pl. Col. p. 55, pl. 327 (1825).

Picathartes gymnocephalus, Ussher, Ibis, 1874, p. 67, pl. 2 *Denkera*; Sharpe, Cat. B. M. iii. p. 141 (1877); Shelley, B. Afr. I. No. 642 (1896); Reichen. Vög. Afr. ii. p. 644, pl. 11, fig. 2 (1903).

Adult. Head bare and bright yellow, with a roundish black patch on each side of back of head; back, wings and tail slaty grey, with the quills browner; chin bare and bright yellow; neck and under parts covered with silky white feathers. Iris dark brown; bill and legs slate colour. Total

length 16.5 inches, culmen 1.4, wing 6.0, tail 7.5, tarsus 2.6, *Denkera* (Ussher)

Nestling. Similar in colouring to the adult.

The White-necked Bare-headed Crow inhabits the Gold Coast and Togoland.

Hartlaub has mentioned Mr. J. Wingfield's specimen in the British Museum as coming from Sierra Leone; but there is no note on the label to warrant that conclusion. Ussher received from Denkera adults, a nestling and an egg of this species, which are well illustrated in the "Ibis" for 1874, and writes: "Aubinn, who brought me the skins, affirms that they are found in rocky forest-grounds, generally in the neighbourhood of streams, that they build amongst rocks, and that they feed on fresh-water shell-fish, snails and reptiles."

In Togoland, Mr. Ernest Baumann found a nest of this species placed on the ledge of rock, difficult to get at, on the side of the Apototsi mountain, which on June 26, 1894, contained two young birds.

Picathartes oreas.

Picathartes oreas, Reichen. Orn. Monatsb. 1899, p. 40; id. Vög. Afr. ii. p. 644, pl. 11, fig. 1 (1903) *Camaroons*.

Adult. Bare head, mostly black; "forehead and chin bright blue, back of head carmine red" (Reichenow); back, tail and outer webs of the secondaries grey, with the remainder of the quills black, throat and neck grey, slightly paler than the back, and fades off at the crop into buffy white on the remainder of the under parts. "Iris brown; bill black; tarsi and feet bluish grey" (Preuss). Total length 13.7 and 14.0 inches, culmen 1.5 and 1.4, wing 6.1 and 5.75, tail 6.2 and 5.7, tarsus 2.5 and 2.3. Efulen (Bates). ♂, 1. 12. 02, and ♀, 27. 11. 02.

The Grey-necked Bare-headed Crow inhabits Camaroons.

The species was discovered by Dr. Preuss, at Victoria, where he was Director of the Botanical Gardens of that town.

In the Efulen district, according to Mr. Bates, the hills,

which do not rise a thousand feet above the valleys, are covered with forest, with the exception of a few bare cliffs. "Along the sides of the hills, under the trees, are many large scattered rocks, with holes and small caves among and under them, where porcupines hide, bats hang, and Swallows and Bare-headed Crows (*Picathartes*), make their nest of mud."

Genus V. CRYPTORHINA.

The sexes differ only in the colour of the bill, which is, in the males, entirely black, while in the females it is yellowish or red, with the end third black; nostrils covered by horizontal bristles. Wing rounded, the secondaries reaching nearly to the end. Tail of ten feathers only, long and graduated, more than half as long again as the wing. Tarsi and feet black, the former longer than the culmen.

Type.

Cryptorhina, Wagl. Syst. Av. art. *Cryptorhina* (1827) *C. afra*.
Ptilostomus, Swains. Classif. B. ii. p. 266 (1837). *C. afra*.

The genus is confined to Northern Tropical Africa, where it is represented by a single species.

Cryptorhina afra.

Corvus afer, Linn. S. N. i. p. 157 (1766) *Senegal*.
Cryptorhina afer, Sharp Cat. B. M. iii. p. 75 (1877); Shelley, B. Afr. I. No. 643 (1896); Reichen. Vög. Afr. ii. p. 642 (1903).
Corvus senegalensis, Linn. S. N. i. p. 158 (1766) *Senegal*.
Coracias niger, Lath. Ind. Orn. i. p. 172 (1790).
Lanius acuticaudatus, Vieill. N. Dict. xxvi. p. 134 (1818) *Senegal*.]
Cryptorhina piapiac, Wagl. Syst. Av. *Cryptorhina*, sp. i. (1827).
Cryptorhina poicilorhynchus, Wagl. *t. c.* sp. 2.
Le piapiac, Levaill. Ois. Afr. ii. pl. 54 (1799).

Adult male. Glossy blue-black fading into brown on the rump, upper tail-coverts, tail, primaries, inner webs of secondaries, lower abdomen and under tail-coverts; under surface of primaries white-brown. Iris reddish brown; bill and feet black. Total length 18 inches, culmen 1·4, wing 6·5, tail 11·0, tarsus 1·85. *Gambia* (Molony).

Adult female. Differs only in being slightly smaller, and in the colouring of the bills, which is of a pale red or yellow shade, with the end third black. Iris hazel. Total length 16·5 inches; culmen 1·3, wing 6·15, tail 10·3, tarsus 1·8. *Gambia* (Rendall).

The Piapiac or Senegal Magpie, ranges over Northern Tropical Africa between 2° and 16° N. lat.

The Type came from Senegal, and the species is generally distributed over Senegambia. Dr. P. Rendall writes from the Gambia: "Common. Following the cattle." Barahona procured the species on Bulama, the only island from which it has been recorded, in fact, it appears to avoid the sea, or it may be on account of the absence of cattle that it has not otherwise been recorded from within 200 miles of the Guinea Coast; but regarding its occurrence at Gambaga, Mr. Boyd Alexander writes: "This is a common species in the open country, consorting together in small flocks, and always to be found where cattle are grazing. It nests in the tops of tall cocoanut trees. Its flight is straight and steady, and when travelling together, these birds give vent to a series of short sharp cries, almost in unison. The males have the iris claret-colour, the females hazel." A little further eastward it has been procured at Bassari by Kersting, and these are the only two places of the Gold Coast and Togoland, from whence the species has yet been recorded. In Nigeria, Dr. Hartert found these birds very common, but only in the valley between Panda and the mountains, assembling in noisy flocks in the corn-fields to feed on the grain, insects and worms, and observes that he never saw them at the Benue nor anywhere to the south of that river.

Bohndorff procured a large series at Katschugali and Semmio in the Niam-Niam country. Emin obtained it at Kiri, and found the species frequenting in numbers, the Borassus-palms in the Lado district, southward to about 2° N. lat.; Dr. Donaldson Smith obtained specimens in the Akara country. They range down the Nile into Kordofan and Abyssinia, but I find no record of their occurrence near the shores of the Red Sea, nor further north than 16° N. lat. Its Arabic name is "Scharal."

According to Heuglin, they are lively and active, retiring of an evening with much noise, and many evolutions in the air, to roost in pairs or family parties on the crowns of the Doleb-palms, and in the early morning, after recommencing their noise and fluttering they take wing for the pasture land to feed amongst the cattle. Their note he likens to a clear pipe, resembling that of the Alpine Chough. They breed from March to June, and about July, during the beginning of the dry season, assemble in large flocks. The nest, which is placed in the tops of the Doleb-palms, is constructed of twigs and leaves, with the entrance usually covered with thorny boughs.

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