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NOVITATES ZOOLOGICAE.

VOL. XXXIII, 1926.

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A Journal of Zoology

IN CONNECTION WITH THE TRING MUSEUM.



EDITED BY

LORD ROTHSCHILD, F.R.S., PH.D.,

DR. ERNST HARTERT, AND DR. K. JORDAN.

VOL. XXXIII, 1926.

(WITH TWELVE PLATES)

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NOVITATES ZOOLOGICAE

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No. 1.

NEW GEOMETRIDAE

By LOUIS B. PROUT, F.E.S.

SUBFAM. OENOCROMINAE.

1. *Celerena mitis melanoprora* subsp. n.

♂♀. Near *C. m. evitans* Prout (1916), from the Solomons. Palpus with 2nd joint predominantly black, only at base yellow (in the other races predominantly yellow). Thorax with a blackish anterior band well developed (in a few *m. evitans* from Bougainville feebly developed, otherwise wanting is *m. evitans* and *m. mitis*). Abdomen with some black-grey maculation. Both wings with the black markings on an average broader than in *m. evitans* (but variable in that race).

Bismarek Archipelago : New Britain (*loc. typ.*) ; New Ireland ; New Hanover ; Rook Island ; Admiralty Islands.

SUBFAM. HEMITHEINAE.

2. *Aeolochroma prasina defasciata* subsp. n.

♂. Forewing with basal patch in its anterior half less developed, generally more mixed on SC with bluish-white scales and with a subbasal admixture of these scales at costa ; antemedian line with the inward projection near costa generally lengthened ; median area broadened, especially posteriorly, largely remaining green, only with a narrow dark (red- and black-mixed) band proximally, some dark admixture posteriorly and some bluish-white admixture between M² and SM² ; postmedian line generally rather more sharply angled at R¹, weakly angled at R³ ; the red-brown, black-mixed band beyond well developed, almost as in *p. spadicocampa* Prout (1917), but less bright.—Hindwing with the dark mark on DC² strong, the praesubterminal markings generally weak.

Forewing beneath with the white mark in cellule 4 between cell-dot and postmedian clear and rather sharply defined.

♀. Similarly distinguishable by the form of the median band ; the white subcostal admixture generally strong, including a rather pronounced white mark just outside the anterior indentation of the postmedian. Forewing beneath with the white mark in cellule 4 as in the ♂.

Bismarek Archipelago : Rook Island, 1 ♂ ; New Britain (*loc. typ.*), 8 ♂♂, 2 ♀♀ ; New Ireland, 3 ♂♂, 1 ♀ ; New Hanover, 2 ♂♂, 1 ♀.

Except for the rather less bulged termen and the lack of abrupt inward

posterior curve of the postmedian, this more recalls *viridimedia* Prout (1916) than any hitherto known race of *prasina*, unless possibly the smaller *p. spadicoampa* of Biak.

3. *Terpna iterans* sp. n.

♂, 58 mm. Near *superans* Butl. (1878). Face narrowly pale beneath as well as above. Palpus predominantly pale.

Wings somewhat paler than in *superans*, at least in median area, the markings of upperside at first sight more suggestive of *vigens* Butl. or the *erionoma* Swinh. group.—*Forewing* with a fine subbasal line, thickening a little at costa; antemedian much heavier (except at costa) than in *superans*, fairly equal in development throughout; postmedian more distally placed than in that species, heavier, complete (not so broken into vein-dots); pale subterminal obsolete.—*Underside* less suffused with ochreous proximally, the heavy longitudinal blackish streaks wanting, the straightish, oblique antemedian of upperside faintly reproduced; cell-spots less large and round than in *superans*, that of the forewing being slightly concave on outside, that of the hindwing relatively long and narrow; subterminal row of spots not double, only the elongate, confluent pair in cellules 4 and 5 of the hindwing suggesting a possible confluence of two in each of the cellules named.

China: district of Shanghai, type in coll. L. B. Prout, kindly presented by M. l'Abbé J. de Joannis, paratype in his collection.

4. *Thalassodes progressa* sp. n.

♂, 26–29 mm.; ♀, 27–34 mm. Face dull brown-red. Palpus in ♂ $1\frac{1}{2}$, in ♀ just over 2; red on outside, white beneath. Vertex white; occiput green. Hindtibia in ♂ with slender hair-pencil.

Wings shaped about as in the common *T. digressa* Walk. Ground-colour duller and more bluish green, with similar white irroration and strigulation, but with the lines extremely fine and almost obsolete; costal edge of forewing similarly ochreous; hindwing with more pronounced white on DC, though a little interrupted in the middle; faint suggestions of a dark terminal line; fringes pale ochreous, somewhat mixed with green proximally.

Madagascar: Diego Suarez, March–July, 17 ♂♂, 7 ♀♀ (G. Melou). Type in coll. Tring Museum.

A larger ♂ from Nabagulo Forest, 15 miles from Kampala, Uganda, October 25–November 6, 1921 (W. Feather), shows similar structure and probably represents a race, but had better await more material from Continental Africa. *T. digressa* lacks the tibial pencil.

5. *Prasinocyma nonyma* nom. n.

Prasinocyma eichhorni Prout, *Nov. Zool.* xxxii. 35 (1925) (nec *Nov. Zool.* xxvii. 267, 1920).

By a very inexcusable oversight, I overlooked that I had already dedicated to the Eichhorn brothers a New Guinea species in this extensive genus. A new name therefore becomes necessary for the New Ireland species described 5 years later.

6. *Prasinocyma loveridgei* sp. n.

♂, 17–18 mm. Head and front of thorax whitish, slightly mixed with fuscous. Palpus scarcely $1\frac{1}{4}$, 2nd joint rough-sealed, especially above, where

the scales project obliquely forward, 3rd joint short but distinct; whitish, the 2nd joint darkened on outside. Antennal shaft somewhat infuscated, the longest pectinations about 4, apical third or more not pectinated. Thorax above predominantly fuscous, abdomen above more whitish, sprinkled with blackish-fuscous; both beneath whitish. Hindtibia dilated, with hair-pencil and with a terminal process reaching to near end of 1st tarsal joint; tarsus rather short.

Forewing with cell at least $\frac{1}{2}$, DC curved, SC¹ well free, R¹ connate or stalked, R² from little before middle, M¹ connate or shortly stalked; dirty white, with copious but irregular dark irroration; costa spotted; cell-mark black, crescentic, strongest on DC²; ill-defined red-brownish clouding over a great part of the wing, occupying the proximal half excepting a vague antemedian band between M² and SM² and reappearing in a slightly incurved band (in the middle interrupted) from costa midway between cell-mark and termen to hindmargin close to tornus; some blacker marking on this band near costa; terminal spots black, interneural, slightly elongate; fringe very weakly chequered.—*Hindwing* with termen almost rounded; C closely approximated to about middle of cell, then rapidly diverging, R² as on forewing, M¹ shortly stalked; whitish, the irroration slight and sparse; a rather thin, rather elongate cell-mark; terminal spots indicated.

Both wings beneath nearly as hindwing above, the forewing, however, with costa spotted and anterior part (except distally) slightly suffused.

Tanganyika Territory: Kongasa, April 23, 1917 (A. Loveridge), 2 ♂♂ in coll. Tring Museum.

Near *perpulverata* Prout (1916), rather broader-winged, much less uniformly dusted. Possibly a race, as a ♀ *perpulverata* ab. *subfasciata* from Kenya Colony (April 1922) resembles it in the less uniform irroration.

7. *Metallochloa impotens* sp. n.

♂, 25–27 mm. Face orange-red. Palpus slightly over 1; red on outside, whitish beneath. Vertex white. Antenna pectinate, the branches very short (about 1); light-brown, at base white. Thorax and abdomen white, tinged with green above; abdominal crest almost entirely obsolete. Foreleg tinged with red, especially the coxa; hindtibia strongly dilated, with hair-pencil and slight terminal process; terminal spurs short; tarsus very short.

Forewing with termen bowed, moderately oblique; SC¹ generally anastomosing slightly with C, sometimes free, SC² shortly before SC³, R¹ connate or just stalked, M¹ connate or just separate; whitish green, about as average captured *Iodis lactearia* Linn.; costal edge narrowly buff; traces of a cloudy white antemedian; a broad white postmedian, tapering a little anteriorly, here gently incurved, not quite reaching costa, from R² to M² rather more oblique than termen, at hindmargin about vertical; fringe concolorous, at tips whiter.—*Hindwing* rather broad for the genus, the angle at R² moderate; SC² shortly stalked, M¹ shortly stalked; concolorous with forewing; a broad, strongly curved postmedian white line (band) about 3 mm. from termen.

Underside whitish, the buff costal edge of forewing rather broader, at least at base; frenulum dark-coloured.

N.E. Madagascar: Diego Suarez, February–April 1917, 7 ♂♂ (the type dated March 4); Kulau, 1 ♂. All in coll. Tring Museum, collected by G. Melou.

Some specimens show indications of a darker cell-dot on each wing. The inclusion of the present and another similarly pectinated Diego Suarez species (1 ♂, worn, faecies of a white, well-banded *glacialis* Butl.) in *Metallochloa* will involve a slight change in my Key (*Gen. Ins.* cxxix. 16, no. 56), but seems justifiable; the general habitus, genitalia, etc., would clearly place them in this group rather than in *Antharmostes* or *Prasinocyma*.

8. *Hemistola hypnopoea* sp. n.

♂, 20–27 mm.; ♀, 24–30 mm. Face red. Palpus slightly over 1, slender, 2nd joint with some sparse, slender, long-projecting hair-scales above and beneath (easily lost), 3rd joint distinct, though small; outside reddish. Tongue well-developed, but slender. Antenna in ♂ with pectinations short (scarcely 2); in ♀ not pectinate. Vertex white; occiput greenish. Thorax and abdomen pale green above, whitish beneath. Hindtibia in ♂ dilated, with hair-pencil.

Forewing with SC¹ anastomosing with C, M¹ separate; dull pale yellowish-green, recalling *Nothoterpna* or *Acollesis*; costal edge very narrowly pale buff; lines white, obsolete at costa; antemedian slender, curved; postmedian less slender, mostly straightish, about 3 mm. from termen, anteriorly curving inward before becoming obsolete.—*Hindwing* with termen rounded, rather full; C approximated to cell near base only, rapidly diverging; R² rather extreme, M¹ separate; concolorous with forewing; postmedian line continued, little beyond middle of wing, varying from almost straight to curved nearly parallel with termen.

Underside whiter, the forewing, however, generally strongly shaded with dirty yellow-greenish except at distal and hind margins.

N.E. Madagascar: Diego Suarez, mostly February–April, 25 ♂♂, 6 ♀♀ (*loc. typ.*); Kulau, 2 ♂♂. Type in coll. Tring Museum.

The large specimens perhaps belong to a separate brood as the two largest ♀♀ are dated December 24 and January 8, but the only large ♂ is undated. None are in perfect condition and they probably fade in relaxing.

SUBFAM. STERRHINAE.

9. *Scopula aspiciens* sp. n.

♂♀, 19–24 mm. Face black. Palpus black, beneath whitish. Vertex white. Antennal shaft at base white, then more or less heavily spotted with black; joints in ♂ slightly projecting, ciliation fully 1. Thorax and abdomen concolorous with wings; abdomen often (especially in the ♂) with blackish dorsal dots or small spots. Foreleg more or less infuscated on upper- and inner-side; hindtibia in ♂ long, with moderate white hair-pencils, the tarsus scarcely $\frac{2}{3}$.

Forewing slightly narrower than in average *Scopula*; whitish, generally very densely (often almost throughout) irrorated with fleshy reddish, but sometimes remaining pale, thus very variable in colour; a small black cell-dot, almost always partly ringed with grey scales and with a noticeable white spot between it on the median shade; median shade generally rather thick, mixed red and grey (in varying proportion), a little beyond the cell-dot, slightly excurved anteriorly, more markedly incurved between M² and SM²; lines weak, greyish, antemedian bent outward in cell, marked with three darker dots on veins; postmedian excurved near costa, incurved between radials and more slightly

between M^2 and SM^2 , slightly punctuated on the veins; subterminal whitish, weak, nearly parallel with postmedian; terminal dots small, black; fringe rather more highly coloured than wings.—*Hindwing* not very broad, termen only very slightly bent at R^3 ; cell-dot not ocellated; antemedian line wanting, median curved round innerside of cell-dot, angled outward at base of R^1 ; outer area much as on forewing.

Underside rather paler, much less reddish, the forewing in some specimens more or less suffused with grey; cell-dots and terminal dots distinct, on forewing also the median and postmedian lines.

Madagascar: Diego Suarez, February–September 1917 (G. Melou), a long series in coll. Tring Museum; Morondava, a rubbed ♂ in the same collection.

10. *Hamalia ligys* sp. n.

♂, 21–23 mm. Face brown, mixed with black. Vertex white. Occiput and front of thorax dusky brown. Antennal shaft white proximally, then mixed with blackish; ciliation 1 or slightly over. Thorax and abdomen concolorous with wings, Hindtibia with the usual pale hair-pencil; hindtarsus not so extremely abbreviated as in *nigromarginata* Dogn. (1890).

Wings shaped much as in *venipunctata* Warr. (*Proc. U.S. Nat. Mus.* xxx, 446), etc., coloured and marked almost as an aberration of the much larger *nigromarginata* Dogn. with the median shade less thick, more concise.—*Forewing* with costal edge narrowly blackened; cell-dot black; antemedian line fine, straightish; median shade faintly sinuous or almost straight, touching the outer side of, or almost crossing, the cell-dot; postmedian much as in *nigromarginata*, rather more equally developed throughout; terminal spots between the radials and at tornus rather large, the former broadly triangular; terminal line less thick and regular than in *nigromarginata*; fringe slightly infuscated and with darker spots.—*Hindwing* with sharp cell-dot, otherwise marked nearly as in *nigromarginata*.

Underside much as in *nigromarginata*.

Colombia: Cananche, Cundinamarca, September 1903 (M. de Mathan) type and two other ♂♂ in coll. Tring Museum. Peru: Palcazu and La Oroya (Rio Inambari) in coll. Tring Museum; Ucayali in coll. Dognin.

11. *Hamalia exempta* sp. n.

♂, 20 mm. Face blackish, slightly paler below. Palpus very short and slender, blackish brown. Antennal ciliation $1\frac{1}{2}$. Vertex white. Occiput and front of thorax dark brown; the rest of thorax and abdomen concolorous with wings. Hindtibia with long whitish pencil from femoro-tibial joint; tarsus slender, $\frac{2}{3}$ or slightly over.

Forewing with areole single, SC^1 stalked a little beyond; light pinkish cinnamon to pinkish buff, rather thinly and smoothly scaled; slight dark irroration; costal edge narrowly blackish brown; lines brownish grey; antemedian indistinct, very slightly excurved in cell, crossing extreme base of M^2 , very slightly incurved between this and SM^2 ; median line fine, almost straight, from costa slightly beyond middle to hindmargin at about $\frac{2}{3}$; cell-mark not strong, slightly proximal to median line; postmedian weakly sinuous, the outward curve about R^3 – M^1 perhaps the most noticeable; terminal line blackish,

slightly interrupted; fringe rather pale, dark-spotted.—*Hindwing* with SC^2 stalked for nearly half its length; first line wanting, the others more proximal than on forewing, the median fine, bent proximally to the cell-dot, the postmedian continuing the median of forewing, rather more markedly excurved between R^1 and M^2 than on forewing.

Underside more weakly marked, the hindwing paler.

Colombia: Yuntas, near Cali, type in coll. Dognin.

A rubbed ♀ from Salidero, N.W. Ecuador, 350 feet, March 1901, agreeing accurately in venation and apparently in markings, has stood unnamed in the Tring Museum; hindtibia with the outer proximal spur vestigial.

12. *Sterrha recrinita* sp. n.

♂, 18 mm. Head brown. Antenna with rather long fascicles of cilia ($1\frac{1}{2}$ or over). Thorax and abdomen drab, beneath slightly paler and more brownish. Midleg long, the tibia throughout with a fringe of long, buff-tinted hair. Hindleg short, the tibia with a pale pencil, the tarsus greatly aborted. Abdomen beneath with a rather long, pale pencil from near base.

Forewing with termen long, strongly oblique, tornal region rather ample; areole moderate, SC^1 from its apex or shortly stalked, SC^2 stalked a little beyond SC^1 ; costal region beneath (to beyond middle) with a fringe of rather long hair; glossy drab, with a slight shade of olive-brown; the gloss shown, with a strong lens, to be produced by a sprinkling of glistening leaden scales; costal margin more buff; cell-dot weak; lines obsolete.—*Hindwing* somewhat distorted, irregularly amygdaloid, its greatest length at M^1 , apex and tornus scarcely indicated, termen extremely convex; cell apparently extremely short and not or scarcely closed, SC^2 and R^1 long, medians stalked; mostly concolorous with forewing, in the abdominal region more tinged with buff.

Underside almost uniform drab, the hindwing mostly hairy, costa at base with a strong tuft, succeeded by a more ochreous patch of bristly scaling.

S.E. Peru: Rio Huacamayo, Carabaya, dry season, 3,100 feet, June 1904 (G. Oekenden), type and another ♂ in coll. Tring Museum. Bolivia: Rio Songo, 750 m. (Fassl), a rather rubbed ♂ in coll. Dognin; Buenavista (E. Bolivia), 750 m. (J. Steinbach), a damaged ♂ in coll. Tring Museum.

Rather near *S. prolixa* Schaus (*Ann. Mag. Nat. Hist* (8) xi. 353, as *Euacidalia*), the forewing more acute, the leg-tufts (not mentioned in original description) less red, etc.

13. *Sterrha (Pogonogya) scholaea* sp. n.

♂, 23 mm. Head orange-cinnamon. Body concolorous with wings.

Forewing with costal margin only curved near apex, termen scarcely curved, long; SC^1 free; pinkish buff, suffused—except near costal margin—with fawn; costal edge orange-cinnamon; cell-mark blackish; lines fine, somewhat as in *jugaria* Schaus (*Tr. Amer. Ent. Soc.* xxvii. 259), etc., the antemedian being indistinct, little curved, chiefly indicated by slight dark proximal shading, the postmedian vertical from costa about 3 mm. from apex, bent at R^1 , slightly incurved between this and R^2 , approximated to termen at medians, markedly inbent behind M^2 , then slightly thickened, closely approaching termen at SM^2 .—*Hindwing* with abdominal margin long, folded, with hair-pencil, termen

moderately curved; SC^2 rather shortly. M^1 very shortly stalked; concolorous with forewing, abdominal area rather more ochreous; cell-dot weaker; an indistinct, sinuous postmedian line (incurved between the radials, excurved before and behind), about twice as near to cell-dot as to termen; fringe more strongly irrorated towards tornus.

Underside less—that of hindwing scarcely—suffused with fawu; the cell-marks and on forewing the postmedian line indicated.

Colombia: Pacho, E. Cordillera, 2,200 m. (A. H. Fassl), type in coll. Dognin; Muzo, 400–800 m. (A. H. Fassl), paratypes in coll. Tring Museum, coll. Joicey, coll. L. B. Prout.

Larger than *rufulata* Warr. (1900), anal tufts apparently less developed, abdominal pencil long (from near base), *pale*; forewing with termen relatively longer, rather redder, cell-dot distincter, etc.

14. *Anisodes pauper celsa* subsp. n.

♂, 45–48 mm. Distinguished principally from the name-typical race (*pauper* Butl. 1887, Solomons) by its large size; further by a more rufescent tinge, rather dense dark irroration, appreciably darkened costal edge of forewing and more extended fleshy suffusion of forewing beneath, here leaving only a narrow distal border and rather broader posterior area pale. Varies extremely, like *p. pauper*, in the expanse of the black bordering of the cell-mark of hindwing.

New Britain: Talasea, March–April 1925 (A. F. Eichhorn), 2 ♂♂ in coll. Tring Museum.

SUBFAM. LARENTIINAE.

15. *Eois leucampyx* sp. n.

♂♀, 19–22 mm. Close to *amydroscia* Prout (1922), possibly a subspecies, though the ♂ antenna looks rather more compressed laterally. Face reddish, merely shading off gradually to yellowish below. Fillet and scaling of antennal shaft pure white. Tone slightly less yellow than in *amydroscia* (excepting a Pulo Lant race?); forewing with the proximal subterminal marks less equally developed, only with the one behind R^2 strong, the one in front smaller (in *amydroscia* this pair are approximately equal).

New Britain: Talasea, March–April 1925 (A. F. Eichhorn), 3 ♂♂, 1 ♀, in coll. Tring Museum.

A ♂ from Stephansort, N.E. New Guinea, seems to agree accurately, and single specimens from British New Guinea and Bougainville are probably aberrations or kindred races. From *sanguilineata* Warr. (1901), *leucampyx* differs in the possession of an areole, in having the forewing slightly broader, yet with sharper apex, the hindwing slightly more elongate to tornus, and in the less bright colouring, the purple markings being less strong and somewhat mixed with blackish.

16. *Xanthorhoë euthytoma* sp. n.

♂, 30 mm. Palpus nearly $1\frac{1}{2}$, broadly scaled. Antennal pectinations rudimentary (materially shorter than diameter of shaft), two pairs to each joint, surmounted by fascicles of cilia exceeding their own length. Head and body concolorous with wings.

Forewing rather broad, costa in distal half gently arched, apex not acute, termen almost smooth, eurved chiefly about middle, not very oblique; brownish fuscous, slightly rippled with whitish and darker fuscous; basal patch strongly, the rest of the wing more slightly mixed with neutral red; cell-dot black; basal patch not quite 2 mm., bounded by a slightly curved line; succeeding area scarcely paler than central band; central band moderately broad, with a pale tint in front of cell-dot, otherwise pretty uniform, its proximal edge waved, nearly vertical (slightly oblique inward) from costa to M close to base of M², where it bends weakly, thence running very slightly oblique inward to hindmargin; its distal edge almost straight, from costa at nearly 11 mm. to hindmargin at nearly 7 mm., succeeded by a triple white line; subterminal line white, very fine, very slightly interrupted, deeply but not quite regularly dentate, with some slight dark shading proximally, especially between the radials; terminal line more or less interrupted at and midway between the veins (in places forming paired black spots); fringe dark, especially proximally, with a whitish line at base, another at tips, and a third intermediate (slightly nearer to the latter).—*Hindwing* a little paler and greyer; cell-dot black; basal and central areas not differentiated; postmedian line rather more eurved in middle than on forewing, the succeeding white lines rather less distinct; subterminal vaguer than on forewing, especially anteriorly; terminal line and fringe as on forewing.

Underside pale tilleul-buff with some grey suffusion, between cell-dots and postmedian with some wavy dark lines; cell-dots large, black; forewing with a black antemedian costal spot; both wings with postmedian line and indistinct whitish lines beyond; subterminal line ill-developed, but on both wings with dark proximal shades, a strong one anteriorly (almost black between the radials) and a rather less strong posteriorly, leaving cellule 3 pale; terminal line and fringe less sharply marked than above.

Nigeria: near Bamenda, 5,000–6,000 feet, August 1922, type in coll. L. B. Prout.

Near *ansorgei* Warr. (Nov. Zool. vi. 299), but with the subterminal line quite different, etc.

17. *Euphyia goniodes* sp. n.

♂, 32–34 mm. Intermediate between *subangulata* Koll. (1848) and *mediovittaria* Moore (1867). Fore- and midlegs above slightly darker (less white-irrorated) than in *mediovittaria*, the rings at ends of joints consequently more conspicuous.—*Forewing* with termen at least as oblique, apex very slightly more produced; proximal and distal areas rather less tinged with ochreous; markings of proximal area similar, the narrow brown band between basal patch and median fascia less bright brown; median fascia as broad as in *subangulata*, at costa broader, its distal edge being more oblique outward anteriorly to the radial concavity, its form otherwise similar to that of *subangulata*, its paler central part broad, its dark boundaries slightly less reddish than in the allies; subterminal line somewhat interrupted, slightly more lunulate than in *mediovittaria*.—*Hindwing* similar to that of *mediovittaria*, but with the termen rather straighter between C and R², the fringe less tinged with yellowish, rather more mottled with grey opposite the veins.

Underside much like that of *subangulata*.

Tibet: Chumbi Valley, 4 ♂♂ in coll. Tring Museum, the type and another

bearing the more exact locality Dopenri. Also from Kashmir Valley, 7,000 feet, 1 ♂ in coll. L. B. Prout.

18. *Atopophysa indistincta proximifascia* subsp. n.

♀, 35–38 mm. On an average larger than the corresponding sex of *i. indistincta* Butl. (1889).—*Forewing* slightly less dusky; subbasal line (narrow band) strongly blackened, almost straight; markings on median area quite as weak as in the name-typical race, but with the boundary-lines tending to blacken at costa and especially at hindmargin, the antemedian at hindmargin oblique outward.—*Hindwing*, except in distal area, paler than in *i. indistincta*.

Assam: Khasia Hills, February 1896, 9 ♀♀ in coll. Tring Museum.

19. *Coenotephria championi* sp. n.

♂, 34 mm. Head and body dark fuscous sprinkled with white; the white more dominant beneath. Face with developed cone. Palpus over $1\frac{1}{2}$; deep fuscous (almost black), beneath whitish. Antenna with joints projecting, ciliation almost 1. Anal tuft whitish drab.

Forewing with margins little curved, termen markedly oblique; general coloration as in *Euphyia variegata* Moore (*Proc. Zool. Soc. Lond.*, 1867, p. 653), the median band being predominantly blackish (rather less sharply than in that species), the areas on either side of it suffused with olive-green (fading to yellowish); basal area as dark as median, its whitish boundary-line slightly indented at both folds; intermediate band broad but very vague; median band much as in *E. variegata*, but with its distal edge indented rather than incurved on R^2 , little lobed behind this, running inward rather strongly to M^1 , so that the anterior half of the band looks more markedly broader than the posterior than in that species; a similarly large cell-spot; subterminal and terminal lines also similar, but the former scarcely filled in with dark shading except between the radials.—*Hindwing* dark grey, with weak white-grey lines (subterminal and double postmedian) as in *E. variegata*.

Underside rather less brown than in *E. variegata* with rather less sharp contrasts, the whitish apical and midterminal spots of forewing being absent, the anterior band distally to the postmedian narrowed to a line; postmedian of both wings less strongly lobed behind middle.

India: Nainital, S.W. of Almora, at light, September 22, 1921 (H. G. Champion), type in coll. Oxford Museum.

20. *Eupithecia robiginascens* sp. n.

♂♀, 26–27 mm. Head and body above blackish fuscous, in places tinged with red-brown; beneath pale drab. Face with well-developed cone. Palpus rather short (little over 1), heavily scaled, 3rd joint quite short, concealed. Antennal ciliation in ♂ rather less than 1, in ♀ nearly $\frac{1}{2}$. Legs (especially fore-leg) darkened, with pale rings at ends of joints.

Forewing rather elongate, costa rather straight to well beyond middle, then gently curved; cinnamon (or, when quite fresh, inclining to tawny ochraceous), finely but densely irrorated with dark fuscous, except in the bands which bound the median area; cell-spot large, raised, long-oval, deep black; costal margin blackish fuscous, cut by a few pale dashes; blackish dashes on M and M^2 as

far as the postmedian, also on all the veins just proximally to the postmedian, elsewhere slighter; basal patch ill-defined, strongly angled outward in middle of cell, then strongly oblique inward; the cinnamon band beyond it narrow; median area over 4 mm. wide at costa, about 3.5 mm. at hindmargin, rippled with about 6 fine, ill-defined lines of dark irroration, the proximal ones parallel with subbasal, the distal angled about R^1 ; postmedian bounded by a faintly hoary line, which is oblique inward from costal (angled at SC^3), excurved at R^1 weak posteriorly; a fine dark line (obsolete posteriorly) separates this from the outer cinnamon or ochraceous band, which is rather broad at R^1 , then gradually tapers posteriorly; terminal area slightly darker than median; subterminal line in anterior half very fine, dentate, pale hoary greyish, posteriorly whiter, more lunulate, interrupted in cellule 2, conspicuous behind M^2 ; terminal line black, with slight hoary dots; fringe chequered.—*Hindwing* whitish drab anteriorly and apically, concolorous with forewing posteriorly; cell-dot moderate; M and M^2 dotted with blackish and whitish; postmedian vein-dashes, cinnamon outer band and whitish subterminal line developed in posterior part only, the band narrow; terminal line and fringe as on forewing.

Underside glossy pale drab; the veins with brownish dashes; cell-spots elongate; forewing (and hindwing more slightly) with black costal spots—subbasal, antemedian, postmedian, and one or two others in median area; the principal lines fairly well developed, except on forewing posteriorly.

Bhutan: Buxa (type in coll. Tring Museum); Sikkim; Khasia Hills; N.E. Burma,

21. *Chloroclystis* (*Gymnodisca*) *isophrica* sp. n.

σ^2 , 22 mm. Head and thorax pale olive; two black dots between antennae and another on crown. Palpus in σ over $2\frac{1}{2}$, in σ $3\frac{1}{2}$; marked with dark fuscous on outside. Abdomen above in σ reddish, with narrow blackish-fuscous belts at ends of segments; in σ more broadly blackish-fuscous.

Forewing pale olive-green, in places irrorated with blackish-fuscous; markings mostly blackish-fuscous; costa with spots or dashes; an extremely fine, curved subbasal line; a narrow, somewhat interrupted, straighter band between this and median band, widest anteriorly; median band about 4 mm. wide, formed of partly confluent, rippled lines, leaving interruptions of the ground-colour, especially in a longitudinal direction in and outside cell (rather recalling *C. ruptiscripta* Warr., 1903—" *Rhinoprora* "); cell-dot almost lost in the band; the very fine, rippled white lines which bound the median band very gently curved throughout, otherwise unusually regular (only approached in the group by those of *rubrifusa* Warr., 1895); subterminal line fine, lunulate-dentate, slightly interrupted, accompanied proximally by a brown-red band, which is only black mixed between costa and SC^3 and at its extreme proximal edge and distal inter-neural teeth; a fine black terminal line; fringe with triangular blackish spots, which project their apices across the terminal line on to the veins.—*Hindwing* pale glossy drab, with feeble indications of the markings of underside; terminal line and fringe-spots as on forewing but weaker.

Underside glossy drab, costal margins slightly spotted or clouded; forewing with darker, gently curved, distally pale-edged postmedian line, proximally to which the ground-colour is slightly darkened; hindwing with small dark cell-dot, curved (and at R^2 very bluntly bent) postmedian line, weaker median

just outside the cell-dot and indistinct praesubterminal shade; terminal line and fringe-spots present.

Central Dutch New Guinea: Mt. Goliath, 5,000-7,000 feet, January 1911 (A. S. Meek), 1 ♂, 1 ♀, in coll. Tring Museum.

22. *Chloroclystis (Gymnodisca) hypodela* sp. n.

♂, 21 mm. At first sight very similar to the preceding, the shape and general coloration of forewing being nearly the same; evidently in reality nearer to *viridescens* Warr. (1895). Chiefly distinguished from *isophrica* as follows:

Face with a longer cone. Palpus stouter; not dark-mixed on outside, Abdomen dorsally more irrorated with black.—*Forewing* with cell-dot large, conspicuous; median band more broken, strongest in costal and hindmarginal spots at its proximal and distal extremities; postmedian line and pale band beyond much less regular, forming, in particular, an outward projection behind R^3 , the pale band finely bisected; subterminal line much less deeply dentate, its red proximal band obsolete, replaced by dark patches at costa and radials, and a much smaller one on M^2 ; fringe-spots not extending on to the wing.—*Hindwing* and underside paler, more strongly marked (the markings beneath mostly brown), postmedian line of hindwing more angulated on R^3 .

Central Dutch New Guinea: Mt. Goliath, January and February 1911 (A. S. Meek), 2 ♂♂ in coll. Tring Museum.

23. *Chrysoclystis perornata morbosa* subsp. n.

♂♀, 26-28 mm. Smaller than *p. perornata* Warr. (1896), the general coloration decidedly paler, the parts which in the New Guinea race are deep brownish vinaceous becoming here cinnamon-buff, the buff parts correspondingly paler; the strongly bent outer line of the forewing is continued further proximad in cellule 6, almost meeting the inner line.

Penang: Waterfall Valley, March 14—April 18, 1898 (Curtis), type in coll. Tring Museum. Also from Padang Rengas, Malay Peninsula, in the same collection (noted by Warren, Nov. Zool. iv. 228, as the corresponding ♂ to his original ♀♀) and from Bidi, Sarawak (C. J. Brooks) in coll. Joicey.

24. *Heterophleps bicommata* (Warr.).

Dysethia bicommata Warr., *Proc. Zool. Soc. Lond.*, 1893, p. 348 t. 32, f. 1. (Sikkim).

Mr. Warren founded this on two species and both his generic and his specific diagnosis give generally the ♀ characters first. Nevertheless, the generic conception—like most of Warren's—was based on the ♂ structure, as is shown especially by his later erection of *Dysethiodes* (Nov. Zool. ii. 106) and is supported by Hampson's sectionizing (*Faun. Ind. Moths*, iii. 335). Moreover, his ♀ was a specimen of *ocypitaria* Swinh. (*Ann. Mag. Nat. Hist.* (6) xii 157), while his ♂ has never received any other specific name. This ♂, too, is the specimen figured; although the figure looks ♀, a comparison with the two originals shows, even to the damaged abdomen, that it was taken from the ♂. I have therefore had no hesitation whatever in making the ♂ the holotype and transferring the ostensible allotype to *ocypitaria*. Both are in poor condition. The Naga specimens which Mr. Elwes (*Proc. Zool. Soc. Lond.*, 1893, p. 349) took to be the same species are again different and are described below.

25. *Heterophleps acineta* sp. n.

♂, 32 mm. Very much like small *ocypitaria* Swinh., but belonging to a different section in that the ♂ antenna is not pectinate, but bears on each segment two pairs of fascicles of slender cilia, which except at the distal end of the antenna are long and arise from rudimentary processes. Palpus short and rather slender.

Forewing shaped about as in *ocypitaria*, the termen perhaps slightly more sinuous than in the ♂ of that species; coloration the same; costal spots smaller and browner (less blackened); lines equally fine, antemedian fully as oblique to SM², postmedian much straighter, scarcely at all sinuous, reaching hindmargin near tornus.—*Hindwing* with costa rather less long than in *ocypitaria*, angles rather more rounded; abdominal area beneath less clothed with hair.

Assam: Naga Hills, 5,500–7,000 feet, August–October 1889 (W. Doherty), 2 ♂♂ in coll. Tring Museum.

Agrees with *bicommata* Warr. (*vide supra*) in the antennal structure, but that species is longer-winged, with larger and darker cell-spot and costal patches, much less oblique antemedian line, sinuous postmedian, lighter and more sharply marked hindwing, etc. I have made the first comparison with the less closely related *ocypitaria* as being the better-known species and, moreover, occurring also in the Nagas.

26. *Syzeuxis* (?) *tesselifimbria* sp. n.

♀, 46 mm. At first glance suggestive of an overgrown *trinotaria* Moore, and so determined by Elwes (with query), Hampson (*Faun. Ind., Moths*, iii, 339), and Warren. Distinct in a considerable number of points. Palpus less long-scaled above.—*Forewing* with termen more regularly curved; a small proximal areole present; colour appreciably greener; costal edge less sharply marked with black and white; the two principal costal spots less triangular, more elongate, the first lines which run from them more excurved in cell and at radials, partly marked with darker brown; a small brown subterminal spot between R¹ and R²; fringe in proximal half continuously olive-grey, in distal pure white, dark-spotted opposite the veins.—*Hindwing* more elongate than in *trinotaria*; discocellulars biangulate; cell-dot present above; outer line fairly strong, curved rather than bent in middle; fringe without the blackish patches.—Underside with the postmedian line of forewing reaching hindmargin; fringes as above.

Sikkim: Tonglo, 10,000 feet, July 1886 (H. J. Elwes), type in coll. Tring Museum.

Should probably form a separate genus, but, as the areole certainly varies in the group,¹ it can remain here pending systematic revision.

27. *Syzeuxis magnidica* sp. n.

"*Aphantoloba nigrinotata* ♀" Warr., *Nor. Zool.*, iii, 117 (1896) (nec ♂).

♂, 22–26 mm.; ♀, 25–30 mm. Less small than *nigrinotata* Warr.—*Forewing* with SC¹ well away from C (in *nigrinotata* touching or anastomosing slightly); ground-colour more uniformly buff, less mixed with whitish, the irroration more strigiform; costal spots larger, the antemedian developed into

¹ In *Cryptoloba minor* Warr. (figured by Hampson, *Faun. Ind., Moths*, iii, 336, fig. 166, as *aerata*) the areole is double; in the closely allied *aerata* Moore it is single.

a half-band, always crossing M, generally reaching or crossing M², the shadowy brown antemedian line (band) behind it obsolete; postmedian crossing R¹, often almost reaching R², the shadowy band behind it straight and grey, not sinuous and brown, ending in a dark-fuscous dot on hindmargin.—*Hindwing* with C less closely approximated to cell than in *nigrinotata*; ground-colour rather less white; postmedian band not reaching costa; fringe infuscated between tornus and M¹.—Underside also less whitish, the cell of the forewing with heavy smoky suffusion.

Assam: Khasia Hills, 2 ♂♂, 3 ♀♀, in coll. Tring Museum.

Warren had only his "♂ type" to represent *nigrinotata*, but mixed with it examples of the present species and of the following. The only other specimen of *nigrinotata* yet known to me is a ♂ from Loeboe Rajah, Sumatra, April–May 1897 (Ericsson), possibly a separable race.

28. *Syzeuxis seminanis* sp. n.

♂, 19–20 mm. In appearance intermediate between *nigrinotata* Warr. and *magnidica* Prout (supra), but differing from both in the presence of a small areole in the forewing.—*Forewing* less whitish-mixed than in *nigrinotata*, the irroration similarly fine, the bands similarly brownish, but rather finer and only a little sinuous, the postmedian at hindmargin with a few dark scales on each side; antemedian costal triangle shorter than in either of the closest allies, more as in *trinotaria* Moore; postmedian triangle narrow, but rather long, just crossing R¹; cell-dot wanting.—*Hindwing* coloured almost as in *magnidica*; cell-dot weaker; postmedian band reduced to a thick line, nearer to termen than to cell, reaching costa.—*Underside* coloured as in *magnidica*, on both wings with the postmedian thin; smoky suffusion in cell scarcely so strong as in *magnidica*.

Assam: Khasia Hills, March 1894 (type) and April 1894 (paratype), in coll. Tring Museum.

The presence of an areole in this species (though proportionally smaller than that of *trinotaria*) suggests that Hampson (*Journ. Bomb. Nat. Hist. Soc.* xii, 75) was right in sinking *Aphantoloba* to *Syzeuxis*, though he was seriously wrong in making *nigrinotata* a form of *trinotaria*.

29. *Dyspteris crispisulcans* sp. n.

♂, 35–38 mm.; ♀, 38–42 mm. Head green. Palpus in ♂ 1½, in ♀ 2, 2nd joint above and beneath with rather long-projecting hair-scales. Antenna in ♂ with the pectinations rather short, in ♀ with the projections beneath not deep. Thorax and abdomen green, the latter with narrow whitish belts at ends of segments. Fore- and midlegs blackish on upperside.

Forewing moderately broad, though less so than in *breviataria* Hb. (*Zutr.* i, 29), the tornus being less square; bluish green, in places mixed with white, which becomes the predominant tone in the median area, except towards costa; a small white cell-spot; lines deeper green, edged with white on their reverse sides; antemedian acutely angled outward in cell, thickened at the angle so as to touch cell-spots; postmedian markedly irregular, rather sharply dentate outward on the veins, incurved between the radials and more slightly behind middle, anteriorly slightly more oblique than termen; subterminal line white,

irregularly dentate; conspicuous white vein-spots between this and termen; fringe green proximally, white distally.—*Hindwing* in both sexes narrow, the apex slightly more rounded than in *breviataria*; DC in ♀ biangulate; first line wanting; the rest nearly as on forewing.

Underside similar; median area of forewing less white; white markings of hindwing more or less widened.

E. Peru: Huancabamba, Cerro de Pasco (E. Boettger), type and another ♂; Cushi, Prov. Huanuco, 1,900 m. (W. Hoffmanns), 1 ♂, 1 ♀. S.E. Peru: Chirimayo, 1,000 feet, July 1901 (G. Ockenden), 1 ♀. All in coll. Tring Museum.

30. *Trichopterigia sphenorrhyma* sp. n.

♀, 39 mm. Face whitish. Palpus 1 $\frac{3}{4}$; 2nd joint blackened on outside. Vertex whitish, with some black scales in centre. Thorax and abdomen whitish, irrorated and spotted with black, the abdomen dorsally with longitudinal black marks, subdorsally with some darkening at ends of segments.

Forewing white, irregularly irrorated with pale brownish buff (perhaps more olive-buff in bred specimens), the basal area more deeply soiled with this colour; markings black; a small cell-mark; subbasal line sharp, very oblique outward to an acute tooth on SC, thence nearly vertical to hindmargin but with a tooth outward at M and a faint inward curve behind it; two ill-defined (only in part black-irrorated) lines between this and median area, gently excurved anteriorly, the outer one strengthened with short wedges on the veins; antemedian line from about $\frac{2}{5}$ costa to middle of hindmargin, lunulate-dentate and double from costa to base of M², thence single, thicker, dentate, the tooth inward at fold rather long, the outward tooth on SM² deeper black; postmedian fine, from $\frac{5}{11}$ costa, vertical to C or SC, excurved outside cell-dot, with a blacker mark about DC¹, than more blurred by accompanying black irroration, posteriorly becoming again deep black, with an angle inward at SM², then very oblique outward to hindmargin; indications of a duplicating line outside the postmedian, then a characteristic series of dashes or wedges on the veins; proximal subterminal interrupted, notably in cellule 6, most distinct as a streak from costa to SC⁵ and some marks between the radials, in both these places irregularly duplicated distally; a faint brownish-grey shade close to termen (strongest anteriorly), crossed by fine black dashes on the veins; termen with paired black dots at the veins; fringe white, marked, especially opposite the veins, with blackish.—*Hindwing* white, but thinly scaled, the distal half with some brown-grey irroration, which tends to form a rather distally placed postmedian line (strongest on veins) and still weaker subterminal shades; terminal dots weaker than on forewing.

Forewing beneath more smoky, indefinitely marked; a white band proximally to the subterminal shades. Hindwing more nearly as above or slightly cleaner white.

Kashmir Valley, 7,000 feet, June 1903 (Col. Ward). Type in coll. Tring Museum, paratype in coll. L. B. Prout.

31. *Pachrophylla aorops* sp. n.

♂, 31–33 mm. Face with rough projecting hair-scales. Palpus 2, 2nd joint heavily scaled above and beneath, 3rd joint small, concealed. Antenna

pubescent. THORAX with slight posterior crests. Abdomen slender, slightly elongate. Head and body concolorous with wings; foreleg above banded, blackish and pale.

Wings not narrowed, being slightly broader than in the group of *minor* Butl. (1882).—*Forewing* with costa markedly shouldered at base, then straightish almost to apex, apex squared, termen bowed, scarcely oblique anteriorly, moderately so posteriorly; brown, closely irrorated in different shades, the prevailing impression being of Verona brown, clouded—especially in median area—with dark grey; costal margin, especially in median area, somewhat paler, cut by dark dashes; a small but slightly elongate dark cell-mark, set in an elongate, narrow pale ocellus, which extends for the length of DC^{2+3} and is continued narrowly on DC^4 ; slighter pale vein-dots elsewhere; dark markings scarcely developed; a thick, outwardly oblique subbasal indicated from costa to M; boundaries of the median area still more vague, the postmedian rendered more traceable by indications of a duplicated interrupted pale line beyond, which is more or less incurved at the radials and at fold; subterminal line distinct, whitish, consisting of interneural dashes or shallow lunules accompanied by slight dark shading; termen with paired blackish dots; fringe rather pale distally.—*Hindwing* with the lobe reaching to slightly beyond middle of abdominal margin, divided from the rest of the wing by a small rounded bay much as in *minor*; C anastomosing with SC to near end of cell, SC^2 rather long-stalked, DC^2 oblique and somewhat incurved, considerably longer than DC^1 , an appreciable angle at origin of R^2 , M^1 widely separate, M^2 wanting; light drab, somewhat whiter at base and costally.

Underside glossy drab, the hindwing a little lighter.

Chili (V. Izquierdo), type in coll. L. B. Prout; (W. B. Calvert) a worn ♂ in coll. Tring Museum; Mulehen, January 1902 (H. J. Elwes), a ♂ in coll. British Museum.

Differs from true *Pachrophylla* in having C of hindwing anastomosing instead of connected with SC.

32. *Hoplosauris analogica* sp. n.

♂, 37 mm. Face whitish, narrowly mixed above with black, lower extremity wholly black. Palpus $1\frac{1}{4}$, with very small terminal joint; 2nd joint blackened on outside. Head and body predominantly drab, the head and front of thorax mixed with grey; thorax with rather strong dark posterior crest; abdomen slender and rather elongate, rather pale beneath.

Forewing elongate but rather broad, the termen being long, obliquely curved, apex fairly sharp; light brown, somewhat variegated, most tinged with cinnamon-drab or fawn in median area and with a slight flush in the pale area beyond; a conspicuous black streak from apex to the subterminal line at R^1 , constricted at apex and in middle, rather more steep than the streak of typical *Anaitis*; pattern consisting of a large number (about 16) of somewhat sinuous dark-brown lines, a few of them—notably two at proximal side of median area and the middle two of the four at its distal side—fused into extremely narrow bands; subbasal line from costa at 4 mm. to hindmargin at nearly 3, slightly incurved in cell, indented on M; median band about 6 mm. wide at costa, 3.5 mm. at hindmargin, its distal side only very feebly outbent near costa and behind R^2 ; subterminal whitish line and the dark ones proximal to it somewhat more

lunulate, rather irregular, the proximal two rather strong, filled up between the radials so as to suggest the common "twin spots" of the *Larentiinae*; terminal line blackish, at intervals curving inward so as to enclose pale terminal spots; fringe with a pale basal line and pale tips, a thick dark central line intervening. — *Hindwing* quite small, but relatively elongate; cell little over $\frac{1}{4}$, DC almost vertical; C rather widely separate from SC, the usual connecting bar obsolete or quite slender, rather proximal, SC² long-stalked, R² central, M¹ stalked, M² wanting; abdominal margin with basal lobe vestigial; dirty white, slightly more drab distally.

Forewing beneath glossy drab, with indications of the median band, especially its distal edge. Hindwing dirty whitish.

Patagonia: Valley del Lago Blanco, Chubut (Thursby), type in coll. Tring Museum, together with a second ♂ and a ♀ with the median band rather more darkened. The ♀ with C of the hindwing anastomosing, DC biangulate, M¹ separate.

The shape and pattern of the forewing superficially recall an *Anaitis*. Butler's worn type of *heliconoides* (1882) seems so similar, except in its much paler colour, that, allowance being made for the great variability of many Chilean species, I would have treated this as an aberration or local modification but for the appreciably shorter palpus and the stalking of M¹ of the ♂ hindwing.

33. *Graphidipus clavistigma* sp. n.

♂, 37–39 mm. Smaller than *graphidiparia* Oberth. (1883); body and wings darker, approaching the coloration of *subpisciata* Dogn. (1903); collar, as in the latter, orange.

Forewing with the black costal spots rather regular; antemedian band blurred, but nearly uniform in development throughout, not (as in *graphidiparia*) thickened and strengthened anteriorly; median shade single, or only faintly duplicated proximally, passing quite near the cell-mark, curved rather than angled about R¹; the double postmedian line less macular than in *graphidiparia*; a thick mark on fold in median area, recalling the claviform stigma of the Noctuids. — *Hindwing* rather more noticeably produced at tornus than in the allies; thinly scaled, less pure white than in *graphidiparia*, the border narrowly smoky, extending somewhat inward on the veins; obscurely darker terminal vein-spots, extending on to proximal part of fringe.

E. Bolivia: Buenavista, July–October 1906 (J. Steinbach), 5 ♂♂ in coll. Tring Museum.

34. *Graphidipus mediata* sp. n.

♂♀, 38–41 mm. Intermediate in colour between *clavistigma* (supra) and *graphidiparia*. Collar pale.

Forewing with a drab tinge; costal maculation nearly as in *graphidiparia*; markings linear rather than macular, mostly thin and rather indistinct, the antemedian band and median line much as in *clavistigma*; median mark on fold not developed. — *Hindwing* in ♂ intermediate between those of the species named; in ♀ more smoky, with the dark border broadened.

Ecuador: Quito (W. Goodfellow), 3 ♂♂ in coll. Tring Museum.

35. *Graphidipus alternans* sp. n.

♂, 40 mm. Close to *pisciata* Guen. (1858), from Brazil, perhaps a race.—*Forewing* with the ground-colour slightly darker and more slaty; black wedge-spots on veins as strong as in *pisciata*; the intermediate areas (between basal spots and first band, on each side of median area and in costal half between median and postmedian) strongly spotted with orange at veins and costa; first band (between basal and median areas) broader than in *pisciata*; the curved median line only developed between costa and M.—*Hindwing* also slightly darker and more slaty than in *pisciata*.

E. Peru: Huancabamba, Cerro de Pasco (E. Boettger), type in coll. Tring Museum.

36. *Graphidipus subpisciata flavirivulata* subsp. n.

♂. *Forewing* rather darker than in *s. subpisciata* Dogn. (1903), from Bolivia, the pale parts more tinged with orange.—*Hindwing* considerably darker than in that race.

Argentina: Tucuman (type and others); Salta (J. Steinbach); La Rioja (E. Giacomelli). Type in coll. Tring Museum.

I have adopted a manuscript name of Warren's for this race.

37. *Crocypus perlucidaria macroleuca* subsp. n.

♂♀. *Forewing* in proximal part less white-mixed than in *p. perlucidaria* H.-Sch. (1855), almost concolorous with the distal part; the white subapical band broader and longer, extending from the costa (though usually leaving the extreme costal edges black) to about 1 mm. from termen.—*Hindwing* with the proximal part similarly less white-mixed.

Costa Rica to Panama, the type from Sitio, Costa Rica, June (W. Schaus) in coll. Tring Museum.

38. *Steirophora acrolophites* sp. n.

♂, 40 mm. Head olive-greenish. Palpus 1 $\frac{2}{3}$, 1st and 2nd joints slightly dark-marked on outside, the 2nd with projecting scales above, 3rd joint elongate. Thorax above olive-greenish, the posterior crests blackened; abdomen, body beneath and legs browner and paler. Foretibia and tarsus darkened, with pale segmental rings; mid- and hindtibia with the spurs present, though minute; a very long and strong pencil from femoro-tibial joint; basal abdominal plate ample.

Forewing rather pale green, copiously marked with dusky brown; basal area spotted and bordered (more broadly anteriorly than posteriorly) with this colour, edged by a whitish-green line which is angled outward in base of cell; succeeding area rippled with darker and lighter lines, the former (especially at costa and about the veins) mixed with dusky brown; median band just over 7 mm. wide at costa, 4 mm. at hindmargin, somewhat rippled with ground-colour, bordered by crenulate white-mixed lines, the antemedian very gently curved, the postmedian gently incurved between costa and R¹, where it projects slightly, thence approximately parallel with termen, only slightly curved near hindmargin; an ill-defined anterior patch of the ground-colour in centre of band,

broadest in middle ; a crescentic black cell-mark at distal edge of pale patch, constricted or almost interrupted in middle ; distal area with irregular, partly interrupted lines of brown and green, the brown strengthened proximally to the subterminal line, especially in a quadrate radial blotch ; subterminal line white-mixed, somewhat excurved between SC^2 and R^2 , slightly lunulate-dentate behind, running to tornus ; a rather dark admixture outside it between the radials ; terminal dark vein-spots rather large ; fringe weakly chequered.—*Hindwing* light drab, decidedly tinged with cinnamon ; an indistinct pale curved post-median line or narrow band, still less clearly defined distally than proximally.

Both wings beneath more nearly as hindwing above, but warmer in colour, more approaching tawny-olive, the forewing in addition with distinct traces of the markings of the upperside and with the costal edge on proximal half alternately pale and dark in short streaks.

Java : Gedeh, 7,500 feet, 25 June 1910 (E. A. Cockayne), type in coll. L. B. Prout, kindly presented by the discoverer.

Near *punctatissima* Warr. (1897), from Celebes ; termen of forewing not quite so straight and oblique, antemedian line less direct, spurs of hindtibia not so completely atrophied, etc.

39. *Megaloba melanconia* sp. n.

♂, 34 mm. Head and body green, the body beneath pale. Palpus over 3, the exposed terminal joint about half as long as diameter of eye. Hindtibia rather more swollen than in typical *Megaloba*.

Forewing with termen rather more oblique posteriorly than in typical *Megaloba*, tornus more rounded ; prevailing tone glossy yellowish olive, the markings formed of condensed black irroration, in places with an admixture of red ; the pale bands bounding the median area more glossy, mostly olive-yellow, in places suffused with the more olive shade ; basal patch ill-defined, marked with red at hindmargin ; a narrow, somewhat sinuous band between this and median fascia, strongest between cell and SM^2 ; median fascia about 6 mm. wide at costa, 3 mm. at hindmargin, relieved with the ground-colour anteriorly and round the rather elongate black cell-mark, its proximal edge moderately sinuous, its distal very gently curved—outward in anterior part and inward in posterior ; some ill-defined dark markings on the narrow praesubterminal band, especially in cellules 7, 5, and 4 ; subterminal line weakly defined distally by some interneural olive lunules, the terminal area mostly as pale as the subterminal ; dark marks at termen in the form of flattened V's, their apices on the extremities of the veins (fringe mostly wanting).—*Hindwing* nacreous white-grey, feebly dark-shaded at the borders ; the proximal fold of the lobe blackish on upperside ; a large oval blackish patch of specialised sealing, proximally entering the cell (but narrowing), anteriorly crossing the stalk of SC^2-R^1 , distally about 2 mm. from the termen, posteriorly reaching R^2 .

Underside glossy greyish, the forewing with an elongate pear-shaped patch of black-brown, densely packed androconial sealing behind and just entering the cell, obviously correlated with the blackish patch of hindwing above ; ground-colour whiter around this patch.

British New Guinea : Hydrographer Mountains, 2,500 feet, May 1916 (Eichhorn Bros.), type in coll. Tring Museum.

40. *Asthena aurantiaca* sp. n.

♂, 27 mm. In shape and structure akin to *argentipuncta* Warr. (1906). Head and body orange, body beneath and at anal tuft paler; abdomen with the dorsal spots tinged with grey, but quite inconspicuous, not metallic.

Forewing with the pale yellow ground-colour almost entirely obscured by band-like orange-buff clouding, only remaining visible in a series of about 7 irregular lines; the proximal 3 only slightly wavy; the 4th (apparently bounding proximally the rather narrow median area) rather more inbent anteriorly and posteriorly; indications of additional lines or spots in median area; 5th line (postmedian) highly sinuous, being markedly incurved between the radials and still more deeply inbent between M^1 and SM^2 ; the 6th approximately parallel with the 5th, but more dentate and interrupted; the subterminal more weakly lunulate-dentate, close to termen at SM^2 and at M^1 , slightly receding between them and again anteriorly; only a few scattered silvery scales; fringe yellow, mixed with orange.—*Hindwing* concolorous; antemedian line rather thick, angled outward at M; postmedian at least as zigzag as on forewing, more proximal; outer lines rather interrupted and indefinite.

Underside duller, more weakly marked with orange, especially so the hindwing.

Central Dutch New Guinea: Mount Goliath, about 139° longitude, 5,000–7,000 feet, February 1911. type ♂ in coll. Tring Museum.

41. *Bihastina mera* sp. n.

♂♀, 20–23 mm. Quite near the other species (*albolucens* Prout 1916, *subviridata* B.-Bak. 1915, and *viridata* Warr. 1906). Upper part of face less olive than in *albolucens* and *viridata*, purer red-brown. Thorax and abdomen white, only quite weakly dotted and spotted above with olive-grey.

Forewing fully as short and broad as in *viridata*, termen from apex to R^1 even less oblique, excision between the radials shallower; purer white than in *albolucens*, the markings similarly olive-grey; some dark spots or longitudinal dashes on costa; a weak subbasal line; a stronger, thicker line at about $\frac{1}{4}$, excurved to base of M^2 , and slightly exangled at SM^2 ; a weaker duplicating line proximally; some slight irroration in proximal area; a narrow band just beyond middle, rather better defined than that of the allies, but traversed by white dots and more or less interrupted in cellule 2; the white bands on either side of it broad and clean, the distal unmarked, the proximal with an excessively fine intersecting line, which is angled outward at SM^2 so as to join the median band; subterminal and terminal markings much as in *albolucens*; fringe white, only very feebly mottled.—*Hindwing* with the terminal tooth less extremely long than in the allies; proximal part clean white; median band continued in middle of wing, consisting posteriorly of three lines (only the proximal one strong), which anteriorly fuse together, more or less; subterminal and terminal markings much as in *albolucens*, but rather stronger.

Underside white, with the principal markings more or less strongly reproduced, often weakening posteriorly.

British New Guinea: Hydrographer Mountains, 2,500 feet, April–May 1918 (Eichhorn Bros.), 4 ♂♂, 2 ♀♀, in coll. Tring Museum.

42. *Poecilasthena limnaea* sp. n.

♂♀, 23–26 mm. Related to *thalassias* Meyr. (1891).—*Forewing* whiter, the lines olive-grey, not green, all more or less strengthened at costa, in part dark-dotted on the veins; postmedian group rather sharply angled outward in front of R^1 ; fringe clouded with olive-grey, with rather large clean white interneural spots in proximal part.—*Hindwing* with termen appreciably more crenulate than in *thalassias*, the tooth at R^3 longer; coloration as on forewing; postmedian (median) group of lines appreciably angled outward about R^1 and between R^1 and M^1 .

Dutch New Guinea: Mount Goliath, about 139° longitude, 5,000–7,000 feet (A. S. Meek), 2 ♂♂, 2 ♀♀ in coll. Tring Museum; Mt. Kunupi, Weyland Mountains, 6,000 feet (Pratt Bros.), a larger form in coll. Joicey.

43. *Asthenotricha tripogonias* sp. n.

♂, 34 mm. Antenna simple. Head and body light brown, mixed with red; abdomen irrorated with black, a white dorsal mark at end of each segment.

Forewing with termen slightly waved; long dense masses of suberect red hair from costa, overhanging cell above and beneath; pale wood-brown, beyond the postmedian scarcely, proximally thereto densely, irrorated with red; postmedian at about $\frac{2}{3}$, crenulate, gently curved, rather less oblique than termen; distal area with minute grey dashes on veins; terminal line red; fringe dark grey, with a pale line at base.—*Hindwing* with termen subcrenulate; the hair-pencil rather large, red; postmedian line nearly central, darker grey posteriorly; the red flush chiefly behind cell, but continued appreciably to termen; distal area and fringe as on forewing.

Underside, excepting the posterior part of forewing, heavily irrorated with black, the proximal area still more heavily than the distal.

Réunion, May 28, 1922 (G. F. Leigh), type in coll. Tring Museum.

A most striking species, on account of the additional hair-tufts. 3 ♀♀ which probably belong to it (April 25, April 30, and May 28, 1922, G. F. Leigh) are darker and more uniformly rufous, with black irroration, more conspicuous black cell-dots above and beneath, a bent antemedian line, traces of other lines proximally, the postmedian triple; veins distally more strongly light- and dark-dotted than in the ♂.

SUBFAM. GEOMETRINAE

44. *Cosmethis teleleuca* sp. n.

♂, 42 mm.; ♀, 46–48 mm. Head and thorax, with 1st segment of abdomen, blackish; abdomen otherwise cadmium yellow, the extreme tip in ♂ mixed with black-grey.

Forewing with costal margin in ♂ markedly convex opposite outer part of cell, then faintly concave for a short distance, the upperside between the convexity and the cell and distally for some distance clothed with coarse hair, the underside from the concavity to near apex fringed costally with closely-laid hair; in ♀ only a little sinuous; SC^{1-2} coincident and (as usual in the group) nearer to SC^1 than to C, sometimes connected with the former between SC^2 and SC^1 by a short bar; dark neutral grey, heavily clouded with black, in the darkest examples almost unicolorous, in the less dark showing a lightening of

the veins, of parts of the proximal area and of a narrow band edging the postmedian distally; cell-spot rather large, round, deep-black; lines black, the subbasal acutely angled in cell, the antemedian rather less acutely, the postmedian excurved a little beyond the cell-spot, gently incurved posteriorly; a roundish white subapical spot between SC^2 and R^2 , slightly flattened at its posterior side, distally only about 1.5–2.5 mm. from termen.—*Hindwing* with termen slightly prominent at SC^2 , not convex (but slightly sinuous) to R^2 , then more rounded; concolorous with forewing the paler specimens showing a thin antemedian and thicker, more sinuous postmedian, the latter accompanied distally by a pale band; in addition, a vague series of blackish spots beyond, separated by the paler veins and edged distally by a somewhat dentate grey line, proximally by a finer, less dentate one.

Underside blackish, with only the subapical white spot of forewing present.

New Britain: Talasea (A. F. Eichhorn), 3 ♂♂, 2 ♀♀; also 1 ♂ from New Ireland. All in Coll. Tring Museum.

45. *Craspedosis gyroleuca brachytona* subsp. n.

♂♀. *Forewing* with the oval white patch reduced, anteriorly not crossing R^1 , posteriorly as a rule terminating at M^2 , occasionally with a very short and narrow extension behind that vein, in any case not reaching nearly to the fold.—*Hindwing* also with the white patch slightly reduced, separated from the abdominal margin by a broader and more solid black area.

New Britain: Talasea, January–April 1925 (A. F. Eichhorn), 14 ♂♂, 4 ♀♀. Type in coll. Tring Museum.

46. *Buzura recursaria deprunescens* subsp. n.

♂, 68–74 mm. Abdomen rather whiter than in *r. recursaria* Walk., from India.—*Forewing* with ground-colour much whiter than in *r. recursaria*, almost without brown suffusion, the warm brown basal and subapical-costal patches in consequence much more sharply differentiated; antemedian line rather more oblique inward from costal margin and again from SM^2 to hindmargin; postmedian (except costally and at hindmargin) and subterminal very weakly expressed.—*Hindwing* with cell-spot smaller than in *r. recursaria*.—Underside with only the (sharply blackish) cell-spots, the (small) subapical spot and slight costal commencement of postmedian line of forewing present.

British New Guinea: Kumusi River, low elevation, May 1907 (type). Dutch New Guinea: Ninay Valley, Central Arfak Mountains, 3,500 feet, November 1908–January 1909, 1 ♂. Both in coll. Tring Museum.

47. *Xandrames cnecozona* sp. n.

♂, 74 mm. Near *latiferaria* Walk. (*List. Lep. Ins.* xxi, 445). *Forewing* with the median shade rather broader; the outer pale band more tinged with brown, with a dark spot in its proximal part on R^2 .—*Hindwing* slightly more elongate in middle, the termen being more strongly rounded; the white subterminal line anteriorly a little farther from termen, the terminal space beyond it—especially in anterior half—rather lighter and more ochreous brown.

Underside very distinct from that of *latiferaria* in that the white band is replaced by a buff-yellow one, as bright as in *albofasciata* Moore (*Proc. Zool.*

Soc. Lond., 1867, p. 635, t. xxxii, f. 5) and continued narrowly at termen of hindwing—anteriorly circ. 4 mm. wide and clean, posteriorly to R¹ rather narrower and much blurred with the ground-colour.

Borneo: Kina Balu (J. Waterstradt), 1 ♂ in coll. Tring Museum.

Possibly a race of *latiferaria*, though the antennal pectinations look scarcely so long.

48. *Ectropis repleta* sp. n.

♀, 32–34 mm. Close to *duplexa* Moore, 1888 (Nepal to N. Burma).—*Forewing* more densely irrorated with black, which in the median area tends to condense into a longitudinal streak in front of M; no enlarged costal spots at origin of lines; antemedian line sharply expressed, regularly and rather strongly curved, the dark shade which in *duplexa* generally accompanies it proximally reduced to a single spot between M and fold; postmedian rather less deeply incurved behind R³ than in *duplexa*, the dark shading beyond mostly suppressed, on the other hand forming between R³ and M¹ a conspicuous blackish spot which reaches the subterminal; subterminal and its proximal dark shading well developed, also with small distal spots between the radials, these, however, not extending to termen as in *duplexa*.—*Hindwing* with termen slightly more crenulate than in *duplexa*; irroration, except at costal margin, much stronger; a subconcave median shade developed in posterior half of wing, somewhat recalling that of *ochrifasciata* Moore.

Underside greyer than in *duplexa*, more strongly marked, at least on hindwing, where the median line is complete.

N.W. India: Murree, type in coll. British Museum (ex Harford coll.), paratype, 7,500 feet, June 1918 in coll. Agric. Res. Inst. Pusa (ex Dutt coll.); Dalhousie, in coll. British Museum (ex Harford coll.); Simla, July 1909, in coll. L. B. Prout (per favour of Prof. T. B. Fletcher).

49. *Cleora polymiges* sp. n.

♂, 27–32 mm.; ♀, 33 mm. Face with appressed scales; blackish fuscous. Palpus fully 1½; 2nd joint with dense appressed scaling, 3rd joint minute; blackish fuscous, paler at tip and in a stripe on innerside. Tongue short and extremely slender. Antenna in both sexes bipectinate nearly to apex, the branches in the ♂ very long, in the ♀ about 3. Head and body concolorous with wings, fillet paler. Hindtibia not dilated, the spurs long.

Forewing rather broad, costa arched near base and distally, apex rounded, termen nearly smooth, little oblique and little curved anteriorly, much more so in posterior half; SC¹⁻² stalked, their stalk connected or anastomosing at a point with C, R¹ well separate, R² rather before middle, M¹ well separate; fovea in ♂ rather strong; ground-colour pale, almost entirely clouded with olive (sometimes rather greyer) and pale cinnamon-rufous or vinaceous-rufous, the rufous shades appearing chiefly along the principal veins, about the middle of R¹ and between R³ and M² as far as the postmedian, but not sharply defined nor very constant; irroration blackish; a black hindmarginal spot close to base; cell-mark elongate, but weak or obsolescent; lines black, lunulate-dentate; antemedian rarely well defined, strongly excurved anteriorly, then oblique inward, almost touching fovea; an ill-defined shade or duplicating line proximally to

it; median rather thick and about vertical from midcosta, weaker and sharply outbent between the radials, then oblique inward; postmedian finer and stronger, less strongly outbent at radials than the median, further from the latter anteriorly than posteriorly, behind M^2 slightly incurved; subterminal formed of small white or whitish teeth, rather irregularly developed, proximally filled-in with dark dots, the tooth in cellule 3 replaced by a small but fairly conspicuous white spot; terminal black spots fairly strong, somewhat elongate; fringe with blackish dots opposite the veins.—*Hindwing* rather ample, apex well expressed, termen rather full, strongly rounded, slightly waved; concolorous with forewing, markings similar, the cell-mark rather larger, the median proximal to it, slender, the subterminal generally rather more uniform.

Forewing beneath drab-grey, inclining to ecru-drab or with a tinge of vinaceous; costal edge buff, with dark dots: black spots at origin of median and postmedian lines; these (especially the median) more direct than above, the median sometimes weak; a pale line outside the postmedian; antemedian obsolete, subterminal faint; terminal spots and fringe nearly as above. *Hindwing* slightly paler, with cell-dot and lines well developed (more or less); the postmedian generally rather thick, more distal than above.

The single ♀ is rubbed, especially on forewing, but evidently much darker, the olive being replaced by dark slate-grey.

Madagascar: Diego Suarez, March, April, July, August, September 9 a short series, the type dated July 24. In coll. Tring Museum, collected by G. Melou.

This seems to be a third species of the group of *proëmia* Prout (1917) and *euplates* Prout (1925), nearer to the latter in shape, but with the rounded apex of the forewing giving it an even stumper appearance. The termen "suberect" (Hampson, *Faun. Ind. Moths*, iii, 144) and the mottled wings rather recall *Grophos*, "*Hypochrosis*" *suffusata* Pagenst. (Voeltzkow's *Reise*, ii (2), 64, t. ix, f. 7) may be related.

50. *Medasina firmilinea* sp. n.

♂ 52-56 mm.; ♀, 54-61 mm. Near *mucidaria* Walk. (1866), perhaps a form, though intermediates are not yet known. Ground-colour slightly paler or less brown, mixed with whitish, less coarsely irrorated.—*Forewing* with cell-spot narrower or less diffused; lines stronger; postmedian not or hardly incurved between M^2 and SM^2 ; median shade straighter behind the anterior angle, in general less approximated to the antemedian.—*Hindwing* with the postmedian line similarly strengthened.—Underside with the lines also present, the dark subterminal band (variable in *mucidaria*) always strongly developed on both wings.

Assam: Shillong, September-November 1893, 5 ♂♂, 3 ♀♀ in coll. Tring Museum, the type dated November; also a ♂ from the same locality, October 7, 1924 (T. B. Fletcher), in coll. Agric. Res. Inst., Pusa.

51. *Semiothisa khasiana vehemens* subsp. n.

♂. Ground-colour above warmer than in *k. khasiana* Moore (1888), from N. India, more as in *elvirata* Guen.; distal area clouded with more or less deep violet-grey, also much as in the latter species; double postmedian line of hind-

wing rather less curved, consequently reaching abdominal margin rather nearer to tornus. Underside yellow ochre, clouded with ochraceous orange, as in *elvirata*; distal cloudings more blackish than in that species, variable in strength.

Perak: Jor Camp, 2,000 feet, at light, August 24, 1922 (E. Seimund), type in coll. British Museum, presented by the Federated Malay States Museum. Mount Tahan, Malay Peninsula, 1 ♂ in coll. Tring Museum. Sumatra: Lebong Tandai, Benkoelen (C. J. Brooks), 1 ♂ in coll. Joicey.

The less crenulate hindwing, without prominent tooth at SC², as well as the development of the characteristic white spots of the forewing above and beneath, shows that this is not a race of *elvirata*, with which its colouring would have associated it, but of *khassiana*.

52. *Nadagarodes subpulchrata* Warr. and *purpuraria* Warr.

The genus *Nadagarodes*, so common on New Guinea and its satellite islands, seems to have reached on the Solomons its extreme limit of distribution and to maintain itself with difficulty. At any rate the two indigenous species are at present very rare; indeed, the fine Meek collections from the group have produced only six specimens in all. As Mr. Warren failed to get a grasp of them, some rectification is necessary.

The smaller species (42–45 mm.) evidently represents *duplicipuncta* Warr. (1899), though I do not think it will prove a mere subspecies. It can be distinguished at a glance, apart from its size, by its crenulate and curved postmedian line. In the large species (54–56 mm.) this line is virtually straight on both wings. The ♀ of the former was named *subpulchrata* in 1902 (Nov. Zool. ix, 369, Guadalcanar); the ♂ of the latter *purpuraria* in 1905 (Nov. Zool. xii, 436, Choiseul). A third name, *pulverata* (Nov. Zool. xii, 435, Choiseul), was founded on a confusion of the two, namely a ♂ of *subpulchrata* wrongly associated with a ♀ of *purpuraria*, and must be dropped altogether. Its description is badly arranged inasmuch as the ♂ is described first while the ♀ was intended to be the type, as is shown by the order "1 ♀, 1 ♂" at the bottom of the page and confirmed by the type label. There is a further error as regards the measurement of the ♂, which is first correctly given as 44 mm., but subsequently as 40 mm. Any supposed virtue that might reside in page-priority is therefore more than counterbalanced by the desirability of founding a species not only on the ♂ but still more on a definite zoological conception; moreover, in this instance a rigid application of page-priority would bring about a like result, for the first "*pulverata*" described (i.e. the ♂) would sink to *subpulchrata* and the name would not be available for a second. I subjoin the correct synonymy and list of specimens.

(1) *N. subpulchrata* Warr. 1902 (♀) = "*pulverata* ♂" Warr. 1905 (nec typ.). N. Choiseul, 1 ♂; S. Choiseul, 2 ♂♂; Guadalcanar, 1 ♀ (type).

(2) *N. purpuraria* Warr. 1905 (♂) = *pulverata* Warr. 1905, sens. str. (♀). S. Choiseul, 1 ♂ (type); N. Choiseul, 1 ♀ (type of *pulverata*).

53. *Nadagarodes tentilinea* sp. n.

♂♀. 40–43 mm. Near *mysolata* Walk. (1866). Head and body coloured about as in the darkest ♀♀ of that species, the ♂ abdomen above being mixed with ochraceous posteriorly.

Forewing pale violet-grey (whitest between median and postmedian lines), with dark-grey irroration; costal edge ochre, with scattered black dots: lines bright ochraceous; antemedian curved anteriorly; median straight; postmedian much less curved anteriorly than in *mysolata*, accompanied proximally by a heavy black line, which only weakens at costa; subterminal pale line accompanied proximally by a moderate shade (grey mixed with ochreous); apex slightly lightened; fringe orange-ochraceous.—*Hindwing* with termen little waved, the angle at R³ more pronounced than in *mysolata*; as forewing, without first line.

Underside as in *mysolata*, probably equally variable in details.

New Hanover, April 1923, type ♂, and March 1923, 1 ♀ (A. F. Eichhorn), February–March 1897, 2 ♀♀ (Webster). All in coll. Tring Museum.

Distinguished by the straight lines and the sharply defined black of the postmedian, as well as by the almost complete lack of sexual dimorphism.

54. *Euipe undulataria plumbocaerulea* subsp. n.

♂♀. Both wings above strongly glossed with bright plumbeous (almost blue); the white parts of central area rather clean in the ♂ and well indicated even in the ♀, that of the forewing, however, in both sexes generally only well expressed from R³ to M² or at farthest to the fold. Basal area of hindwing, on the other hand, rather darker than in the New Guinea forms, especially beneath.

Bismarck Archipelago: New Ireland, November 1923, 5 ♂♂ (with type), 2 ♀♀; New Hanover, February–March 1923: 2 ♂♂, 6 ♀♀; Rook Island 4 ♂♂, 2 ♀♀; ? Dampier Island, 1 ♂ (worn). All in coll. Tring Museum, collected by A. F. Eichhorn.

Euipe undulataria was founded by Pagenstecher (*Jahrb. Nass. Ver. Nat.* xxxix, 160, t. x, f. 1) on ♀♀ from Aru (*loc. typ.*) and Amboina, and is widely distributed from the Moluccas to Goodenough Island. I believe it may be separable into two races, but I have seen very few examples from the Moluccas and none from Aru, so cannot pursue the question further; in any case the above differentiation separates *u. plumbocaerulea* from both.

55. *Euipe fictaria* sp. n.

Luziaria fictaria Walk. MS., in coll. Oxford Museum.

"*Euipe phalarota* Meyr." Swinh., *Cat. Lep. Het. Oxf. Mus.* ii. 266 (1900) indescr. (nec Meyr.).

♂♀, 34–37 mm. Near *undulataria* Pagenst., but scarcely a race. Termen of forewing in ♂ strongly, in ♀ appreciably concave; in the ♂ this concavity reaches from close to apex to M², in the ♀ it fades out about R³, ♂ with the white median patch of forewing wanting, the white band of hindwing irrorated with dark scales. ♀ more uniformly black-grey than that of *undulataria*. Both sexes beneath with the white apical patch reduced to a subapical dash, running in from termen behind SC², at its proximal end confluent with a remnant of the white subterminal, so as to form a posteriorly directed crook.

Borneo: Sarawak, the type ♂ and a ♀ in coll. Tring Museum; Labuan. Natuna Islands: Bunguran. Malay Peninsula: Gunong Ijau. Singapore, a good series in coll. British Museum.

If it be held that Swinhoe's citation of *fictaria* as a *Euipe* from Borneo and Singapore is sufficient indication to establish the species, he can be cited as

author and the date given as 1900. Personally I hold that some attempt at diagnosis is requisite, but I admit that there is no other known Malayan species which an entomologist of Swinhoe's capabilities could well have confounded with *phalarota*. As to the genus *Euiippe* Meyr. (1886), I am not sure that it is more than a section of *Luxiaria* Walk. The features which characterise *phalarota*—second joint of palpus slender, with small terminal tuft on upperside directed obliquely forward, M^1 of hindwing stalked or connate, hindtibia of ♂ without hair-pencil, its terminal spurs obsolete, first tarsal joint with long spinules—are indeed marked enough, but they all tend to become less pronounced as one proceeds westward in the study of the group. How similar the two genera can be in facies is shown by the fact that Warren (1903) has described a true *Luxiaria* as "*Euiippe*" *inferna*.

It is necessary to add that Meyrick's genotype is a ♂, not a "♀" as indicated. The species is only known from the Solomons and (in a perhaps separable race) from Rossel Island.

56. *Luxiaria subrasata rescripta* subsp. n.

♂. Forewing on an average not quite so narrow as in *s. subrasata* Walk., from Borneo. Both wings above less suffused with slaty grey, generally less weakly marked. Underside much less dark than in *s. subrasata*, cinnamon or ochreous-tawny (in *s. subrasata* deep orange-cinnamon to Mikado brown, with greyer suffusions), tending to become paler outside the subterminal band.

♀. Subterminal band above more fawn, less smoky, beneath less broad and dark than in *s. subrasata*.

Throughout New Guinea and the D'Entrecasteaux Islands, the type ♂ from Upper Aroa River, British New Guinea, end of January 1903 (A. S. Meek) in coll. Tring Museum.

57. *Eutoea heteroneurata bismarckensis* subsp. n.

♂. More tinged with brown, especially on forewing beneath, than typical *heteroneurata* Guen. (= *tephrosiata* Guen., vide Prout, NOV. Zool. xxxii, 62), the area outside the oblique line on forewing conspicuously browner, the oblique line itself on both wings thickened.

♀. Slightly less yellow than in the ♀ of typical *heteroneurata*; distal area of both wings with broad suffusions nearly reaching termen, on the upperside smoky (mixed brownish and grey), on the underside more vinaceous-cinnamon or hazel, though sometimes with grey admixture; the characteristic pair of dark subterminal spots at R^2 of forewing obsolete on upperside, rather weak on underside.

Bismarek Archipelago: New Hanover, February–March 1923, 5 ♂♂, 3 ♀♀ (*loc. typ.*); New Ireland, January 1924, 1 ♂; New Britain, January 1925, 3 ♂♂, 2 ♀♀; Rook Island, August 1913, 1 ♂.

58. *Syrhodia campylogramma* sp. n.

♂♀. Intermediate between *lutea* Stoll and *rubricata* Warr. (vera), the black-tipped costal hair-pencil of hindwing being as strongly developed as in the former, while the reduction in size, the almost smooth (scarcely waved) termen of the

♂ hindwing, strongly curved median line of forewing, and anteriorly strongly bent postmedian point to a clear affinity with the latter. I recognise two races :

S. c. campylogramma, ♂♀, 34–37 mm. In size and general tone of colouring closely like *rubricata*. Distinguishable, apart from the ♂ hair-pencil, by the more truncate apex of the hindwing of the ♂ and by the still more strongly curved median shade of the forewing. The markings on an average stronger, median shade of forewing commonly thickened, dark costal shade outside the postmedian generally well developed, especially in a blackish spot behind SC², postmedian of hindwing generally rather more distally placed than in *rubricata*.

Dammer, December 1898 (H. Kühn), a good series. Wetter, May 1892 (W. Doherty), 2 ♂♂, May 20, 1900 (H. Kühn), 1 ♀. Dutch Timor : Oinanisa, November–December 1891 (W. Doherty), 1 ♂. Portuguese Timor : Suai, January 15–21, 1923 (E. Wahr), 1 ♂. Teoor, November 5, 1899 (H. Kühn), 1 ♀. Little Key, November 21, 1897 (K. Kühn), 1 ♂, January–March 1895 (H. C. Webster), 1 ♀. Type ♂ (Dammer), in coll. Tring Museum.

The ♀ is dimorphic in colour, like that of *rubricata*.

S. c. sumbensis subsp. n., ♂♀, 38–41 mm. Markings as in the preceding subspecies. ♂ above more mixed with yellow, often quite like a small *lutea* ; beneath predominantly yellow, as in *lutea*. ♀ apparently always yellow, resembling a small strongly marked *lutea* except in the shape of the lines.

Sumba (W. Doherty and Everett), a good series in coll. Tring Museum.

S. rubricata Warr. vera (Nov. Zool. v. 35), referred to above, cannot be regarded as a race of *lutea* Stoll, but rather as a representative species, having the hair-pencil of hindwing considerably reduced, predominantly pale ochreous, only black-mixed at the tips ; the series in coll. Tring Museum is from Cedar Bay, Geraldton, and "N. Queensland." Later (Nov. Zool. xi. 491, September 1904), Warren confounded with it a smoother, less densely irrorated species, without the hair-pencil, which species has been bred in numbers by Mr. F. P. Dodd at Townsville, and named an aberration of it "ab. *decolor*." A little later in the same year Turner (*Tr. Roy. Soc. S. Austral.* xxviii. 236) validly named the same species *metabolis*. As aberrations have no necessary status in scientific nomenclature and *decolor* was associated with a misidentified species, I am not prepared to sink *metabolis* to it.

59. *Syrrhodia lysima* sp. n.

♂, 35 mm. ; ♀, 41 mm. Closely similar to *campylogramma sumbensis* Prout (supra) or the yellowest aberrations of *rubricata* Warr., but without the ♂ hair-pencil ; postmedian line of forewing not quite so markedly bent as in the two species named, inclining to revert to the form of that of *lutea* Stoll, the maculation outside it very weak, in the ♀ almost entirely obsolete ; postmedian of hindwing rather more bent about R²–M¹ than in the allies ; underside with cell-dots generally weak or obsolete.

Sudest Island, January–May 1916 (Eichhorn Bros.), type ♂ and allotype ♀ ; Woodlark, March–April 1897 (A. S. Meek), 2 ♀♀ ; Dampier Island, February–March 1914, 1 ♂ ; Manus, Admiralty Islands, September–October 1913, 1 ♂ (ab. or race, rather larger and redder) ; New Hanover, February–March 1897 (Webster), 1 ♀ ; Feni Island, E. of New Ireland, May 1924 (A. F. Eichhorn), 1 ♀.

The few specimens yet known to me from the Solomons are not enumerated

above, as they will probably prove racially separable, but are mostly ♀♀ (Bougainville, 2 ♂♂, 1 ♀; Choiseul 1 ♀; Guizo, 2 ♀♀; Rendova, 1 ♀).

60. *Zeheba respectabilis* sp. n.

♂, 46 mm.; ♀, 42 mm. Close to *spectabilis* Butl. (*Proc. Zool. Soc. Lond.* 1877, p. 474), perhaps a race.—*Forewing* in ♂ rather less fleshy tinged; in both sexes with the tooth at R³ rather longer; cell-mark broader; lines less sinuous, notably the postmedian, which in the ♂ forms an extremely gentle, almost regular curve between SC and the hindmarginal spot, while even in the ♀ the outward sinus behind R³ is quite weak.—*Hindwing* with the terminal teeth stronger than in *spectabilis*; cell-dot sharply black; postmedian line corresponding to that of forewing.—♀ beneath with the broad outer band much blackened.

Solomons: Vella Lavella, March 1908 (A. S. Meek), 2 ♂♂, 1 ♀, in coll. Tring Museum.

61. *Krananda extranotata* sp. n.

♂♀, 50–59 mm. Near *vittraria* Feld. (*Reise Novara, Lep. Het.* t. cxxviii, f. 32) Larger. General tone paler, the semihyaline areas being less tinged with cream-colour, the distal area greyer, less tinged with buff-pink, especially on the hindwing.—*Forewing* with the termen slightly more oblique, apex rather more produced, at least as extreme as in *semihyalina* Walk., from India; postmedian line at least as straight as in *vittraria*, the outward bend behind R³ being very slight or almost wanting; anterior subterminal spots enlarged, but indistinct, the area outside the subterminal being almost equally pale; a blackish shade proximal to the subterminal from middle of cellule 2 to tornus (only weakly suggested in the allies), particularly strong at M², on which it forms an acute proximal projection.—*Hindwing* with postmedian line almost straight from costa to fold, wanting the proximal bend at SC²–R¹; subterminal spots enlarged, notably those in cellules 6 and 3.

Dutch New Guinea: Ninay Valley, Central Arfak Mountains, 3,500 feet, November 1908—January 1909 (*loc. typ.*). British New Guinea: Biagi, 1 ♂; Hydrographer Mountains, 2 ♀♀; Mt. Kebea, 1 ♂; Dinawa, 1 ♂. Type in coll. Tring Museum.

62. *Anonychia strebla* sp. n.

"*Anonychia violacea* Moore" Hmps., *Faun. Ind. Moths*, iii. 178 (1895) (ex err.).

♂♀, 31–38 mm. Head and body concolorous with wings.

Forewing coloured nearly as in *violacea* Moore (1888), but with slightly less of the purplish suffusion; some vague dark basal and subbasal shading or irroration; antemedian line pale-edged proximally, formed much as in *lativitta* Moore (1888)—almost at right-angles from costa to fold, here strongly bent or curved, to run obliquely inward—but with a very slight additional tooth outward at cell-fold, superficially accentuated by a thickening of the line; cell-dot rather large; median line generally weak; postmedian with a long prong outward on R³, often as acute as in *rostrifera* Warr. (1888), sometimes slightly blunter at extremity, deeply incurved between this and a second, blunter projection at

fold; subterminal shades much as in *violacea*.—*Hindwing* paler than in *violacea*, with indications of small cell-dot and irregular postmedian.

Forewing beneath, as in the allies, paler, greyer, and very weakly marked, only at apex concolorous with hindwing. Hindwing brownish, irrorated, with large cell-dot and rather strong, thick postmedian line, slightly outbent in middle, then slightly incurved, on the veins accentuated, between them slightly indented.

Sikkim: Tonglo, 10,000 feet, July 1886 (H. J. Elwes), 4 ♀♀, including the type; Jongri, 11,000 feet, 1 ♀; Bhutan, August 1888 (O. Möller), 2 ♂♂ in inferior condition; Buxa (?), 1 ♂ also defective and rather aberrant.

63. *Scardamia aetha* sp. n.

♂, 28 mm. Face and palpus rather dark red-orange ("English red"). Vertex, upperside of thorax and base of abdomen above brighter (flame-scarlet); abdomen posteriorly fading out through duller, more vinaceous red to whitish. The glossy crests normal. Body beneath cream-colour, the foreleg mostly reddened.

Forewing salmon-orange or orange chrome, with very dense, largely confluent dull-red strigulation and in places (chiefly about the posterior half of distal area) with faint suffusion of grey or drab; proximal part of costal region brighter, flame-scarlet; cell-mark and lines indistinct, greyish; antemedian dentate outward on M and SM² and more weakly on SC, little sprinkled with silvery scales; postmedian fine, almost straight, 3.5 mm. from termen, its proximal silvery scaling rather incomplete; fringe dull red.—*Hindwing* concolorous; abdominal edge and fringe cream-colour; cell-dot minute, blackish; antemedian line wanting; postmedian slightly more proximal than on forewing, very little curved, reaching abdominal margin 2 mm. from tornus; fringe as on forewing.

Underside cream-colour, the forewing mostly flushed with pink except behind fold, the hindwing faintly irrorated with pink, at least anteriorly; postmedian line pink, not very sharp; fringes flushed with pink.

♀, 27–35 mm. Proximal costal region of forewing as in ♂, the upperside otherwise largely suffused with purple-drab; lines darker than in ♂, the postmedian accompanied distally by a narrow plumbeous or violet-grey band. Underside entirely suffused with dull pink (orange-vinaceous to Congo pink).

British New Guinea: Biagi, 5,000 feet, March 1906 (A. S. Meek), type ♂ and 5 ♀♀; Angabunga River, 1 ♀. Dutch New Guinea: near Oetakwa River, 3,500 feet, 1 ♀ (all the foregoing in coll. Tring Museum); Mt. Kunupi, Weyland Mountains, 6,000 feet, November 1920—January 1921 (Pratt Bros.). 4 ♀♀ in coll. Joicey.

64. *Plutodes philornis* sp. n.

♂, 33 mm. Closely akin to *flavescens* Butl. (Hampson, *Faun. Ind. Moths*, iii, 162, fig. 89, as *discigera* form).—*Forewing* with SC¹ from cell; basal patch shorter (about as in *exquisita* Butl.); distal patch rather smaller, not extending behind M², the line on it quite differently formed, showing a single outward angle on R², with a bold inward curve before and behind, the figure forming—when viewed from the distal margin—the conventional "flying bird."—*Hind-*

wing with the silvery line which bounds the basal and abdominal patch not straight, but running rather obliquely towards the abdominal margin as far as submedian fold, then bending so as to become exceedingly oblique (almost parallel with that margin), until its termination near tornus; the abdominal marginal patch consequently extremely narrow except basally; distal patch smaller than in *flavescens*, anteriorly not reaching SC^2 ; the line on it formed essentially as on forewing, but looking much more asymmetrical, on account of the proximity of R^2 (the radial fold) to anterior margin of patch.

Assam: Khasia Hills. Type in coll. L. B. Prout, two paratypes in coll. Joicey.

65. *Plutodes chlidana* sp. n.

♂, 26–27 mm. Face orange. Palpus yellow, mixed—especially at extremity—with orange. Vertex and front of thorax pale yellow. Meso- and metanotum cinnamon-rufous suffused with plumbeous; abdomen above cinnamon-rufous; anal tuft yellow; body beneath yellow.

Wings Naples yellow, mixed with brighter yellow, which becomes deep chrome costally; the patches cinnamon-rufous to orange-rufous, edged with metallic plumbeous, the distal ones somewhat shaded with lilac-grey in the middle.—*Forewing* with basal patch 2 mm., bounded anteriorly by M; distal patch broad egg-shape, its narrower end close to apex, its greatest length 6 mm., its anterior side following SC^1 , then curving away to DC, its posterior almost reaching fold then curving so that its plumbeous ring touches termen in cellule; the dark traversing line nearly central, only once outbent.—*Hindwing* with the proximal patch extending along abdominal margin for 6 mm., not quite regularly tapering, being a little constricted at about $\frac{2}{3}$; distal patch mid-terminal, its greatest length 4 mm. (from near SC^2 to M^2), its proximal side gently convex, its distal gibbous.

Underside pale, more primrose-yellow; costal margin of forewing nearly as above; proximal patch of forewing greyish, of hindwing mostly buff-yellow; distal blotches largely slate-colour, with a proximal crescent of pale grey mixed with buff-yellow.

♀ similar, but with the thorax, abdomen, and blotches above purple-grey, almost heliotrope-purple.

Rossel Island: Mt. Rossel, November–December 1915, 2 ♂♂, 6 ♀♀ (A. S. Meek), in coll. Tring Museum.

The ♀ is very like that of *signifera* Warr. (1896), which reaches Sudest Island without appreciable modification; smaller, the distal blotches smaller, especially that of hindwing. The ♂ is very different from that of *signifera*.

66. *Plutodes polygnampta* sp. n.

♂♀, 24–30 mm. General coloration nearly as in the preceding and with similarly slight sexual dimorphism in colouring; the blotches in both sexes a little lighter and brighter. Very distinct in having the proximal patch enlarged into a highly irregular figure which reaches the proximal plumbeous ring of the outer patch at M^1 – M^2 ; on the forewing, the posterior edge of the enlarged patch follows the hindmargin for about 4 mm., then bends obliquely forward and subsequently runs parallel with M at about 1.5 mm. distant, the anterior edge throws out a large central lobe much as in *drepanephora* Prout (1915) and *connexa* Warr.

(1906); on the hindwing, the connective portion is 1 or 2 mm. wide and runs in virtually from the end of the abdominal streak. Further, the distal patch is rather different from that of *chlidana*, its proximal edge on forewing having a small excavation, its anterior edge on hindwing a small projection.

Rossel Island: Mt. Rossel, 5 ♂♂, 5 ♀♀, with the preceding, of which it seems scarcely possible it can be a remarkably stable dimorph.

67. *Plutodes separata epiphora* subsp. n.

♂, 30 mm.; ♀, 34–38 mm. Generally larger than *s. separata* Warr. (1907), the blotches relatively larger (especially the distal), more definitely edged with blackish-lead; distal blotch of forewing nearly always with a nipple at its posterior end (behind fold), that of hindwing not (as in *s. separata*) straightish proximally, but convex, though with a slight indentation at radial fold.

Dutch New Guinea: Mt. Goliath, January–February 1911, 1 ♂, 7 ♀♀.

The ♀♀ are dichromatic, 3 being coloured about as in *s. separata* ♀, the other 4 as in *s. s. ab. pallidior* ♂.

68. *Zamarada calypso* sp. n.

♂♀, 24–28 mm. Head, with palpus, bright ochreous, irrorated or spotted (the vertex sparingly or scarcely) with walnut-brown. Antennal shaft ochreous; pectinations in ♂ long, in ♀ moderately so (about 5), the inner series (as usual in the group) sharply dark-spotted. Thorax above heliotrope-purple, abdomen a little duller and with a posterior ochraceous-buff spot or dot on each segment; anal extremity and underside of body buff or somewhat ochreous. Hindtibia of ♂ not dilated.

Forewing with termen straightish anteriorly, curved in middle, moderately oblique; translucent yellow-green (almost sulphur-yellow), with sparse, irregular, minute purplish strigulae, which become dense in abdominal region except near base and near the postmedian line; costal margin deep chrome, scarcely dark-spotted; a small, ill-defined basal patch of heliotrope-purple; a small black cell-dot; distal border mostly dark (a blend of pinkish flesh-colour and purple in varying intensity), bordered proximally by a black line (or brown densely dusted with black); width of border anteriorly 3 or 3.5 mm., posteriorly scarcely less, in middle not quite 1 mm., the bay of the ground-colour between R³ and M¹ therefore rather deep, its angles proximally on these veins rather sharp, its distal end little narrower than its proximal, the angles here more rounded off, especially the anterior one; the subterminal wedge-marks brown, black-mixed, rarely very sharp, their pale distal edging slight; an ill-defined blackish cloud along R³ in distal area; terminal brown line overlaid (with only slight interruptions) with black; fringe spotted.—*Hindwing* similar (except costa), the basal patch very small, the postmedian line with an appreciable sinus outward in cellule 6, in addition to the large central one.

Underside with the borders darker and more uniform.

Madagascar: Diego Suarez, February–May 2, 1917, June–August 1917 (G. Melou), a short series in coll. Tring Museum.

The July–August specimens, to some extent also the June ones, are of an aberration with the purple colour in the border duller, darker, and heavier. I have seen a large form of this species from Central Madagascar in coll. Kenrick,

69. *Lomographa* (*Heterostegane*) *contessellata* sp. n.

♀, 21–27 mm. Smaller than *subtessellata* Walk. (*List Lep. Ins.* xxvi, 1648). Body and wings more deeply coloured (tawny-ochraceous), the front of thorax and base of costal margin of forewing suffused with blackish.

Forewing with median line thicker (especially at costa) and slightly less straight than in *subtessellata*, more noticeably bent at the bifurcation of R^2-M^1 ; postmedian slightly outbent at R^1 , thence straightish or faintly concave, less oblique than termen, at hindmargin definitely oblique *outward*; subterminal without the posterior blotch of Walker's species.—*Hindwing* with costal margin not whitened; postmedian quite different from that of *subtessellata*, lacking the subcostal blotch and the deep radial bay; subterminal much nearer the termen than in *subtessellata*, its dark radial spot replaced by a slight distal streak running to the termen, as in *urbica* Swinh. and *lala* Swinh.

Underside with the subterminal developed into a dark band, which is faintly indicated also on upperside as a dusky shade proximal to the line.

Borneo: Penungah, December 20, 1893, and January 1894 (type); Tenom (E. Wahr). Penang, 1897 (Curtis). W. Sumatra: Benkoelen (Ericsson). All in coll. Tring Museum. Singapore and Baram (N. Borneo) in coll. British Museum. Benkoelen in coll. Joicey.

It is strange that neither Hampson nor Warren should have noticed the very considerable differences between this species and the Indian *subtessellata*, which varies very little except in size (24–32 mm., generally 28–29). Hampson (*Faun. Ind. Moths*, iii, 165) merely remarks that “the Bornean form is darker.”

70. *Leucetaera lucifera mixoleuca* subsp. n.

♀, 33–35 mm. Differs from *L. l. lucifera* Warr. (Nov. Zool. x, 385), from Dutch New Guinea to Goodenough Island, in having the ground-colour white, without the pearl-grey and lavender-grey reflections, the irroration less dense than in normal *l. lucifera*, the markings slightly browner.

New Britain: Talasea, January–February 1925 (A. F. Eichhorn), 3 ♀♀ in coll. Tring Museum.

ON THE BIRDS OF FENI AND NISSAN ISLANDS, EAST OF SOUTH NEW IRELAND

BY ERNST HARTERT, PH.D.

A. BIRDS OF FENI ISLAND.

FENI is really composed of several smaller islands, also called Anir Islands, the single islets being Ambitle, Wonneram, St. Jan, St. John or Bournand, and Babase. They are, according to Wilh. Sievers, wooded, under 4° S. lat., $152^{\circ} 45'$ E. long. They consist of andesite, basalt, and coralline chalk, and on Ambitle Isle is a geyser. The inhabitants are Melanesians with some Polynesian blood.

I am not aware of any birds ever having been collected on Feni.

As Feni is a small outlying island, the ornithology is not very rich, though there are, as is characteristic for these island groups, 8 different pigeons, also 3 parrots and 4 kingfishers, but only 7 *Passeres*. Of the latter two have been described as new, i.e. *Monarcha cinerascens impediens* and *Cinnyris sericeus eichhorni*, and of the greatest interest is the new hawk *Accipiter eichhorni*.

The affinities of the birds are with New Ireland, most of the forms being the same as those on that island, but the presence of the true *Ducula pistrinaria*, of *Eos cardinalis*, *Hemiprocne nystacea woodfordiana*, and *Eurystomus orientalis solomonensis* show Solomon Islands influx.

1. *Megapodius duperreyi eremita* Hartl.

Full series from about the middle of May. Three eggs from May 14 measure 80×49 , 77×46 , and 80×47 mm.

2. *Anous (Megalopterus) minutus minutus* Boie.

Anous minutus Boie, *Isis* 1844, p. 188 ("Nova Hollandia").

♂ immature, Feni Island, 5.vii.1924. "Bill black, feet blackish."

These Noddies are apparently only stragglers in the Papuan seas, and those occurring there must belong to the form nesting in the Australian seas, which must be called *minutus*. In this I agree with Mr. Mathews, who first pointed this out, and if the slender-billed group, with its somewhat differently shaped tails, is separated from *Anous*, it must be called *Megalopterus*. (For me it is a subgenus.) Cf. Mathews, *Nov. Zool.* 1911, p. 4, B. Australia, ii, pp. 412, 417, 420.

3. *Numenius phaeopus variegatus* (Scop.).

♂ Feni Island, 16.v.1924.

This date is very late, and probably the specimen would have remained in the tropics throughout the summer. It is in much worn plumage.

4. *Tringa hypoleucos* L.

Specimens from July 4th, 9th, and 15th, in worn summer plumage.

5. *Tringa incana brevipes* (Vicill.).

Specimens shot 31.v., 2.vi., and 2.vii.1924. All four specimens in moult!

6. *Charadrius dominicus fulvus* Gm.

Common from June 5 to July. All June (and July) specimens are *moulting* body plumage and tails, but not yet the remiges.

7. *Ptilinopus superbus superbus* (Temm.).

7 specimens were obtained on Feni Island in June.

8. *Ptilinopus insolitus insolitus* Schleg.

4 adult males were obtained on Feni Island in May, June, and July.

Known to be found on New Britain, New Ireland, Duke of York group, and New Hanover. The Feni Island specimens agree with those from these islands, while on St. Mathias a smaller subspecies, *P. insolitus inferior*, occurs. The iris of the Feni specimens is described by Eichhorn as white or creamy white, the bill as pale greenish yellow, feet purplish red. Two May specimens show moult on body and tail, a July one on body.

9. *Ducula (Globicera) rubricera* (Bp.).

Evidently common on Feni Island in May and June. All specimens in moult from end of May to end of June.

10. *Ducula pistrinaria pistrinaria* (Bp.).

Carpophaga pistrinaria Bonaparte, *Consp. Gen. Av.* ii, p. 36 (1855—Solomon Islands).

8 ♂♀ ad., Feni Island, 5.v. to 14.vi.1924. "Iris dark red. Bill slaty blue. Feet cherry-red or plum-red." Nearly all specimens moult on body and tails, two also on the wings.

D. p. pistrinaria has hitherto only been recorded from the Solomon Islands, though there is a specimen from Nissan in the Berlin Museum. I was surprised to get it from Feni Island, where I should have rather expected *D. p. van-wyckii*.

The specimens from Feni agree quite with typical Solomon Islands series, though a few are a little more greenish than the rest, thus indicating an approach to *van-wyckii*. The latter is restricted to New Ireland and the neighbouring small islands, and New Britain. Dr. Dahl's theory, that *van-wyckii* was restricted to the small outlying islands, while *rhodinolaema* inhabited New Ireland, is a myth. It was discovered at Praslin Harbour, South New Ireland, and has been collected there by others (Finsch, Curtis), also on New Britain, even by Dahl; the error, on which the theory was built, arose from Reichenow naming a specimen from New Britain (Dahl coll.) *rhodinolaema*—it in fact very closely approaches *rhodinolaema*, but is all the same a brightly coloured *van-wyckii* (Stresemann in litt., and examined by myself). Dahl's theory was already attacked by Father Meyer (*Natur und Offenbarung*, 1906, p. 601). There is no doubt that they form a group of subspecies as follows:

1. *Ducula pistrinaria pistrinaria* (Bp.): Solomon Islands: Guadalcanar,

Isabel, Treasury Island, San Christoval, Vella Lavella, Choiseul, Bougainville, Nissan, and Feni Island.

This is the most greyish form, with the least amount of metallic green.

2. *Ducula pistrinaria van-wyckii* (Cass.): New Britain, Duke of York group, New Ireland (terra typica), Credner Islands, Massawa, Nusa.

This form is more metallic, but less so than *rhodinolaema*, somewhat variable; one might call it intermediate between *pistrinaria* and *rhodinolaema*.

As I said above, the idea that it was restricted to the small islands and represented by *rhodinolaema* is quite wrong. It seemed to me, however, somewhat doubtful, if Cassin's description actually referred to this form, as he describes the feathers of the upperside as "metallic golden green with violet and ferruginous shades," though the greyish ashy tinge is described on the quills. Kind information (and a feather from the back) from Dr. Richmond about the type of *van-wyckii* in the U.S. National Museum, Washington, however, set me at ease, and there can be no doubt whatever that it is what we now call *van-wyckii*, though some of the feathers are more metallic than in the majority of specimens.

3. *Ducula pistrinaria rhodinolaema* (Sel.): Manus (Admiralty Islands), New Hanover, Rook, Vulcan, and Dampier Islands, and shores of Astrolabe Bay. (A skin said to have come from Massawa must be from the Astrolabe Bay.)

Darkest, brightest, with much bronzy green, and even with purplish reflections. Wings in a large series generally 245-255, once 258, sometimes (one ♀) 235 mm.

4. *Ducula pistrinaria postrema* subsp. nov.

In colour quite like *D. p. rhodinolaema*, but wings shorter. Two Egum specimens 222 and about 240 (tip damaged), one male from St. Aignan 224, one with doubtful locality 224 mm. Type: ♂ Egum, June 1895, A. S. Meek coll.

Hab. Egum group (east of the D'Entrecasteaux Islands) and St. Aignan (Louisiane group); probably other islands as well. Cf. Nov. Zool. 1924, p. 197. The specimen in the British Museum labelled "Port Moresby" probably came from the D'Entrecasteaux group. (This form was formerly erroneously called *van-wyckii* in Nov. Zool. 1896, p. 248, and 1899, p. 213.)

11. *Gallicolumba beccarii nodifica* Hart.

See Nov. Zool. 1925, p. 118!

1 ♂ ad., Feni Island, 26.vi.1924.

12. *Macropygia amboinensis carteretia* Bp.

Cf. Nov. Zool. 1925, p. 119.

Cf. Nov. Zool. 1925, p. 119.

A full series from Feni, all collected in May. A very young female from 20.v.1924. Most specimens show some moult on body, tail, or wings.

13. *Chalcophaps stephani stephani* Rehb.

8 skins from Feni Island, August 1924, more or less in moult.

14. *Caloenas nicobarica nicobarica* (L.).

2 ♂, Feni Island, 10.vi. and 12.vi.1924, both moulting parts of body plumage.

15. *Anas superciliosa pelewensis* Hartl. & Finsch.

Cf. *Nov. Zool.* 1914, p. 283.

This smaller subspecies of *Anas superciliosa* was found not rare on Feni Island, seven adults being sent shot May and July. Both May and July specimens show moult on tail and body.

16. *Nycticorax caledonicus mandibularis* Grant.

Cf. *Nov. Zool.* 1924, pp. 199, 200.

4 ♂♀ ad. et fere ad., 1 med., 3 juv. Feni Island end of May and June 1924. The iris of adults is described as bright or golden yellow, of the young as yellow or lemon yellow. Only two have one ornamental nuptial nuchal plume each. In one it is rufous, whitish in the middle, and black at base and tip; in the other the greater part of the right-hand web is brown and rufous, the left-hand web white with brown smudge.

17. *Dupetor flavicollis nesophilus* (Sharpe).

♂ ad., 24.vi.1924. "Iris brownish yellow. Upper bill black, lower light horn. Feet black."

♂ juv., 24.v.1924. "Iris yellow. Feet greenish black"

18. *Accipiter eichhorni* spec. nov.

Accipiter pedibus satis brevibus, cera schistacea, colore superne schistacco, torque cervicali lato rufocastaneo; subtus albus, pectore fasciis plus minusve claris pallide griseis-brunneis transversis notato, interdum unicolore. Alis ♀ 233-245, ♂ 203-208, cauda ♀ 184-190, ♂ 154-158, tarsis ♀ 58-61, ♂ 51-52 mm.

Typus ♀ ad., Feni Island, 2.vi.1924. A. F. Eichhorn coll., No. 9366.

This new *Accipiter* belongs to the short-footed group, now usually placed in the genus *Astur*, which is, however, not well-defined. In coloration it closely resembles *A. albigularis* from the Solomon Islands, but the upperside is less blackish, more schistaceous, and there is a wide chestnut-rufous nuchal band, which in *A. albigularis* is usually absent, sometimes indicated, and in one male from Choiseul it is distinct, though darker, more dark chestnut, than in *A. eichhorni*. The middle toe without claw in females is 35-37 mm., in *A. albigularis* 42-44 mm. long. In males 28-30, as against 34-36 mm. The tarsus is also about 8-12 mm. shorter in *A. eichhorni*. We received only normal specimens, while of *A. albigularis* we know one from Guadalcanar with the entire underside slaty-black. The iris of *A. eichhorni* is described as deep yellow, the cere as slaty-blue, bill black, feet yellow.

This species is of the greatest interest. It has of course nothing to do with *A. rubricollis brachyurus* from New Britain, which I have carefully examined in the Liverpool Museum. It differs from *albigularis* by its shorter feet, and while it is a typical "*Astur*," as erroneously separated by many authors, *A. albigularis*, which has been placed in "*Astur*," should be an *Accipiter*. The two genera are bridged over and should not be recognised.

One might ask if *A. eichhorni* could not be a subspecies of *A. albigularis*, but we meet with the extraordinary fact that on Choiseul both *albigularis*, apparently absolutely the same as Guadalcanar specimens, and a form with shorter feet, like *A. eichhorni*, are found, but with the upperside at least as blackish

as in *albigularis*! They have no rufous collar. They were formerly united by us with *albigularis*! Of this new bird we have two adults, one quite white underneath, the other with the throat, chest, and breast blackish slate more or less mottled with greyish white. As they agree in size with males of *albigularis*, we thought they were the latter, but they are labelled as females, as are also two young; we thought at first this was an error, but there is also a young male from Choiseul, with a wing only 182, while the wings of the two young females measure nearly 200 and 215 mm. The wings of the two adult birds measure 198 and probably 200—still moulting! Moreover, the three young birds have the underside cross-barred up to the throat, while in the young of both *A. albigularis* and *A. eichhorni eichhorni* from Feni Island there are wider bars on the flanks, and more or less drop-shaped or longitudinal marks on the chest, though the former vary very much. The upperside of the short-toed Choiseul form is also



more reddish and shows more white bases to the feathers of the crown than the regularly coloured young of *albigularis*. The bill of the Choiseul females is smaller, less thick than in females, larger, longer, than in males of *A. eichhorni eichhorni*. Probably Choiseul, one of the two great northern islands of the Solomon group, has been populated by long-toed hawks from the central group (*albigularis*, unless larger series should enable us to split them up in more than one form!), and by short-toed ones from Feni Island in the north (*eichhorni*); unfortunately we have no such hawks from Bougainville, where the Feni form might occur. As, however, the short-toed birds from Choiseul differ from the Feni Island form, I propose to call them:

***Accipiter eichhorni imitator* subsp. nov.**

Type in Tring Museum, ♀ Choiseul Island, 6.i.1904. No. A 1105. A. S. Meek coll. This is the specimen with the throat and chest slaty.

The photographs will show the difference in the feet.

19. *Haliastur indus girrenera* (Vicill.).

4 ♂♀ ad., Feni Island, May 1925. Two specimens moulting body-plumage, two show traces of black shafts on a few feathers, but all appear snow-white on head, nape, and breast.

20. *Eos cardinalis* (Gray) (or *grayi* Math. & Iredale).¹

10 ♂♀ from Feni Island, during May. Most specimens have an indication of a yellow patch on the lower ear-coverts, like all Solomon Islands specimens, a feature not mentioned in the *Cat. B. Brit. Mus.* xx, p. 23. A male shot 21. v. 1924 has a broad rich yellow stripe along the breast; its bill being partially brown indicates juvenility, but other specimens with even darker bills do not exhibit this yellow colour; it seems to me to be individual variation. The iris is described as red, reddish brown, and brown. Bill reddish yellow or yellowish red, with base of upper mandible black. Feet black. The bare skin encircling the face is black but on the chin more or less irregularly whitish (or flesh-colour), very rarely quite black, in specimens from all localities.

The occurrence of this species, peculiar to the Solomon Islands, on Feni is against the general rule that Feni has New Ireland affinities, Nissan Solomon Islands forms.

Most May specimens moult on body and tail.

21. *Trichoglossus haematodes aberrans* Rehw.

Cf. *Nov. Zool.* 1925, pp. 123, 124, where, however, I omitted to state that this form also extends to the Solomon Islands.

6 ♂♀. A ♀ shot 23. vi. 1924 has a yellow bar to the breast feathers, between the grey base and the red.

22. *Lorius roratus solomonensis* (>*goodsoni*).

Cf. *Nov. Zool.* 1901, p. 82, 1924, pp. 123, 203, 1925 p. 125!

3 ♂, 5 ♀, Feni Island, May and June. These specimens are like those from New Ireland; they agree well with *L. r. solomonensis*, but the males have bills as large as *L. r. goodsoni* from Manus! Most specimens are moulting.

23. *Halcyon albicilla saurophaga* Gould.

Cf. *Nov. Zool.* 1924, p. 277.

A series from Feni, May to July. Some moulting. Longest wing barely 132 mm., often far under 130. Some Moluëcan specimens are larger (to 135), others even smaller, but only a few specimens are available. One specimen has whitish edges to some of the upper wing-coverts, which is apparently a sign of young age. The colour of the back and wings varies a good deal, being sometimes more greenish, sometimes deep blue, almost purplish. Sometimes there is a trace of a collar of black spots at the black of the neck.

24. *Halcyon tristrani nusae* Heinr.

Cf. *Nov. Zool.* 1924, p. 205.

2 ♂, 2 ♀, ad., Feni Island, end June and July, all moulting. One has the sides of the body rich yellowish-brown, two a faint tinge of that colour, one is

¹ See footnote in list of Nissan birds!

white ; all four have some yellowish-brown on the sides of the chest, and the neck-band is more or less brownish-yellow. One male has buff edges to the upper wing-coverts, and this is the one with the greatest amount of yellowish-brown on the underside.

I should rather have expected *H. t. novaehiberniae* (Nov. Zool. 1925, p. 125) than *nusae* on Feni !

25. *Halcyon sancta sancta* Vig. & Horsf.

Halcyon sanctus Vigors & Horsfield, *Trans. Linn. Soc. London*, xv. p. 206 (1827—"Australia." Apparently N.S. Wales).

9 skins from Feni, May. Mostly in old plumage, but partially already moulting. Only two without dusky edges to the breast-feathers. Wings 90-93 mm. Migrant from Tasmania or Australia.

26. *Alcedo atthis pelagica* Stres.

Cf. *Nov. Zool.* 1924, pp. 203, 268, 277.

4 ♂, 4 ♀ ad., Feni Island.

27. *Merops ornatus* Lath.

Cf. *Nov. Zool.* 1924, pp. 205, 268, 277.

A series from May to July 1.

Moulting, but a male from July 1 only, still in body-moult.

28. *Eurystomus orientalis solomonensis* Sharpe.

Eurystomus solomonensis Sharpe, *Proc. Zool. Soc. London* 1890, p. 552 (Solomon Islands, type Ugi).

To my surprise this is the form from Feni Island, not *E. o. neohanoveranus*. Specimens were shot 20.v., 16.vi., and 9.vii.1924, all three in moult. The colour of the bill is variable ; one of our adult females from Feni has the bill entirely red, the other has a black tip, the third, which is not fully adult, has still most of the upper bill blackish. The white spot on the chin is well developed in one of our specimens, in the other two only indicated by one or two white feathers ; one of the latter has also a snow-white feather on the side of the lower throat.

29. *Chalcites lucidus lucidus* (Gm.).

Cf. *Nov. Zool.* 1925, p. 159.

♂, Feni Island, 26.vi.1923. " Iris dark brown. Bill black. Feet slaty blue."

A migrant from New Zealand.

30. *Hemiprocne mystacea woodfordiana* (Hart.).

Macropteryx mystacea woodfordiana Hartert, *Nov. Zool.* 1896, p. 19 (Guadalcanar).

10 specimens from Feni Island, May, June, and July, agree with our series from the Solomon Islands. Their wings measure ♂, 203-208 ; ♀, 199-210 mm. The males have the rufous spot behind the ear-coverts, the females not. Some May and June specimens show wing-moult. Some specimens have the under tail-coverts mixed with whitish, less uniform grey than in typical *woodfordiana*, but we have a Bougainville specimen which has quite as much whitish on the under tail-coverts as our Feni examples. In *H. m. aëroplanes*, which may be

said to be intermediate between *H. m. mystacea* and *woodfordiana*, the under tail-coverts are darker than *H. m. mystacea*.

31. *Monarcha cinerascens impediens* subsp. nov.

8 ♂♀, Feni Island, May and June 1924, half of them immature.

It is not without a careful comparison of all our material that I name the form of Feni (and Nissan). But, taking Mafor specimens as typical (since we have none from the Berau Peninsula), I find that the latter have larger (thicker and longer) bills, and to this larger-billed form seem to belong also the birds from Vulcan and Dampier Islands on the coast of North-East Papua.¹ Generally the abdomen in the Feni and Nissan birds is also darker, but this is not a constant character. To the form from these islands belong also those from Choiseul and the Credner Islands.

Type of *M. c. impediens*: ♂ ad., Feni Island, 19.v.1924. A. F. Eichhorn coll. No. 9275.

Evidently common on Feni Island, as 8 specimens were sent.

The distribution of the forms of *Monarcha cinerascens* is peculiar, as they inhabit chiefly small islands and coastal districts of larger ones only.

In the Berau Peninsula (Dorey, Mansinam) and along the northern coast (apparently with wide interruptions) to Huon Gulf (very rare), Vulcan and Dampier Islands. Then we find it again common on Feni and Nissan, and scarce on Choiseul, Credner, and Duke of York Islands; we also have two bad skins collected by Curtis, and said to be from New Ireland—but as these birds were not labelled, it is not improbable that they came from the Credner or Duke of York Islands. Farther south we found, on some of the Louisiade Islands the broad-billed *M. c. rosselianus*, to which seem to belong those of Trobriand and Goodenough Islands; northwards occurs the very distinct *M. cinerascens perpallidus* Neum., which we received from St. Matthias, Storm Island, and New Hanover, while according to Neumann it is found on the Portland Islands and in North New Ireland! Cf. Nov. Zool. 1915, p. 34 1918, p. 314, 1924, pp. 207, 270, Stresemann (Sepik paper), p. 95.

32. *Monarcha alecto chalybeocephalus* (Garnot).

A series of males and females from Feni Island shot in May. They are quite typical, though the bills of some of the males are rather small. Some of the specimens moult wings, tails, and body feathers, others not.

33. *Edolisoma morio remotum* Sharpe.

Nov. Zool. 1925, p. 209.

4 ♂ ad., 2 ♀ from Feni, May, June, and July 1924. These specimens seem to be inseparable from those of New Hanover and New Ireland. A specimen from May and one from June are moulting.

34. *Pachycephala pectoralis finschi* Rehw.

Cf. Nov. Zool. 1924, p. 209, 1925, p. 132.

4 ♂, 3 ♀, Feni Island, May 1924. These birds agree with those from New Britain, New Ireland, and New Hanover. The width of the black pectoral

¹ Papua is the name of New Guinea and is used in this sense only; to restrict this name for the British Colony in south-east New Guinea is illogical.

crescent varies very much, but not according to locality, though in the Feni Island specimens it is in all four very wide.

35. *Cinnyris jugularis flavigastra* (Gould).

Cf. *Nov. Zool.* 1925, p. 134.

A series of both sexes, all brilliantly coloured, from Feni, May 1924. Some moulting body plumage.

36. *Cinnyris sericeus eichhorni* Rothsch. & Hart., subspecies nova.

This *Cinnyris* differs from its nearest geographical ally *C. sericeus corinna* of New Ireland, by the colour of the throat, which is not steel-blue, but bluish purple, or "royal purple" of Ridgway, *Nomenclature of Colors*, 1886, pl. viii, with, of course, a metallic gloss. The crown also differs, not being glossy moss-green, but more greyish or graphite-green, and the rump is more blue, and so are the upper wing-coverts. The females are not appreciably different from those of *C. s. corinna*. The wings measure ♂ 60-61.5, ♀ 54, 54.5 mm.

C. sericeus sericeus ♂ is also very much like *C. s. eichhorni*, but the throat is much more reddish purple, the crown slightly more greenish, rump greener, bill larger, wing longer, tail longer. The other forms differ still more, as can be seen from their descriptions.

Type of *C. s. eichhorni* Rothsch. & Hart.: ♂ ad., Feni Island, 10.v.1924. A. F. Eichhorn coll. No. 9221 of the Eichhorn-Meek collections.

8 specimens of both sexes were collected in May 1924 on Feni Island.

As soon as these birds were unpacked Lord Rothschild and I noticed the difference in the colour of the throat from specimens of *C. s. corinna* which we had shortly before received from New Ireland. No *Cinnyris* was received from Nissan.

A nest with two eggs was found May 24. It is 16 cm. long, somewhat drop-shaped and fastened to the end of a bough. In one side in the upper half is a perpendicular longitudinal (not round) entrance hole, 4 cm. long and 2 wide. Over it is a protecting porch. The nest is neat, composed of fibres and bast. One of two eggs is smashed, the other is 16 × 12.5 mm. Colour white with a creamy tinge, all over with small brown spots and dots, and with a wide deep brown ring round the thicker end.

37. *Aplonis cantoroides cantoroides* (Gray).

Calornis cantoroides Gray, *Proc. Zool. Soc.* London 1861, p. 341 (Misol).

8 ♂♀, Feni Island, 31.v. to 6.vi.1924. "Iris bright red. Bill and feet black."

A few show single feathers on the back moulting. Wings ♂ 100-102, ♀ 98.5-100 mm.

B. BIRDS OF NISSAN.

Nissan is a coral island, of typical horse-shoe shape. It has consequently no mountains, not rising above 60 m. (Cf. Willh. Sievers in Meyer's *Das Deutsche Kolonialreich*, ii, p. 451.) It is also called Green Island, Sir Charles Hardy Island, or Los Caimanes, and is situated under 4½° S. lat. and 154° 20' E. long. Like Feni, it lies east of southern New Ireland, but about 50 km. to the

south-east of Feni, and in a line with the chain of the great Solomon Islands. Being only about 27 km. long and 21 wide, its fauna is not rich, especially as it has apparently no primeval mixed forests, but is planted with *Ficus*, *Anona*, coco-nut palms, areca palms, bananas, etc. Moreover, pigs have run wild, and rats are numerous. So it is not astonishing that Eichhorn could only collect 20 or 21 resident species, all of purely Solomonian character, with a very few peculiar forms: *Ptilinopus solomonensis neumanni*, *Aplonis cantaroides longipennis*, and *Zosterops eichhorni*.

1. *Megapodius duperreyi eremita* Hartl.

A series from July and August. No difference from the birds of New Ireland, New Britain, etc. An egg from August 4 is of a rather rich colour and measures 74.5 × 44.6 mm.

2. *Tringa hypoleucos* L.

Common August 11–21. While some are in full worn breeding plumage, others are in partial winter garb, and moulting. The spotting on the breast is variable individually.

3. *Tringa incana brevipes* (Vicill.).

A female shot 20. viii. 1924, plumage somewhat worn, moult only on rectrices.

4. *Charadrius dominicus fulvus* Gm.

6 ♂♀ from August, and September 8 and 14. The August specimens are moulting (body, tails, wings), but the two from September, which have *more* black feathers on the underside, do not moult; I should have expected the opposite.

5. *Ptilinopus solomonensis neumanni* subsp. nov.

Ptilinopus subspeciesi *P. solomonensis solomonensis* dictae simillimus, sed major, colore purpurascente frontis magis extenso.

This new form is nearest to *P. sol. solomonensis*, but larger, bill and feet larger, wings of males 130–134, in *P. sol. solomonensis* 118–123 mm. The purple on the forehead is of the same colour as in *solomonensis*, not of the pale colour of *P. s. johannis*, and it extends further; in *solomonensis* it reaches to very little beyond the middle of the eye and is almost V-shaped, the purple on the crown extending only about as far as the front edge of the eye, while in *neumanni* the posterior margin is a straight line from the posterior edge of the one eye to the other. The iris is described by Eichhorn as yellow and dark yellow, the bill as slate, slaty blue, and greenish slate-colour, the feet as dark purplish red.

I name this interesting subspecies after Professor Oscar Neumann, who first called our attention to the almost unknown fauna of Nissan Island.

Type: ♂ ad., Nissan, 1. viii. 1924. A. F. Eichhorn coll. No. 9485. Evidently not rare, as a series was collected.

Eight nests were found between August 5 and 18. They are flimsy structures of tendrils with a slight depression in the middle, and contain one egg each. The eggs are white with hardly any gloss, and measure 30 × 22.2, 30 × 22.5, 31 × 22.6, 32.5 × 24, 32.5 × 24, 32.7 × 22.2, 33 × 23.5, and 33.5 22.6 mm.

6. *Ducula pistrinaria pistrinaria* (Bp.).

See antea, p. 34.

8 ♂♀ ad. from Nissan, shot end July and August. In fine plumage, no moult, but one female from August 1 is somewhat worn and dirty and shows moult on back. Local native name: Balus.

Many nests were found in the middle of August, each containing one egg only. The eggs are smooth with hardly any or little gloss, shining through yellowish white. 19 eggs measure from 45×32.5 , 44.5×32 , 45.2×34.7 , to 47×34.5 , 47.5×32 , 48×34 , 48.5×32.6 , 49×33.5 , and 50×34 , 50×36.5 mm.

7. *Gallicolumba beccarii nodifica* Hart.

Gallicolumba beccarii nodifica Hartert, *Nor. Zool.* 1925, p. 118 (New Ireland); antea, p. 35.

9 ♂♀ ad. and juv., Nissan, August and September. "Iris dark brown, bill black, feet blood-red or cherry-red." Juveniles moulting into adult plumage, adults not moulting. Wings of adult males 107–110 mm. The metallic patch on the nape is sometimes obsolete or absent. The adult female is like the male, but lacks the purple patch on the wing-coverts, the throat and chest are ashy grey, without the white lower edge and without the purplish band separating the grey from the brown abdomen. Wing 107 mm. The female from New Ireland described *Nov. Zool.* p. 118 is perhaps not adult. Quite young birds have dull cherry-red feet and rust-coloured tips to the feathers, or the feathers quite rust-coloured (on head and chest).

Seven nests with one egg each were found from August 12 to 18. They are flimsy small platforms of about 4×5 inches across, composed of tough tendrils with more or less decayed leaves and a slight depression in the middle. The eggs are white with moderate gloss, and measure 23.5×21.4 , 26.5×20.5 , 27×21 , 27.5×20.5 , 27.8×21.1 , 29×20.5 , and 29.5×21.5 mm.

8. *Macropygia rufa rufocastanea* Rams.

Macropygia rufa-castanea Ramsay, *Proc. Linn. Soc. N.S. Wales*, iv. p. 314 (1879—Guadalcanar, Solomon Islands).

4 ♂ ad., 1 ♀ ad., 3 juv., Nissan, August and end of July. Some specimens badly in moult.

I cannot separate these birds from typical *rufocastanea*. When I described *M. r. goodsoni* (*Nov. Zool.* 1924, p. 266) I compared it with *M. r. krakari* from Dampier Island (*Nov. Zool.* 1915, p. 28), but I have to admit that there is hardly a difference in the general coloration between *rufocastanea* and *goodsoni*; I am afraid *M. r. goodsoni* is a rather poor subspecies, differing from *M. r. rufocastanea* merely in the generally smaller bill, and sometimes darker colour of the slate-coloured spots on the lateral rectrices.

I cannot help thinking that *M. rufa rufocastanea* must also occur on New Ireland and New Britain, since a closely allied form (*M. r. krakari*) inhabits Dampier Island, since two specimens from Rook Island (*Nov. Zool.* 1914, p. 208) seemed to us indistinguishable (?) from *rufocastanea*, and the closely allied *goodsoni* lives on St. Matthias and Squally Islands. On the trees, from a distance, *M. r. rufocastanea* and *nigrirostris* must look alike.

9. *Chalcophaps stephani murtoni* Rams.

Chalcophaps murtoni Ramsay, *Proc. Linn. Soc. N.S. Wales*, vi, p. 725 (1881—Guadalcanar).

♂♀ ad., moulting, Nissan, 29.viii.1925.

Here again we find on Nissan the form of the Solomon Islands, while on Feni lives *C. s. stephani*, the subspecies of New Ireland!

10. *Caloenas nicobarica nicobarica* (L.).

A series from August, all showing more or less moult on body, wings, or tail. The iris is generally marked as creamy white, but in young birds with blackish green tail and in two adults as dull grey and dark grey.

11. *Nycticorax caledonicus mandibularis* Grant.

Cf. *Nov. Zool.* 1924, pp. 199, 200, and *antea*, p. 36.

4 ♂♀ ad., Nissan, 30.viii. and September 1924, more or less in moult. One has the worn remains of a long ornamental plume, which is entirely black; in two others they begin to grow and are entirely black as far as they are visible, about one inch long.

12. *Haliastur indus girrenera* (Vieill.).

♂ ad., Nissan, 23.viii.1924.

13. *Tyto alba delicatula* Gould.

Strix delicatulus Gould, *Proc. Zool. Soc.* "Part iv. 1836," p. 140 (1837—New S. Wales).

An adult male of a Barn-Owl was shot on Nissan 11.ix.1924. It seems to agree perfectly with some specimens of *T. a. delicatula* from Australia.

The occurrence is extraordinary, as we do not know Barn-Owls from the Solomon Islands, nor from New Ireland, and "*Strix aurantia*" from New Britain is very different. Possibly Barn-Owls have been overlooked on the Solomon Islands. A series from Nissan should be examined to confirm its being like typical *delicatula*!

14. *Eos cardinalis* (Gray).¹

Lorius cardinalis Gray, *Genera B, Appendix*, p. 20 (1849—name for Hombron & Jacquinet's *Lari cardinalis*).

10 ♂♀ Nissan, August and September. Exactly like the Feni islanders. A few moult on body.

15. *Trichoglossus haematodes aberrans* Rehw.

Cf. *Nov. Zool.* 1925, pp. 123, 124, where, however, I omitted to add that *aberrans* is also found on the Solomon Islands: Choiseul, Bougainville, San Christoval, Vella Lavella, New Georgia, Gizo, Guadalcanar, and on St. Aignan.

8 ♂ ad. from Nissan Island. Specimens agree with those from S.E. Papuan and New Ireland ones.

¹ According to Mathews & Iredale, "*Austral. Avian Record*," iii, p. 46, 1915, this bird must be called *Eos grayi* Math. & Ired., because "*Lorius cardinalis*" had been used by Gray, *Gen. B.* where a "*Lorius cardinalis* (Bodd.)" was mentioned, but Boddaert's *Psittacus cardinalis* was an *Eclectus*! It seems to me difficult to decide if this preoccupies Gray's name. The authors funnily call their change of names a "specific alteration."

16. *Charmosynopsis placentis pallidior* R. & H.

Cf. *Nov. Zool.* 1924, p. 201, 1925, p. 122.

2 ♂ ad., Nissan, September and August. One has the feathers of the forehead with red near the base, the other not; these red spots are more or less obvious in most *pallidior*, but hardly or not at all indicated in *subplacens*.

These two specimens do not moult.

17. *Halcyon albicilla saurophaga* Gould.

Cf. *Nov. Zool.* 1924, p. 277, and *antea*, p. 38.

A series from Nissan, July and August. Three specimens have a few blackish spots in the middle of the crown; as these specimens have no whitish edges to the upper wing-coverts (which are supposed to be a sign of being young), I don't think these black spots are due to these birds being less adult than others, but it must be an individual character.

18. *Halcyon sancta sancta* Vig. & Horsf.

Halcyon sanctus Vigors & Horsfield, *Trans. Linn. Soc. London*, xv, p. 206 (1827—"Australia." Apparently N.S. Wales; cf. Mathews, *List B. Australis*, p. 149).

9 ♂♀ July and August, not one quite without dusky edges to the breast-feathers. Size somewhat variable, wings 91-96, once (a female) 101 mm. *H. sancta* is a migrant from Tasmania and Australia in New Guinea and the Papuan Islands. Mostly in fine plumage, but partially still moulting.

19. *Chalcites lucidus lucidus* (Gm.).

Cf. *Nov. Zool.* 1925, p. 159.

♂ ad., Nissan, 4.ix.1924.

Migrant from New Zealand or neighbouring islands.

20. *Urodynamis taitensis* (Sparrm.).

Cuculus taitensis Sparrman, *Mus. Carlson.*, fasc. ii, No. xxxii (1787—Tahiti).

Three specimens, all three marked as females, Nissan, September 2, 9, and 15, 1924.

It is difficult or impossible to say from where these birds (which appear to be migrants, i.e. winter visitors, to the Solomon Islands) have come, and to which subspecies they belong if any can be recognized. Mathews recognizes (*Bull. B.O. Club*, xxxix, p. 24) *U. t. philetos* and *U. t. belli*, but they require confirmation. One from Nissan (No. 9644) is evidently fully adult; it is very heavily striped on the underside, upperside barred with rufous. No. 961 is in moult, the old feathers on the upperside have roundish white spots, the fresh ones rufous bars. No. 9647 is above like No. 9644, but the throat is fulvous, and the stripes on the underside are narrower. Why are some juvenile birds above spotted with fulvous, others with white? Do the fulvous spots fade into white, or are there two varieties?

21. *Collocalia esculenta esculenta* (L.).

Cf. *Nov. Zool.* 1924, p. 206, 1925, p. 128.

8 ♂♀ ad., from Nissan, July, August, September 1924.

These birds seem to agree with typical *esculenta*. They show no white on

the rump; for showing white in different degrees *C. e. tametamela* (1921) from New Britain, and *C. e. stresemanni* (1914) from Manus were described. Cf. Nov. Zool. 1924, p. 206. The specimens from Nissan have wings of 97-100 mm. In specimens from eastern New Guinea I have measured up to 110, while Grant's *C. e. maxima* has a wing of 115 mm. It is perhaps an exceptionally long-winged specimen, or is there a larger subspecies in East and Central New Guinea? The amount of white on the lateral rectrices is variable and sometimes absent.

22. *Monarcha cinerascens impediens* Hart.

Antea, p. 40.

8 specimens, July and August 1924. Two adult August skins moult tail and wings.

23. *Zosterops* spec. ? (See p. 48!)

Among a few other birds received from Dr. Thilenius at the Berlin Museum from Nissan was also one of this *Zosterops*. Reichenow believed that the type of *Zosterops longirostris* Ramsay, *Proc. Linn. Soc. New South Wales*, iii, p. 288, 1879, came from Heath Island close to North New Britain (just south of the western Gazelle Peninsula), and as the description agreed fairly well, did not hesitate in registering the bird as *Z. longirostris*, with the distribution Heath and Nissan Islands. The type of *Z. longirostris*, however, was collected by Broadbent on Heath Island near the South Cape of New Guinea, between Brumer Island and the China Strait, in quite a different zoogeographical region.

As, however, the description of *Z. longirostris* fits also the Nissan Island birds, I wrote to Sydney to lend me the type. Unfortunately the rules of the Sydney Museum did not allow to send abroad a unique type, so that I could not see the specimen! I then sent one of our skins to Sydney to compare with the type, but the answer has not yet reached me!

Eichhorn collected 8 specimens in August on Nissan.

Four nests, each with two eggs, were found on August 12th. They are suspended somewhat like the nests of the European Oriole, by the rim, usually in a fork formed by two twigs, cup-shaped, and composed of fine grasses, and sometimes a bit of moss or wool, lined with still finer grass. The eggs are very pale blue and measure 19×14 and 18.6×14 , 20×14.6 and 20×14.5 , 19.5×14.1 and 19.1×14 , 18×14.1 mm.

24. *Pachycephala pectoralis dahli* Rehw.

Pachycephala melanura dahli Reichenow, *Orn. Monatsber.* 1897, p. 178 (Credner Island).

4 ♂, 4 ♀, Nissan Island, August 1925.

There is, in my opinion, no doubt that *P. p. dahli* and *P. p. finschi* are subspecies, *P. p. finschi* inhabiting the larger islands, New Britain, New Ireland, and New Hanover, while *P. p. dahli* is found on the small islands: Credner, Palikuru, Nissan (while curiously enough on Feni Mr. Eichhorn found *P. p. finschi*!), and we also had, as recorded elsewhere, a specimen from Munia (Shortland group) in the Solomon Islands. *P. p. dahli* has the upperside lighter (more yellowish, less olive), the bill somewhat thicker, and is as a rule larger than *P. p. finschi*. The female of *P. p. dahli* has the throat white (generally with a slight greyish tinge), with short brownish grey cross-bars, a more or less distinct brownish pectoral band with dusky shaft-stripes, and the abdomen and under

tail-coverts yellow. Upperside greenish olive, crown dark greyish. The female of *P. p. finschi* has the throat light brownish buff without distinct cross-bars, only more or less distinct distal dark fringes to the feathers, the breast-band darker, more rufous-brown, the abdomen brownish yellow, upperside much more brownish olive, crown brownish grey. Wings of *P. p. finschi* ♂ 86-90, exceptionally over 90, once 95, wings of *P. p. dahli* ♂ 91-95, once 90 mm.

The males of *P. p. finschi* have, as a rule, olivaceous edges to the quills, as stated in the original description, but *there are specimens that have greyish edges to the outer primaries*, thus at a first glance resembling males of *P. p. dahli* !

25. *Aplonis cantoroides longipennis* Neum.

Aplonis cantoroides longipennis Neumann, *Orn. Monatsber.* 1917, p. 155 (Nissan !).

Eichhorn found this bird not rare on Nissan.

This subspecies, hitherto only known from one male in Berlin, is at once recognizable by its larger size, especially larger, more massive bill and longer wings; moreover, the iris is yellow, not red! Wings ♂ 120-122 (in the type 123), ♀ 121, in otherwise adult specimens with juvenile wing only about 110 mm. "Iris yellow, bill and feet black,"

Two young birds are glossless dusky black; in one the feathers of breast, abdomen, and back have subterminal dull brown cross-bars; the iris of these young birds are dull yellowish green. In young *A. c. cantoroides* the iris is also dull yellow, yellowish, cadmium, but the underside is dull white with black stripes!

Neumann mentions a specimen from Matty Island, over 400 km. west of Admiralty Island, with a wing of 118 mm., as possibly belonging to this subspecies, and Stresemann says that the form from Ninigo and Matty Islands is *longipennis*! Considering that on all the islands of the Bismarek Archipelago, including the Admiralty Islands, this form is not known, this cannot be accepted as a fact, until we know also the young, colour of iris, and more specimens from Ninigo (Echiquier group) and Matty Islands.

It is very peculiar that this large form has developed on the small island of Nissan, while the Solomon Islands birds from Guadalcanar, Gizo, Choiseul, and Bougainville are smaller again and seem to be indistinguishable from *cantoroides*! The iris in one of our specimens is marked as "bright red," and most of them "yellowish red." Solomon birds (presumably from Guadalcanar) were called *Calornis solomonensis* by Ramsay in *Nature*, xx, p. 125 (1879), after comparison with "*Calornis cantor*," which is the bird now called *Aplonis* (*Calornis*) *chalybea chalybea*, but probably *A. cantoroides* was meant.

26. *Aplonis metallica nitida* (Gray).

Cf. *Nov. Zool.* 1924, p. 212; 1925, p. 135.

Common on Nissan in August 1924. Colonies of nests were found August 12 to 15. The nests hang down from the ends of boughs and are huge structures; one sent is about 14 inches long and 9 to 10 wide. From Australia Campbell describes a nest two feet long. The nest from Nissan is composed of wire-like tendrils, bast, twigs, and dry leaves. The entrance is in the lower half of the side and leads to a cup lined with pieces of dry palm-leaves. The clutches consist of 2 or 3, rarely 4 eggs. The latter are pale blue with dark

rufous and deeper-lying pale greyish mauve spots, patches, and sometimes very large splashes. Sometimes the spots are only a very few, often almost forming a ring, sometimes all over the egg. One egg is nearly white. They measure from 21×27 , 20.5×28 , 20×29 , 21.7×28.5 to 22×29 mm.

The native name on Nissan is Bu-rum.

P.S.

23. *Zosterops eichhorni* subsp. (spec. ?) nov.

Zosterops rostro pallide stramineo, annulo periophthalmico albo. Superne flavo-viridis, loris flavis; subtus flavida, lateribus virescentibus; remigibus nigro-fuscis, intus albo-flavo exterius flavo-virescente marginatis, secundariis internis flavovirescentibus; rectricibus viridi-brunneis, exterius flavescente marginatis; pedibus flavescenti-schistaceis. Alis ♂ 63-65, ♀ 61.5-62, rostro 13, a basi 17.5 mm.

Type: ♂ ad. Nissan 16.viii.1924, No. 9577, Albert F. Eichhorn coll.

See anteà, p. 46!

Kind information from Mr. W. T. Wells, Australian Museum, Sydney, N.S. Wales, reached me while the above was in print. It confirms my idea that the birds from the two Heath Islands could not very well be the same. In *Z. longirostris* the bill is much longer, measuring 17.5 mm. from the end of the feathering—in *Z. eichhorni* only 13. The breast in *longirostris* is more yellow, not so greenish, the rectrices have deep brown inner webs, in sharp contrast to the outer webs, without a green tinge, the inner secondaries have a less greenish tinge; perhaps the feet are also darker in *longirostris*. Eichhorn records: "Iris greyish brown. Bill dark yellow or pale straw colour, mostly nearer towards the tip, feet dull slate, tinged with yellow."

I have at present not the time to review this group, so cannot definitely say where *eichhorni* should be placed. It seems to be a subspecies of *Z. longirostris* and so do *ainani* and *pallidipes* as well as one or two others with which I am not acquainted.

LIST OF HESPERIIDAE IN THE TRING MUSEUM COLLECTED
ON THE IVORY COAST BY G. MELOU

By N. D. RILEY

INFORMATION concerning the Lepidoptera of the Ivory Coast is so scanty that the following brief list, although it enumerates only 51 species, all belonging to the HesperIIDae, may not be without interest. The collection was made during parts of the years 1913-1915, entirely in the immediate neighbourhood of Bingerville, and is now in the possession of Lord Rothschild, through whose kindness I am enabled to publish this brief account. Exact details as to dates of capture are unfortunately missing in a large number of instances, but whenever the month is recorded this is noted below. It does not follow that the specimens listed were all taken, or only taken, in the months indicated. One new species is included in the collection, and such synonymy as is given is new. The arrangement follows that of Aurivillius, in Seitz, *Macrolep.* vol. xiii, but the sequence is inverted to bring it into line with general practice.

HESPERIINAE

1. *Tagiades flesus* F. 5 ♂♂, ♀♀. June, October, and November.
2. *Eagris denuba* Plötz. 2 ♂♂, 2 ♀♀. March and June.
3. *Hyda grisea* Mab. 1 ♂. November.
4. *Sarangese thecla* Plötz. 1 ♂. June.
5. *Trichosemeia hereus* Druce.
Ceratrachia quaterna Mab. C.R. Ent. Soc. France, p. clvi, 1889.
Trichosemeia quaterna + *Sarangesa hereus* Auriv. in Seitz, xiii, p. 579, 1925.
1 ♀. November.
6. *Trichosemeia tetrastigma* Mab.
T. tetrastigma + *tristifica* Auriv., Auriv. in Seitz (*l.c.*).
The figure of *tristifica* (*l.c.* pl. 76b) shows an absolutely typical upperside of *tetrastigma*. No details are added in the text, as Aurivillius had no other information than that contained in the figure.
1 ♂. March.
7. *Celaenorrhinus proximus* Mab. 1 ♀. January.
8. *Celaenorrhinus galenus* F. 1 ♂, 1 ♀.

HETEROPTERINAE

9. *Gastrochaeta meza* Hew. 7 ♂♂, 11 ♀♀. March, May, June, July, and November.
10. *Gorgyra johnstoni* Butler. 2 ♂♂, 4 ♀♀. March, June, and November.
11. *Gorgyra aburae* Plötz. 1 ♂. June.
12. *Gorgyra mocquersyü* Holl. 1 ♂, 3 ♀♀. June.

13. *Gorgyra subfacata* Mab. 1 ♂. November.
 14. *Gorgyra indusiata* Mab. 1 ♀.
 Aurivillius' statement that the hindwing in this species has no translucent spots is misleading. They are absent in the ♂, but present in the ♀.
 15. *Hypoleucis tripunctata* Mab. 1 ♀.
 16. *Hypoleucis ophiusa* Hew. 1 ♂, 2 ♀♀. June.
 17. *Acleros plotzi* Mab. 1 ♂, 1 ♀. June and October.
 18. *Heteropterus abjectus* Snell. 1 ♂, 1 ♀. June.

PAMPILINAE

19. *Rhabdomantis galatia* Hew. 1 ♂.
 20. *Osmodes laronia* Hew. 1 ♂.
 21. *Osmodes thops* Holl. 6 ♂♂, 1 ♀. March and June.
 22. *Osmodes costatus* Auriv. 1 ♂. March.
 23. *Gegenes niso* L. 4 ♂♂.
 24. *Gegenes hottentotta* Latr. 16 ♂♂, 8 ♀♀. April, June, and July.
 25. *Parnara fatuella* Hopff. 4 ♀♀. June.
 26. *Parnara xylos* Mab.
Pamphila xylos Mab., *Ann. Soc. Ent. France* (6) x, p. 31, 1890.
Parnara alberti Holl., *P.Z.S.*, p. 67, 1896.
Parnara entebbea Swinh., *Ann. Mag. N.H.* (8), iii, p. 90, 1909.
 1 ♂. June.
 27. *Parnara mathias* F. 6 ♂♂, 2 ♀♀. May, June, and September.
 28. *Parnara fallax* Gaede. 1 ♂. March.
 29. *Parnara perobscura* H. H. Druce.
Parnara gemina Gaede, *Int. Ent. Zs.* 1916, p. 126.
 9 ♂♂, 6 ♀♀. June and July.
 30. *Parnara holtzii* Plötz. 1 ♂. June.
 31. *Parnara flavifasciola* H. H. Druce. 1 ♀. March.
 32. *Pardaleodes edipus* Cram. 18 ♂♂, 8 ♀♀. March, June, July, August, and November.
 33. *Pardaleodes sator* Dbl. & Hew. 1 ♂, 1 ♀. March.
 34. *Pardaleodes reichenowi* Plötz. 3 ♂♂.
 35. *Ceratrachia phocion* F. 7 ♂♂, 1 ♀. March.
 36. *Andronymus philander* Hopff. 1 ♂.
 37. *Andronymus leander* Plötz. 1 ♂, 1 ♀.
 38. *Semalea nox* Mab. 1 ♀. March.
 39. *Coenides dacela* Hew. 2 ♀♀. June.
 40. *Coenides cylinda* Hew. 1 ♀.
 41. *Coenides meloui* sp. nov.

♀. *Upperside* ground-colour deep brown. *Forewing*: cilia distally tipped with ochreous; basal third washed with warm reddish brown; translucent yellowish spots present as follows: (i) a large subquadrate spot in cell extending barely beyond origin of vein 3, (ii) a larger rectangular spot based on centre of vein 2, its inner edge in line with centre of cell-spot, from which it is only separated by the median vein, (iii) adjoining this last spot a small triangular spot occupying the base

of area 3, (iv) a semilunar spot resting centrally on vein 1, (v) a series of three subapical spots, in areas 6-8, that in 6 twice the size of either of the others and extending twice as far towards the margin, (vi) a minute point in area 9 just above inner edge of spot in 8. *Hindwing*: cilia bright ochreous; area 8 entirely pale ochreous, darker distally; an obscure ochreous spot in cell, and a crescent of four similar discal spots in areas 2-5, that in 5 by far the largest and least obscured, the horns of the crescent directed outward. *Underside* ground-colour reddish brown with bright orange-ochreous markings. *Forewing* inner margin (area 1a) pale ochreous; central portion of 1b similar, but only reaching vein 2 at a point; above and surrounding this pale area and also the translucent spots in 2 and 3, extending halfway across cell and reaching anal angle, is a large blackish patch; translucent spots as above; the bright ochreous markings consist of a streak along anterior margin of cell followed by a series of costal spots, and of marginal spots in areas 7-3, that in area 7 the smallest, separate, the remainder progressively larger and joined together. *Hindwing* basal area mainly bright ochreous, forming a diamond-shaped patch one point of which is at cell-end; discal spots as above, with additions to the series in areas 1c, 6, and 7; large diffuse submarginal ochreous spots in areas 1c-6 (4 + 5 fused).

Thorax and head above reddish brown; abdomen appears to have been dark brown, but is coated with a white fungoid substance in the only available specimen. Beneath, the thorax, legs, and palpi are rich reddish brown, the palpi ochreous at base. Antennae dark brown with the club and shaft outwardly, and the club dorsally, ochreous.

Length of forewing 25.5 mm.

This species belongs to the *stoehri-luehderi-umbrina* section of *Coenides*, but is decidedly larger than any of these. From *luehderi* and *umbrina*, which appear to be at most races of one species, it can be separated at once by the lack of the curious lilac-grey spot (or spots) on the underside of the hindwing in area 1c; by the absence of any tendency of the translucent cell-spot of the forewing to be produced basad along the median vein; and by the possession of conspicuous ochreous submarginal spots on the undersides of both wings. In this last feature it resembles *stoehri*, but in that species the ochreous underside spots are very much paler in colour, and much sharper in outline, and the discal spots in area 2-5, instead of forming a crescent, are arranged on a straight line, which, produced, passes through the spot in area 6; in *meloui* this spot in area 6 is greatly displaced basad in comparison; *stoehri* has only two subapical spots, *meloui* three and an additional minute point.

1 ♀. TYPE: Bingerville, Ivory Coast (G. Melou), 1915.

42. *Coenides proxima* Plötz.

Hypoleucis arela Mab., *C.R. Soc. Ent. Belg.* p. lxix, 1891 (♀).

The receipt by the British Museum of several pairs of this species taken *in cop.* necessitates the above synonymy.

2 ♂♂.

43. *Coenides malthina* Hew. 1 ♂.

44. *Coenides caenira* Hew. 2 ♂♂, 1 ♀. June.

45. *Pteroteinon laufella* Hew. 6 ♂♂. January, March, and July.
46. *Zophopetes cerymica* Hew. 3 ♀♀. February.

ISMENINAE

47. *Rhopalocampta forestan* Cram. 1 ♂, 3 ♀♀. February.
48. *Rhopalocampta pisistratus* F. 21 ♂♂ and ♀♀. May, June, July, August, and November.
49. *Rhopalocampta hanno* Plötz.
Ismene hanno Plötz, *Stett. Ent. Zeit.* xl, p. 363, 1879 (♀).
Ismene necho Plötz, *Stett. Ent. Zeit.* xlv, p. 63, 1884 (♂).
1 ♂.
50. *Rhopalocampta chalybe* Westw. 1 ♂, 1 ♀. March and December.
51. *Pyrrhochalcia iphis* Drury. 1 ♂, 2 ♀♀. June.
-

REMARKS ON "REVIEW OF THE GENUS *CACOMANTIS*
MÜLL."

BY GREGORY M. MATHEWS

ON p. 164 of Vol. XXXII of this journal Dr. Hartert says, "The genus *Cacomantis* . . . has received rather harsh treatment in the *Cat. B. Brit. Mus.*, and more recently by Mathews, who went entirely wrong about the nomenclature"; and finishes the paragraph by saying "much time had to be wasted in clearing up the nomenclature."

In my opinion Dr. Hartert's treatment is the harshest of all, and his nomenclature wrong; especially as on p. 174 he makes *pyrrhophanus* 1817 a subspecies of *cineraceus* 1827.

On p. 172, under *Cuculus rubricatus*, Hartert says that I told him that I no longer used this name. That is quite true, but I had already pointed this out in my *Birds of Australia*, vol. ix, p. 400 (May 22), 1922, well over three years ago.

I also drew his attention to Liechtenstein's name *Cuculus prionurus* 1823, which I had published in the *Austral. Av. Rec.*, vol. iv, p. 138, 1921 (Aug. 1), well over four years ago.

On p. 174 Hartert says that "Vieillot's description . . . would have suited *cineraceus* or *castaneiventris* much better."

With this I entirely disagree. Vieillot's description of *Cuculus pyrrhophanus* reads: "Il a toutes les parties inférieures rousses: la tête d'un cendré bleuâtre: le manteau, les ailes et les plumes de la queue de couleur brune . . ."

Cacomantis castaneiventris I described as "General colour above dark bluish slate colour, including the head, back, wings and tail . . ."; and the bird Dr. Hartert calls *cineraceus* as "General colour above slate-grey, including the crown of the head, ear-coverts, cheeks, back, scapulars and upper tail coverts."

Now I consider that Vieillot's description fits the bird that I figured and described in my *Birds of Australia*, vol. vii, p. 322, pl. 352, from Australia, and no other form.

As Vieillot describes the head as grey, the back and wings as brown, and the undersurface as russet, the description cannot be ignored, because he says "all" the undersurface russet, but the head to most people could easily include the whole head.

Dr. Hartert tells us (p. 174) that he had the type of *pyrrhophanus* sent over from Paris, and that it was the New Caledonian form of Fan-tailed Cuckoo. I wrote and told him that this was impossible, as the description did not agree. I then went to Paris and found that the bird sent to Tring was not now claimed as the type, according to the most recent books of the Museum. I then found that according to the Paris Museum authorities the type of *pyrrhophanus* was lost. The so-called type, according to their books at the Museum, is No. 1964 (old number) and in red 98 (new number), and the original entry reads "*C. sepulchralis* Müll. Java." This is scratched out, and "*Cacomantis pyrrhophanus* Type N. Caledonie Labillardier," written by some one after the books had been made up. Who wrote the statement that this bird was the type of *pyrrhophanus*

I do not know, but it is in my opinion not true, nor does the bird agree with the original description.

In the new Catalogue in Paris this bird is not called the type of *pyrrhophanus*, but on the base of the stand on which the mounted bird is placed is written "*pyrrhophanus* V. type," also "*pyrrholophus* V." However, it is in my opinion not the type of either name.

I believe my nomenclature of *Cacomantis pyrrhophanus* to be correct as well as that of *C. castaneiventris*. Now let us look at the Fan-tailed Cuckoo.

I have already dropped the name *rubricatus* for some years; the next name is *rufulus*. I am not satisfied that this does not fit the immature of the Fan-tailed Cuckoo only, and it cannot be mixed up with the Square-tailed Cuckoo. The immatures are so different, and as the type came from New South Wales we know to what form to look. Granted that there is some doubt, then the next name that I pointed out over four years ago must be used, viz. *prionurus* Licht.

We get thus my nomenclature, as used in my *Birds of Australia*, and corrected by me afterwards, as follows:

Cacomantis pyrrhophanus (Vieillot 1817). Sydney, New South Wales, and its subspecies.

Cacomantis castaneiventris (Gould 1867). Cape York, Queensland, and its subspecies.

Cacomantis prionurus (Lichtenstein 1823), Sydney, New South Wales, and subspecies (if *Cacomantis rufulus* (Vieillot 1817) be not admitted).

I cannot do better than end in the same way that my old friend did in the *Ibis* 1925, p. 749:

"It is true that I am busy enough with my own work, but I am always ready, if possible, to help a brother ornithologist."

Pucheran's action in 1852 cannot, in my opinion, alter the original description of Vieillot. I do not consider that Pucheran was handling the same bird that Vieillot had. Vieillot's original description fits the Australian bird.

ANSWER TO THE "REMARKS ON 'REVIEW OF THE GENUS
CACOMANTIS'"

BY ERNST HARTERT

WITH regard to Mr. Mathew's remarks on my criticisms I have the following to say :

It was of course a silly mistake to enumerate *pyrrhophanus* as a subspecies of *cineraceus*, as *pyrrhophanus* was the older name !

What I said on p. 172 about Mathews using *rubricatus* as the specific name of what I called *Cacomantis cineraceus* was of course perfectly correct. I referred to and quoted *B. of Australia* vii, 1918, but overlooked that four years later, *B. of Australia* ix, 1922, he had corrected and altered the name, and I also overlooked that he had called attention to the existence of Lichtenstein's name *Cuculus prionurus* of 1823, in the following words :

"List p. 155, and Check List p. 103.

Add to synonymy :

Cuculus prionurus Lichtenstein, Verzeichn. Doubl. Mus. Berlin, p. 9 (pref. Sept.) 1823 : New South Wales."

But this was done in August 1921, about three years after the publication of the volume on the *Cuculidae* of the Birds of Australia ! I will of course not make excuses for overlooking his statement, but I might be allowed to say that it is a hard task to look up in such cases several lists in order to find out what genus and species is referred to. It would have been much easier for ornithologists who have to do with the nomenclature of Australian Birds, if Mathews had said :

"*Cacomantis rubricatus* : To the synonymy must be added : *Cuculus prionurus*, etc., etc."

I have since seen the type of *Cuculus prionurus* in the Berlin Museum, and there is no doubt that it is the bird which for many years was erroneously called *C. flabelliformis*, and in 1912 by Mathews *C. rubricatus*. As *prionurus* is earlier than *cineraceus*, I must of course adopt it, and the species I called *C. cineraceus* in Nov. Zool. 1925. pp. 172-4, will be :

***Cacomantis prionurus* (Licht.)**

Mr. Mathews disagrees with me in adopting the name *pyrrhophanus* of Vieillot, 1817, for the New Caledonian subspecies, but I cannot approve of his reasons. As to the description, Vieillot says : "Il a toutes les parties inférieures rousses." This clearly means that the whole underside is rufous, and I do not agree that we should take it for a bird which has the throat ashy grey. Mathews argues that the underside in this case does not include the throat, because Vieillot says afterwards that the head is grey, and that the head includes the throat as well. This of course might have been argued, but I had good reason to take my point of view, as the description agreed with the type, and moreover, it seems to be obvious that Vieillot first described the underside, and then the upperside, the "head" meaning the head *from above*. In fact, in the very next description on the same page he said, in describing *Cuculus solitarius*, that the head is greyish

(" la tête glacé de gris "), the throat and fore-part of the neck rufescent (" la gorge d'un roux foible, le devant du cou roussâtre et ondé de brun "), and so in other cases ; this shows how Vieillot's diagnosis must be understood.

Mathews further says that the bird which was kindly sent me as the type of Vieillot's *C. pyrrhophanus* could not be the type, as it " was not now claimed as the type," and the real type was " lost." I naturally took the bird sent to me as the type, and the label on it seemed to prove this, saying that it is "*Cacomantis pyrrhophanus*, Type N^{elle} Calédonie, Labillardier." I therefore wrote to the Paris Museum again, asking for explanation, and Monsieur Berlioz kindly informed me that nothing was known of a " lost type," that the specimen in question was undoubtedly the one of which Pucheran speaks as the type in 1852, that the specimen in their register is given as "*Cacomantis pyrrholophus* (V.) *C. bronzinus* (Gr.), N^{elle} Calédonie, Labillardière." There can be no doubt that *pyrrholophus* is merely a mistake for *pyrrhophanus*, as no bird has been described under the name *pyrrholophus*, and there is no *Cacomantis* with a red crest ! Though the new register does not particularly " claim " the bird as the type, it by no means disclaims it, and both at the Paris Museum and in my opinion Mathew's theory of the " lost type " is not confirmed any more than that it is the real type, which there is no good reason to doubt. I may add that " types " were seldom, if ever, marked as such in olden times, and that it was left to later research to find out which the type-specimens were, and Pucheran doubtless knew more about the old specimens than we do now !

I may also repeat that the description of the upperside by Vieillot was bad, but was corrected by Pucheran ! Also that Labillardière, the collector, was a long time in New Caledonia, and that such a mistake as " Nouvelle Hollande " for " Nouvelle Calédonie " could easily be made by Vieillot, while " Java " (or " Timor," as Mathews suggests, without obvious reason) could not likely be made for New Caledonia ! Monsieur Berlioz tells me that a second specimen, received from a dealer in London, Leadbeater, was erroneously labelled as coming from Java, and that this must have been the reason for believing the type came from there by Pucheran. The localities were evidently put on the labels later, but as the specimen belongs to the New Caledonian form, and no such bird occurs on Java, the locality New Caledonia must be correct, while there is no thought of Java (or " Timor " !).

The chief aim of my article in Nov. Zool. 1925, pp. 164-74, was to show the relationship of the various forms of *Cacomantis* to each other, and my arrangement remains so far unaltered and is so far not doubted by any critic. With the discovery (by Mathews) of the name *prionurus* the subspecies which I called *C. cineraceus cineraceus* becomes

Cacomantis pyrrhophanus prionurus

and the other subspecies should be called : *Cacomantis pyrrhophanus prionurus*, *C. pyrrhophanus excitus*, *C. pyrrhophanus meeki*, *C. pyrrhophanus pyrrhophanus*, *C. pyrrhophanus simus*, and *C. pyrrhophanus schistaceigularis*.

The name of *rufulus* is in my opinion most certainly too uncertain to adopt it for any form with absolute certainty.



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EDITED BY
LORD ROTHSCHILD, ERNST HARTERT, and KARL JORDAN.

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NOVITATES ZOOLOGICAE

Vol. XXXIII.

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No. 2.

INTRODUCTION TO A REVIEW OF THE GENUS *CORVUS*.

By COLONEL R. MEINERTZHAGEN.

Plates I to XII.

CLASSIFICATION.

SINCE Sharpe (*Cat. B. Brit. Mus.*, iii) in 1877 reviewed the genus *Corvus*, no attempt has been made to revise or bring up to date his work in the light of a more extensive knowledge of the group and a far more comprehensive material for study.

I have included in the genus *Corvus* all forms which appear to be "erows." Sharpe divided what I call *Corvus* into 12 genera, based mainly on shape and development of the nasal bristles, the development of the nostrils and wing formula. In his sub-family "Corvinae" he included *Nucifraga*, *Garrulus*, *Cissa*, etc., giving to each genus the same taxonomic status as his genera *Corone*, *Coloeus*, *Trypanocorax*, etc. This seems to me to be wrong, Sharpe using mainly specific characters to define his genera, and on such meagre differences giving the same status to separate for instance *Corone* from *Corax*, as he separates such obviously different genera as *Pica* and *Garrulus*. My ideas of generic differences are extremely wide. Structural differences which do not intergrade to a perfect degree, a great difference in colour pattern, habits, nidification, or colour of eggs would in my opinion justify generic separation, but the main point is the dividing up of birds into natural groups in as convenient form as possible. To arrive at a correct conclusion it is not sufficient to study birds from one geographic area alone, even should that area be a continent. Within the Palaearctic Region it would not be difficult to divide up the *Corvidae* into several recognisable genera, but if all forms from all over the world are studied, it will be seen that there is no hard and fast line by which one genus can be separated from another. Students of any area may well stand aghast at including *Corvus crassirostris* in the same genus as *Corvus monedula*, but if they examine all the intermediate forms they will find it difficult to disagree.

Genus-splitting has of late become a source of confusion to students. Mathews has made many species unrecognisable in a perfect torrent of new genera, and more recently Roberts (*Annals of the Transvaal Museum*, viii, part iv, 1922) has given us a most remarkable essay on genus-splitting. It ill becomes anyone to sit down and subject to severe criticism such hard-thought-out and

excellent work as Roberts has done in South Africa, but the system on which he is working must naturally give rise to misgiving among those of us who struggle to compete with modern nomenclature and classification. He admits that his work must appear to many as a "terrible upheaval." He also admits that though we can hardly find our way through the maze of modern nomenclature, he intends to still further confuse the issue by creating not a little more confusion, in what I can only describe as hopeless and final abandonment of the principle of applying to nature classical names so that the world can understand what we are all talking about. The application of latinised names to nature in order to standardise the taking of an inventory of life in all its forms was initiated as a convenience to students to enable them to classify nature into convenient groups whereby they can be recognised. We are rapidly approaching a condition where it is more convenient to call, at any rate birds, by their trivial popular names, than to use their scientific names. This is partly due to the well-meant energies of those who are constantly striving to change a bird's name by excavating a still older name from some obscure work, and partly to the ever-growing desire to give each species generic status, using for the purpose what I maintain are specific characters. A difference in the number of tail feathers, smaller size and bill, the fact that in one species the sexes are alike and in another they are different, larger size and slightly different colour pattern, colour of bill, length of wing, more rounded wing, slight differences in the length of the first primary, etc., are all actual characters given by Roberts (op. cit.) for the separation of new genera. Every single one of these differences are in general use as separating, not species, but sub-species, and in some cases such differences occur as individual variation. To put such characters to such an improper use as generic characters is to my mind a prostitution of science.

The following genera have been applied to the genus *Corvus* :

<i>Corvus</i>	. . .	Linnaeus 1766	. . . . .	Type : <i>C. corax</i>
<i>Lycus</i>	. . .	Boie 1822 (<i>nec</i> Fabr. 1787)	. . . . .	<i>C. monedula</i>
<i>Monedula</i>	. . .	Brehm 1828 (<i>nec</i> Coquebert 1798)	. . . . .	<i>C. monedula</i>
<i>Coloeus</i>	. . .	Kaup 1829	. . . . .	<i>C. monedula</i>
<i>Corone</i>	. . .	Kaup 1829	. . . . .	<i>C. corone</i>
<i>Gymnocorvus</i>	. . .	Lesson 1831	. . . . .	<i>C. tristis</i>
<i>Corvultur</i>	. . .	Lesson 1831	. . . . .	<i>C. albicollis</i>
<i>Frugilegus</i>	. . .	Selys Longchamps 1842	. . . . .	<i>C. frugilegus</i>
<i>Archicorax</i>	. . .	Gloger 1842	. . . . .	<i>C. frugilegus</i>
<i>Amblycorax</i>	. . .	Bonaparte 1853	. . . . .	<i>C. violaceus</i>
<i>Gazzola</i>	. . .	Bonaparte 1854	. . . . .	<i>C. typica</i>
<i>Trypanocorax</i>	. . .	Kaup 1854	. . . . .	<i>C. frugilegus</i>
<i>Pterocorax</i>	. . .	Kaup 1854	. . . . .	<i>C. scapulatus</i>
<i>Physocorax</i>	. . .	Bonaparte 1855	. . . . .	<i>C. moneduloides</i>
<i>Anomalocorax</i>	. . .	Fitz 1863	. . . . .	<i>C. splendens</i>
<i>Gymnocorax</i>	. . .	Sundevall 1872	. . . . .	<i>C. tristis</i>
<i>Heterocorax</i>	. . .	Sharpe 1877	. . . . .	<i>C. capensis</i>
<i>Rhinocorax</i>	. . .	Sharpe 1877	. . . . .	<i>C. rhipidurus</i>
<i>Microcorax</i>	. . .	Sharpe 1877	. . . . .	<i>C. jamaicensis</i>
<i>Macrocorax</i>	. . .	Sharpe 1877	. . . . .	<i>C. fuscicapillus</i>

MIGRATION.

There is little to be said under this head. A southward movement in winter occurs among those forms which breed in northern climes and appears to be actuated entirely by food motives. The strongest migrants are the Hooded Crow (*Corvus cornix*) and the Rook (*Corvus frugilegus*), but even here the more southerly races of the Hooded Crow are absolute residents (*capellanus* and *sardonius*). The Jackdaws and *Corvus torquatus* are both migrants to a somewhat lesser degree. Migratory movement is fully discussed under those forms to which it applies.

There is no evidence of anything but local movement among those forms inhabiting Africa, Australia, and Southern Asia. In North America migratory movement appears to be ill-defined, but entirely dependent on food.

THE "HERD" INSTINCT.

The "herd" or "flock" instinct is only fully developed in the Rook (*C. frugilegus*) and the Jackdaws (*C. monedula* and *dauuricus*), the former almost invariably feeding and breeding in company. The Jackdaws do so less frequently, but as a rule breed in colonies. The partiality of jackdaws for the company of rooks is notorious both in the breeding season, when feeding and on migration. Entire flocks of jackdaws on migration is the exception in *Corvus monedula*, but the rule in *Corvus dauuricus*.

Other forms congregate for food or migration, but very rarely for breeding. Purely resident forms show less inclination to flock than migratory forms.

Nearly all forms about which there is evidence flock for roosting, usually preferring a long journey to some neighbouring hills or clump of trees, and this applies equally to resident and migratory forms. In winter in Iraq countless thousands of rooks have been observed roosting on the ground, and many hundreds of Hooded Crows (*C. cornix sharpii*) have been observed collecting to roost in palm-trees at dusk, though the resident form in Iraq (*C. cornix capellanus*) prefers to roost in pairs. In many parts of India both *Corvus corax laurencei* and *Corvus splendens* perform long journeys to hills where they roost in flocks. *Corvus corax tibetanus* roost in large flocks at Leh in Ladak in the poplars of the Residency garden. The same applies to the African members of the genus.

EVOLUTION.

Environmental influences seem to be mainly, if not entirely, responsible for geographic differences in the genus *Corvus*. The *corax*-group is the most widely distributed, forming an excellent example. The desert and dry-climate forms (*edithae* and *ruficollis*) show a perfect intergradation through *Corvus corax laurencei* to the larger and more brilliant *Corvus c. corax* and *Corvus c. tibetanus*. In all groups subspecific differences are traceable solely to environment, the more brilliant sheen of humid-tropical birds contrasting with the duller sheen of those inhabiting more temperate climates. In the *corax*-, *brachyrhynchos*-, *coronoides*-, *cornix*-, *monedula*-, and *splendens*-groups, variation strictly conforms to the normal laws of environmental influence. Though no Mendelian influence is traceable in the genus, some doubt must remain on two points—the colour of the iris and the shade of white or grey at the bases of the feathers.

In the *coronoides*-group we find that those forms living in the hottest and dampest climates incline to the palest irides, those living in more temperate climates having hazel or dark brown irides. In the same group strictly tropical forms have whiter feather bases than those inhabiting more temperate climes. Similar differences in the shade of the feather bases is noticeable in the *corax*-group. On the other hand we find *Corvus cryptoleucus* with snow-white feather bases living alongside the *corax*- and *brachyrhynchos*-groups in North America. In the East and West Indies we also find white and grey feather-based species in the same region. In tropical Africa all members of the genus have grey feather bases. Regarding the influence of environment on the colour of the iris, it must be remembered that the jackdaw (*Corvus monedula*) breeding from the north of Europe to Algeria and Palestine, has a whitish iris. It is possible that in the one case the cause is environmental and in the other it is Mendelian, or that in the case of the iris of the jackdaw and the feather base of *Corvus cryptoleucus* an environmental influence has become stabilised, and if one believes, as the writer does, that environmental influences can impress the germ plasm and under certain circumstances evolve a true species, the latter explanation appears to be the more satisfactory.

To revert to the colour of the base of the feathers it is noticed that in nearly every group within the genus the shade of colour at the base of the nape feathers is paler or whiter than the shade of colour at the bases of the feathers on any other part of the body. It must also be remembered that a white nuchal collar or patch is a characteristic tendency among crows. In some forms it is well-developed and obvious, whilst in others a white nuchal patch is ill-concealed or entirely concealed by the narrow darker fringes to the feathers. With a pair of scissors it would be an easy matter to give to any specimen of *Corvus cryptoleucus*, *leucognaphalus*, and others a quite natural snow-white nuchal patch or collar.

On external characters *Corvus tristis* appears to be the oldest member of the genus, and probably the nearest living representative of the original *Corvus*, the plumage more closely resembling in its adult stage that of the juveniles of other forms.

EXTERNAL CHARACTERS.

General Colour.—The general colour of the genus is some shade of black with or without a variable amount of purple, violet, blue, or green iridescence. Those species lacking all trace of iridescence are confined to hot climates. On the other hand, within any species of the genus, those inhabiting tropical areas tend to have more iridescence than those in more temperate climates.

Copper or umber-brown, especially on the nape and neck, are rare variants, and confined to hot climates. When such colours occur, iridescence is reduced. No yellows, reds, or greens occur in the colour pigment of feathers, though such shades show in iridescence.

Large areas of various shades of grey or white are common variants, especially on the nape, hind-neck, mantle, breast, or abdomen. That this variant has a direct connection with the colour of the bases of the feathers is probable, and is more fully dealt with under the heading Evolution. Except in *Corvus tristis*, no grey or white occurs on the forehead, wings, or tail of any member of the genus.

Dimorphism.—Fully developed dimorphism occurs only in *Corvus dauuricus*. It is interesting that the nearest form to *C. dauuricus*, namely, *Corvus monedula*, also shows a tendency to dimorphism, especially in its eastern range where the nape and cheeks show any colour from milky-white to grey.

Wing Formula.—The first primary is usually between the seventh and eighth, rarely as short as the tenth. The fourth is usually the longest. Complete detail of wing formulae is given in Appendix B.

Soft Parts.—Legs and feet always black.

Bill always black except for the ivory-tipped bills of *Corvus albicollis* and *Corvus crassirostris*, the bluish-white bill of *Corvus woodfordi*, and the fleshy-white bill of *Corvus tristis*.

Iris hazel or brown, except in certain tropical forms of *Corvus coronoides*, where it varies from pale grey to pure white (but always brown in immature birds), in *Corvus fuscicapillus*, where the iris is pale blue, in *Corvus monedula* and *dauuricus*, where it is bluish white and greyish brown respectively (but always brown in immature birds), in *Corvus leucognaphalus*, where the iris is reddish brown to orange-red, in *Corvus woodfordi*, where the iris is dirty white, and in *Corvus tristis*, where the iris is blue or bluish white. No record has been found of the irides of *Corvus enca*, *typicus*, *florensis*, *kubaryi*, *validus*, or *hawaiensis*. The evolutionary aspect of the colour of the irides is discussed under the heading Evolution.

Face and Post-orbital Patch.—In all members of the genus the face and post-orbital patch or triangle is fully feathered with the following exceptions :

Corvus enca.—Face feathered, but with a bare post-orbital patch.

Corvus unicolor.—As in the *enca*-group.

Corvus typica.—As in the *enca*-group.

Corvus florensis.—As in the *enca*-group.

Corvus nasicus.—Post-orbital patch, gape and chin naked.

Corvus frugilegus.—Face bare, post-orbital patch feathered. In *C. f. pastinator* the extent of bare face is not so large.

Corvus tristis.—Face, chin and entire circum-orbital region bare, except for bristles.

Bill ; General Structure and Nasal Groove.—The bill in both shape and size displays every variety and intermediate gradation from the massive bill of *Corvus crassirostris*, *Corvus tristis*, *Corvus corax tibetanus* down to the minute stumpy bill of *Corvus monedula* and *dauuricus*.

The upper mandible is arched in *Corvi crassirostris*, *albicollis*, *tristis*, frequently in the *coronoides*-group, *validus*, *unicolor*, *woodfordi*, *meeki*, and very slightly so in the *enca*-group.

The nasal groove in which lies the nostril also shows extreme variation, from the deep-cut groove of *Corvus crassirostris* to no groove at all.

An examination of the 40 plates shows better than any description the various forms of mandible and nasal grooving.

Nasal Bristles.—The nasal bristles of the group show every gradation between none at all and bristles reaching to well beyond the proximal half of the culmen. In shape they are from pure fan-shaped to straight or even deflected. In many cases the nostrils are exposed, in some only partially exposed, but in most they are completely covered. Here again, the plates exemplify the differences,

DISTRIBUTION.

No member of the genus inhabits New Zealand, South America, Madeira, the Azores, and the Mascarene islands or the islands of the South Atlantic and South Pacific. With these exceptions the genus is world-wide in its distribution, ranging as far north as lat. 80 north.

Distribution is fairly evenly spread out, for there are few places in the world, mainly islands and Australia, where only one form exists. In north-east Africa, Europe, Palacarectic Asia, and Palestine it would be possible to see during the course of a day 5 different species of crow. Elsewhere and in America only 4 species could be seen at one time. Taking into consideration the fact that there are 18 continental species of the genus, this is rather remarkable and demonstrates that dispersal took place in very early times, and that the genus is very old-established. Further confirmation of this theory is obtained from the fact that forms occur in Hawaii and other island groups where isolation has had time to evolve a separate species.

NIDIFICATION.

The members of the genus construct a compact and fairly solid nest, nearly always in a tree or bush, but most of the *corax*-group usually build in cliffs or among rocks, only occasionally in trees or on human habitations. In central Russia the raven often nests on the church towers. *Corvus cornix* also nests in trees or cliffs or even in heather close to the ground. *Corvus corone* nearly always in trees, and but rarely elsewhere. The African members of the group usually nest in trees though occasionally in cliffs, but never close to the ground. *Corvus albicollis* breed in cliffs in South Africa, but in trees in Kenya Colony. The American members of the group usually nest in trees, though often among rocks. The *monedula*- and *dauuricus*-groups almost invariably nest in holes in trees or in rock crevices or holes in human habitations. *Corvus frugilegus* breeds very rarely in buildings.

The clutch varies from 4 to 7 in colder climates, but rarely exceeds 5 in warmer climates or in the tropics. In fact 3 eggs seems to be the normal clutch of purely tropical species.

The egg typical of the genus has a ground colour varying from pure pale greenish blue to a dirty olive-green. A fair amount of gloss is apparent. Unmarked eggs are very rare, the whole surface being usually spotted, blotched or streaked with greenish brown, blackish brown, or olive-brown, with often underlying lavender markings. Increased pigmentation at the larger half of the egg is rare but occurs. Variation is great even in the same clutch.

Erythristic eggs are rare, but occasionally occur in the *corax*-, *cornix*-, *frugilegus*-, and *brachyrhynchos*-groups. *Corvus capensis* invariably lays eggs of a red type.

Variants from the above occur as follows :

Corvus capensis.—Ground colour salmon-pink to pale creamy pink blotched and spotted with terra-cotta, showing great variation from overall speckling to large occasional blotches; 23 clutches examined.

Corvus cryptoleucus.—Paler than type, though they can be matched. More sparingly marked. 8 eggs seen.

Corvus torquatus.—Very heavily marked, but occasionally typical. So heavily marked are some eggs that they present a uniform greenish-olive appearance. 14 clutches examined.

Corvus coronoides philippinus.—One clutch very pale and sparingly marked. The other densely marked.

Corvus enca pusillus.—One examined from oviduct is of the *Corvus monedula* type, but considering its origin must be an unreliable guide.

Corvus monedula and *dauricus*.—Ground colour bluer than type and less densely marked. These being the only members of the group which almost invariably nest in holes or crevices, it is not surprising to find their eggs paler and more conspicuous than those whose eggs are exposed to sunlight.

Eggs of the following species have not been examined :

<i>Corvus crassirostris</i> .	<i>Corvus typicus</i> .
<i>Corvus tristis</i> .	<i>Corvus nasicus</i> .
<i>Corvus fuscicapillus</i> .	<i>Corvus woodfordi</i> .
<i>Corvus hawaiiensis</i> .	<i>Corvus meeki</i> .
<i>Corvus jamaicensis</i> .	<i>Corvus kubaryi</i> .
<i>Corvus leucognathus</i> .	<i>Corvus validus</i> .
<i>Corvus florensis</i> .	

MOULT.

The *Corvidae* have one annual moult which occurs in late summer and autumn in the Northern Hemisphere. The earliest moult occurs in *Corvus monedula*, which commences moulting in June. Other palaeartic crows rarely show signs of moult until August, though some, such as *Corvus corax tibetanus*, appear to have completed their moult by late July or early August. Eight specimens shot in Ladak between April 17 and May 7 had 5, 6, and 7 primaries in sheath, and were commencing body moult. Central rectrices in sheath. *Corvus corax ruficollis* varies much in the date of moult in the different parts of its range. In Somaliland moult is complete by early November, though in Palestine it is complete by late September. In the *Corvus cornix* group, birds from northern Europe have completed their moult before migration, sometime in September, but in Crete and Egypt moult is complete by late August.

There is very little material on which to base any useful note on the moult of tropical members of the group. In South Africa *Corvus capensis* shows examples of primary moult in March and of the initial stages of body moult in May. I have seen specimens of *Corvus albus* showing signs of moult in every month of the year. In the *Corvus coronoides*-group moult seems to occur in late autumn (October) in the northern forms, and almost throughout the year in tropical forms.

FIGURES.

1. ♂ *Corvus tristis* New Guinea (B.M. 1916.5.30.1404)
2. ♀ *Corvus hawaiiensis* Hawaiï (B.M. 97.10.28.1)
3. ♂ *Corvus fuscicapillus* Aru (B.M. 58.3.10.17)
4. ○ *Corvus validus* Batchian (B.M. 96.1.7.100)
5. ○ *Corvus enca pusillus* Mindoro (B.M. 96.6.6.15)

6. ♂ *Corvus enca compilerator* . . . Mindoro (B.M. 1.69.13.17)
 7. ♀ *Corvus typicus* . . . Macassar (B.M. 73.5.12.2000)
 8. ♂ *Corvus unicolor* . . . Banggai Islands (Tring)
 9. ♀ *Corvus florensis* . . . Flores (Tring)
 10. ♀ *Corvus kubaryi* . . . Guam (B.M. 18.4.29.26)
 11. ♂ *Corvus meeki* . . . Bougainville (B.M. 1909.2.18.8)
 12. ♀ *Corvus w. woodfordi* . . . Guadalcanar (B.M. 88.2.7.47)
 13. ♂ *Corvus moneduloides* . . . New Caledonia (B.M. 97.6.1.73)
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 15. ♂ *Corvus coronoides japonensis* . . . Nagasaki (B.M. 87.11.20.78)
 16. ♂ *Corvus coronoides intermedius* . . . Simla (B.M. 86.3.1.314)
 17. ♀ *Corvus mexicanus ossifragus* . . . Washington (B.M. 88.10.10.637)
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 19. ♂ *Corvus brachyrhynchos caurinus* . . . Vancouver (B.M. 87.3.9.5)
 20. ♀ *Corvus brachyrhynchos palmarum* . . . San Domingo (B.M. 1923.10.24.1)
 21. ♂ *Corvus capensis capensis* . . . Klipfontein (B.M. 1905.12.29.550)
 22. ♂ *Corvus f. frugilegus* . . . Rome (B.M. 1905.6.28.872)
 23. ♂ *Corvus frugilegus pastinator* . . . Yakutsch (B.M. 75.3.15.4)
 24. ♂ *Corvus leucognaphalus* . . . Porto Rico (B.M. 1905.6.28.873)
 25. ♀ *Corvus nasicus* . . . Cuba (Meinertzhagen coll.)
 26. ♂ *Corvus jamaicensis* . . . Jamaica (B.M. 42.12.29.48)
 27. ♂ *Corvus rhipidurus* . . . Suakin (B.M. 1915.12.24.520)
 28. ♂ *Corvus crassirostris* . . . Abyssinia (B.M. 61.5.8.55)
 29. ♂ *Corvus albicollis* . . . Orange River Colony (B.M. 1904.4.1.2)
 30. ♂ *Corvus cryptoleucus* . . . Mexico (B.M. 90.5.30.11)
 31. ♀ *Corvus corax corax* . . . Trebizond, Black Sea
 (B.M. 1909.11.18.34)
 32. ♀ *Corvus corax tingitanus* . . . Tangier (B.M. 1905.6.28.857)
 33. ♂ *Corvus corax laurencei* . . . Sambhur, India (B.M. 86.3.1.63)
 34. ♂ *Corvus corax ruficollis* . . . Jerusalem (B.M. 1905.6.28.860)
 35. ♂ *Corvus corax edithae* . . . Sheikh, Somaliland (B.M. 1918.6.6.20)
 36. ♀ *Corvus splendens splendens* . . . India (B.M. 86.3.1.262)
 37. ♂ *Corvus cornix cornix* . . . England (B.M. 1916.9.20.99)
 38. ♂ *Corvus corone orientalis* . . . N.W. India (B.M. 1908.11.10.24)
 39. ♂ *Corvus torquatus* . . . Foochow, China (B.M. 1902.8.5.72)
 40. ♀ *Corvus albus* . . . Manda I., Kenya Colony
 (B.M. 87.11.3.16)

In the following review of the genus, 33 species, comprising 86 geographical forms, are recognised. These are :

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A complete list of synonyms which have been applied to species and races is given in Appendix A.

KEY TO THE GENUS *CORVUS*.

	Page.
1. Surface of plumage without any distinct pure white area ¹	7
Surface of plumage with a distinct pure white area	2
2. Wing over 385 mm. Bill very deep and tipped with white	3
Bill slenderer and not white-tipped. Wing under 385 mm.	4
3. Nape white	<i>crassirostris</i>
Nape not white	<i>albicollis</i>
4. Wing over 300 mm.	5
Wing under 300 mm.	6

¹ Worn examples of *C. cornix capellanus* are whitish, but never pure white.

	Page.
5. Breast white, abdomen black	<i>albus</i>
Breast and abdomen black, with a broad white horseshoe band across the former.	<i>torquatus</i>
6. Culmen under 35 mm.	<i>dauuricus</i> ¹
Culmen over 35 mm.	<i>typicus</i>
7. Plumage with grey, greyish white, or pale brown areas	8
Plumage dull black, or lead-black, or black glossed with some metallic sheen of blue, violet, green, or purple or copper. Never with grey, greyish white, or pale brown areas	12
8. Crown glossy blue-black	9
Crown glossless and never black	<i>tristis</i>
9. Culmen under 40 mm.	10
Culmen over 40 mm.	11
10. Abdomen lead-grey or lead-black	<i>monedula</i>
Abdomen dirty ash-grey or dirty black	<i>dauuricus</i> ²
11. Mantle glossy blue-black	<i>splendens</i>
Mantle grey or whitish	<i>cornix</i>
12. Nasal bristles fan-shaped	<i>rhipidurus</i>
Nasal bristles not fan-shaped	13
13. First or outside primary shorter than the eighth	15
First or outside primary equal to or longer than the eighth	14
14. Base of feathers snow-white. Throat, feathers not elongated or lanceolated	<i>cryptoleucus</i>
Base of feathers grey to whitish. Throat, feathers elongated and lanceolated	<i>corax</i>
15. Nostrils entirely uncovered by bristles	16
Nostrils concealed or nearly so by bristles	17
16. Under-parts violet-purple. Post-ocular region feathered. Larger <i>frugilegus</i> ³ Under-parts black glossed with deep violet. Post-ocular region naked. Smaller	<i>nasicus</i>
17. Head and neck copper brown	<i>fuscicapillus</i>
Head and neck not copper-brown	18
18. Culmen at its frontal base not covered by bristles, though edged by short tufted feathers	19
Culmen at its frontal base covered by nasal or frontal bristles	21
19. Bill black	<i>enca</i>
Bill not black	<i>woodfordi</i>
20. Mantle glossed with some shade of green, violet, or blue	22
Mantle glossless	21
21. Wing over 280 mm.	<i>hawaiiensis</i>
Wing under 250 mm.	<i>jamaicensis</i>
22. Cutting edges of both mandibles in a straight line from gape to tips of mandibles	<i>moneduloides</i>
Cutting edges of mandibles never in a straight line from gape to tip	23
23. Mantle with a distinct blue, purple, or violet gloss	24

¹ Pied phase.

² Dark phase.

³ In the immature of *Corvus frugilegus* the nostrils are covered. The violet-purple plumage, wing formula and locality will then form easy distinguishing features.

	Page.
Mantle blackish with a mere trace of a purplish sheen which is very indistinct	<i>kubaryi</i>
24. Nasal bristles about one-third of the whole length of the culmen.	25
Nasal bristles about one-half the total length of the culmen	26
25. Base of nape feathers dark grey	<i>capensis</i>
Base of nape feathers white	<i>leucognaphalus</i>
26. Head and nape bright metallic blue-green in marked contrast to a violet mantle	<i>meeki</i>
Head and nape never bright metallic blue-green, though sometimes dull oily green and not in marked contrast to the colour of the mantle	27
27. Base of feathers snow-white. Culmen over 70 mm. and strongly arched. Nape, neck and mantle uniform violet	<i>validus</i>
Base of feathers seldom snow-white, or when they are, as in some races or <i>C. coronoides</i> , the culmen is then well under 70 mm. long. Culmen not strongly arched, or more frequently not arched	28
28. Throat feathers elongated and showing distinct signs of lanceolation, sometimes but slightly so	29
Throat feathers not elongated and without lanceolation	30
29. Culmen usually and slightly arched in its centre. Nasal bristles usually not directed up so as to cover the basal half of the culmen. Base of nape feathers from dark grey to snow-white. All races of <i>Corvus coronoides</i> which occur on the Asiatic Mainland show a distinct greenish tinge on the head, nape and under-parts	<i>coronoides</i>
Culmen never arched. Nasal bristles usually directed up to cover the basal half of the culmen. Base of nape feathers always dark grey. Never any greenish tinge on the plumage which is purplish on the head, nape and under-parts	<i>corone</i>
30. 2nd primary shorter than the 8th	<i>florensis</i>
2nd primary longer than the 8th	31
31. Under-parts distinctly glossed with greenish. ¹ Forehead more violet than the blue of the back	<i>mexicanus</i>
Never any trace of green on the under-parts. Forehead and back strictly uniform	<i>brachyrhynchus</i>

Corvus tristis.

Corvus tristis Lesson and Garnot, *Bull. Sci. Nat. Férussac*, x, p. 291, 1827 (cf. Mathews, *Ibis*, 1916, p. 295).

Corvus senex Lesson, *Voy. Coquille Ois*, p. 650, 1828 (not 1826), teste Mathews *Austr. Av. Record*, ii, p. 52. Dorey, New Guinea.

47 examined.

Adults.—From my examination of the above series I am convinced that the pale birds are the adults and the darker birds are the young, though I admit this is by no means certain.

¹ This greenish tinge is not always apparent in *Corvus mexicanus ossifragus* unless specimens are compared. Even then the differences between *C. m. ossifragus* and *Corvus brachyrhynchus palmarum* are not always apparent.

A most untidy and variable bird. In freshly-moulted plumage they vary from dull purplish and slightly glossy violet above to pale brown with a whitish head. Under-parts vary from dull brownish black to pale hair-brown. In all cases the bases of the nape feathers are white. Lanceolation of throat feathers absent. Nasal bristles scant leaving nostrils uncovered. Face almost bare. Culmen strong and highly arched.

Immature.—Dull violet-brown, duller and paler on the head and neck. Under-parts hair-brown. Nasal bristles well developed and almost covering nostrils. Face covered with bristle-like feathers.

Soft Parts.—Iris blue or whitish blue. Bill fleshy white with or without a blackish tip. Feet flesh to pale horn.

Measurements.—Wing 306–350, culmen length 61–75, height 26–29 mm.

Distribution.—Apparently the whole of New Guinea, both on the coast and in the hills. Birds examined from Konstantinhafen, Owen Stanley Range, Snow Mountains, Sattelberg, Dorey, Astrolabe River, Port Moresby, and Humboldt's Bay. Also Salwatti, Waigiu, Goodenough, Fergusson, and Jobi Islands.

Corvus hawaiiensis.

Corvus tropicus Bloxham in *Byron's Voy.*, p. 250, 1826. Sandwich Islands. Nomen nudum.

Corvus hawaiiensis Peale, *U.S. Explor. Exped. Orn.*, p. 106, 1848. Karakakna Bay, Hawaii.

18 examined.

Adults.—General colour of plumage dull lead colour without gloss, but with traces of a violet tinge, especially on the head. Primaries dark hair-brown. Base of nape feathers dove-grey. Throat feathers hair-like with stiff shafts. No trace of lanceolation. Nasal bristles cover the nostrils and are inclined to be fan-shaped. They extend to half-way along the culmen barely covering its frontal base. Bill strong and stumpy.

Soft Parts.—No record.

Measurements.—Wing 286–321, culmen length 54–63, height 26–28 mm.

Distribution.—Sandwich Islands.

Corvus fuscicapillus.

Corvus fuscicapillus G. R. Gray, *P.Z.S.*, 1859, p. 157. Dorey, New Guinea.

8 examined.

Adults.—Whole head and neck brownish, slightly tinged with violet. Remainder of upper-parts glossy violet-blue. Under-parts dark violet. Bill massive with strongly curved maxilla. Nostril groove ill-developed, the nasal bristles barely covering the nostrils and scarcely reaching to half-way along the culmen. Ridge of culmen at base covered by minute bristles. Bases of nape feathers snow-white. Lanceolation of throat feathers absent.

Immature.—None examined. Described by Hartert as "whitish, then more or less dusky."

Soft Parts.—Iris pale to ultramarine blue. Bill and feet black.

Measurements.—Wing 328–344, culmen length 78–79, height 27 mm.

Distribution.—Waigiu, Aru Islands, and extreme west of Dutch New Guinea.

Corvus validus.

Corvus validus Bonaparte (ex Temm. MS.), *Consp. Av.*, p. 385, 1850. Ceram, Gilolo. Salvadori (*Ornith. Papuasia*, ii, p. 493) states there is no such specimen in the Leyden Museum, whence Bonaparte described the bird, from Gilolo or Ceram, but that *C. validus* inhabits Sumatra, Java, and perhaps Timor. On this account authors have usually accepted this name as a synonym of one of the *enca*-group.

But Büttikofer (*Notes Leyden Mus.*, 1897, p. 185) definitely states that the type is in the Leyden Museum and that it came from Halmahera (Gilolo). He also states that the types of *validus* and *validissimus* are one and the same bird, "*validus*" having been erased by Temminck himself, and the name "*validissimus*" substituted in its stead. If this is correct—and I think we must accept it—*validus* must take priority over *validissimus*. As there is but one member of the Crow family in Halmahera, there can be no confusion as to which is intended.

Corvus validissimus Sehlegel, *Bijdr. Dierk. Amsterdam*, pt. 8, p. 12, 1859. Dodingo, Gilolo, Molucca Islands.

13 examined.

Adults.—Upper-parts range from greenish steel-blue on the forehead to violet on the nape and neck, and violet-purple on the wings, back and tail. Lower parts suffused with violet. Throat and chin greenish steel-blue. Bases of nape feathers snow-white. Bill strong and well arched. Nasal bristles well developed, covering the frontal base of the culmen as in the *coronoides*-group, straight and reaching to half-way along culmen. Nostrils in ill-developed groove.

Soft Parts.—No record.

Measurements.—Wing 330–362, culmen length 72–83, height 25–28.

Distribution.—Halmahera (Gilolo). Also Obi, Batehian, and Morty Is. *C. validus* is closely allied to the *enca*-group, but its massive and differently-shaped bill seems to give it specific rank.

Corvus enca.

This group differs from the *coronoides*-group in having a distinct violet tinge on the under-parts, which is invariably absent in the *coronoides*-group. The bases of the nape feathers are invariably white. The bird is usually smaller with a slenderer bill. The throat feathers are less lanceolated. The frontal base of the culmen is invariably bare, whereas in the *coronoides*-group it is invariably concealed by nasal bristles.

Post-ocular region usually bare.

This group is restricted in distribution to an area bounded on the west by the Malay Peninsula and Sumatra, to Java, Celebes, Ceram, Palawan, and the Philippine Group. Except in Celebes, Palawan, and Ceram, members of the group live alongside one or other of the forms of the *coronoides*-group. It seems possible that in Java and Sumatra a certain amount of hybridisation occurs between these two groups.

Corvus enca compiler.

Corvus tenuirostris Moore, *Cat. B. Mus. E. Ind. Comp.*, ii, p. 558, 1858 (nec Brehm 1855). Type examined. The bird was collected by Kittoe and the locality on the label is "Bombay." Wing 312, culmen length 65, height 23 mm. There is no doubt about the bird belonging to this race of *enca*. Blyth (*Ibis*, 1863, p. 368) gives the locality as Malacca.

? *Corvus fallax* Brüggemann, *Abhandl. Ver. Bremen*, v, p. 76, 1878. Species indeterminable. Described from a Rosenberg skin without locality. Wing 335-340, culmen length 65, height 22 mm. Base of feathers whitish grey.

Corvus compilator nom. nov. Richmond, *Proc. U.S. Nat. Mus.*, xxvi, p. 518, 1903.

31 examined.

Adults.—Above glossy violet purple. Below a paler and duller violet-black.

Base of nape feathers white.

Soft Parts.—No record.

Measurements.

Specimens	Locality.	Wing.	Length.	Culmen.	Height.
3	Straits Settlements	315-322	67		21-22
13	Sumatra	282-334	56-68		21-25
13	Borneo	282-344	57-71		22-27
2	Labuan	297, 312	62		22

The following measurements are given by Kloss :

Specimens.	Locality.	Wing.	Height of Culmen.
6	Perak, Pahang, and Selangor	304-324	20-22.7
9	Sumatra	298-322	20.5-23
2	Borneo	308-315	22, 23

Distribution.—Malay Peninsula (Johore, Selangor, Penang, Pahang), where they are less common than the *coronoides* representative. Sumatra, Borneo, and Labuan. Also Simalur and Nias Islands, west of Sumatra.

Corvus enca enca.

Fregilus enca Horsfield, *Trans. Linn. Soc*, xiii, p. 164, 1822. Java.

8 examined, including the type.

Adults.—Smaller than *compilator*, otherwise identical.

Soft Parts.—" Iris dark, bill and feet black " (Kloss).

Measurements.—Wing 270-299, culmen length 55-59, height 20-22.

Kloss gives the wings of 4 Javan specimens as 272-282, and height of culmen as 16.5 to 19 mm.

There is a bird in the British Museum, which is possibly a hybrid with *C. coronoides macrorhynchus*, having a wing 342, culmen length 66 and height 26 mm.

Distribution.—Java. Mentawi Islands, west of Sumatra (Kloss, *Ibis*, 1926, p. 293).

Corvus enca subsp.

32 examined.

Adults.—Near *C. e. enca*, but even smaller, and generally darker. Bases of nape feathers white. Differences not sufficiently constant to warrant separation.

Measurements.—Wing 259-296, but mainly between 259 and 284. Culmen length 50-56.57, height 19-22 mm.

Distribution.—Birds examined from Celebes (27), Bali (1), and Sula Islands (4).

Corvus enca violaceus.

Corvus violaceus Bonaparte, *Consp. Av.*, i, p. 384, 1850. Ceram.

Corvus modestus Brügg., *Abhandl. Natur. Verein Bremen*, v, p. 77, fig. iii, 1876, no locality. Type in the Darmstadt Museum. A young bird (*teste* Stresemann, *Nor. Zool.* xxi, p. 153).

14 examined.

Adults.—Duller and less glossy violet-blue on the upper and under-parts than either *C. e. enca* or *compiler*. There are traces only of gloss on the forehead and crown. Bases of nape feathers white. No lanceolation of throat feathers.

Measurements.—Wing 233–250, culmen length 45–50, height 19–21 mm.

Distribution.—Apparently confined to Ceram.

Corvus enca pusillus.

Corvus pusillus Tweeddale, *P.Z.S.*, 1878, p. 622. Puerto Princeza, Palawan.

8 examined, including the type.

Adults.—Similar to *violaceus*, but a paler and greyer violet below, and an intenser violet above. A slight sheen on plumage.

Measurements.—Wing 225–251, culmen length 48–52, height 19–20 mm.

Distribution.—Palawan and Balabac Islands.

Corvus enca subsp.

5 examined.

Adults.—Generally glossier than either *pusillus*, *violaceus* or subsp. ?, especially on the crown and forehead.

Measurements.—Wing 231–250, culmen length 49–52, height 20–22 mm.

Distribution.—Apparently confined to Mindoro.

Corvus enca samarensis.

Corvus samarensis Steere, *List Birds and Mammals, Steere Exped.*, p. 23, 1890. Samar, Philippines.

2 examined, including the type.

Adult.—General plumage a deep violet-blue with a strong sheen.

Measurements.—1 from Samar (type) wing 225, culmen length 52, height 22 mm. 1 from S. Mindanao, wing 214, culmen length 47, height 22 mm.

Corvus typicus.

Gazzola typica Bonaparte, *Compt. Rend.* xxxvii, p. 828, 1853. The type undoubtedly came from Celebes. See Meyer and Wieglesw. *B. Celebes*, ii, p. 584.

Corvus advena Schlegel (nec Brehm), *Bijdr. Dierk. Amsterdam* fol. sp. *Corvus*, p. 3, pl. ii, 1848–54. Sumatra (in error).

9 examined.

Adults.—Head glossy deep blue-black, inclining to brownish on the throat. A broad collar and under-parts to vent, white. Remainder of upper-parts, wings, vent and tail, dull glossy blue or purplish black. No lanceolation on

throat feathers. Nasal bristles ill-developed and not completely covering nostrils. Post-ocular triangle bare.

Soft Parts.—No record.

Measurements.—Wing 199–217, culmen length 42–45, height 19–20 mm.

Distribution.—Apparently confined to the South-east Peninsula of Celebes. Birds examined from Macassar, Indrulaman, and Bonthain Peak, 6,000 ft.

Corvus unicolor.

Gazzola unicolor Rothschild and Hartert, *Bull. B.O.C.* xi, p. 29, Nov. 1900. Banggai, Sula Islands, east of Celebes.

2 examined, including the type. Both these specimens are in the Tring Museum and appear to be "trade" skins prepared by natives, neither having any reliable data attached. There are no specimens in the British Museum. Perhaps a race of *Corvus enca*.

Adult.—Whole plumage glossy deep blue-black, intenser on the forehead and duller on the under-parts. Nasal bristles ill-developed, and only just covering nostrils. Ridge of culmen bare at base. Tail very short (104–109) and falling far short of tips of wings.

Measurements.—Wing 205.208, culmen length 45.43, height 21.19 mm.

Distribution.—Banggai ?

Corvus florensis.

Corvus florensis Büttikofer in Max Weber's *Reise Nederl. Ind.*, p. 304, 1894. Flores.

1 examined, collected by A. Everett, at Tring. The specimen is a female with wing 227, culmen length 45.5, height 20 mm. Similar to the *enca*-group, but the nasal bristles are better developed and completely cover the frontal base of the culmen. Nostrils in a deep groove. General plumage a clearer and purer violet than any of the *enca*-group, and lacking the bluish tinge of the latter. Post-ocular region bare. Probably a race of the *enca*-group.

Distribution.—Only 2 specimens known from Flores.

Corvus kubaryi.

Corvus kubaryi Reichenow, *J. f. O.*, 1885, p. 110. Type at Berlin with a wing of 225 mm. It is said to have been collected by Kubary at Pelew Island, but as this bird has not since been obtained on the island, it seems more likely that it came from the neighbouring Caroline or Marianne Groups, whence birds prove to be identical with Reichenow's type (cf. Hartert, *Novit. Zool.* v, p. 59).

15 examined, including the type.

Adults.—All specimens which I have examined are in such a poor state that an accurate description would be impossible. They are possibly all in immature plumage. General plumage dull and almost without gloss. Head dull greenish-black, back dull purplish blue-black. Under-parts dull greenish black. Base of nape feathers white. No lanceolation to throat feathers. Nasal bristles short, but covering nostrils and the base of ridge of the culmen. Bill slender, as in the *enca*-group.

Soft Parts.—

Measurements.—Wing 217–243, culmen length 47–55, height 19–23 mm.

Distribution.—Birds examined from Guam (Marianne Group) and the Caroline Islands. Probably does not occur on Pelew I.

Corvus meeki.

Corvus meeki Rothschild, *Bull. B.O.C.* xv, p. 21, 1904. Bougainville, Solomon Islands.

9 examined, including the type.

Adults.—Similar to the *woodfordi*-group, but with very intense gloss, the greenish blue of the head being replaced by greenish purple. Under-parts glossy purple. Bases of nape feathers whitish. Culmen heavy and strongly curved. Nasal bristles, unlike the *woodfordi*-group, meet over the ridge of the culmen.

Soft Parts.—Iris brown, bill and feet black.

Measurements.—Wing 265–300, culmen length 64–72, height 25–28 mm.

Distribution.—Apparently confined to Bougainville of the Solomon Group. Though at first sight this species seems a geographical race of the *woodfordi*-group, the different colour of the head, glossy under-parts, colour of iris, and the meeting of the nasal bristles over the culmen would seem to give it specific rank.

Corvus woodfordi vegetus.

Macrocorax vegetus, Tristram, *Ibis*, 1894, p. 30. Bugotu, Solomon Islands.

8 examined.

Adults.—Head and neck glossy greenish blue, the rest of the upper-parts purplish blue. Under-parts almost glossless greenish blue. Bases of nape feathers whitish. Culmen massive and strongly curved. Nasal bristles reach to half-way along culmen, but do not cover the vertex.

Soft Parts.—Iris dirty white, feet black, bill milky-white with pinkish tint and a black tip.

Measurements.—Wing 280–299, culmen length 63–70, height 27–30 mm.

Distribution.—Isabel Island, Solomon Group.

Corvus woodfordi woodfordi.

Macrocorax woodfordi Ogilvie Grant, *P.Z.S.*, 1887, p. 332. Guadalcanar, Solomon Islands.

15 examined.

Adults.—Similar to *vegetus*, but with an intenser sheen and generally more brilliantly coloured. Occasional traces of purplish on the crown. Under-parts as in *vegetus*. Bases of nape feathers whitish. Nasal bristles as in *vegetus*.

Soft Parts.—Iris dirty white to grey, feet black, bill bluish white with a pinkish tint and a black tip.

Measurements.—Wing 265–290, culmen length 59–65, height 25–27.

Distribution.—Guadalcanar and Choiseul, Solomon Islands.

Corvus moneduloides.

Corvus moneduloides Lesson, *Traité*, p. 329, 1831, no locality. I cite New Caledonia as type locality.

12 examined.

Adults.—Whole plumage glossy violet-blue, inclining to a deeper and more purplish tint on the head. Bases of nape feathers dark grey. Bill stumpy and not unlike that of the jackdaw (*C. monedula*), the lower mandible curving up sharply towards the tip. Nasal bristles straight and completely covering the nostrils, which lie in a groove. Ridge at base of culmen covered. No lanceolation of throat feathers. Upper mandible straight and with but slight curve.

Soft Parts.—No record.

Measurements.—Wing 238–260, culmen length 39–50, height 19–22 mm.

Distribution.—Apparently confined to New Caledonia.

Corvus monedula monedula.

Corvus monedula Linn. *Syst. Nat.* ed. x, p. 106, 1758. Sweden.

Adults.—Plumage generally black glossed with deep purplish blue on the crown. Ear coverts, nape, hind-neck, and sides of face pale lead-grey. Mantle lead-black glossed with blue. Secondaries and wing-coverts with a purple gloss. Under-parts dark ash-grey. Base of nape feathers grey. Bill short and stumpy, with but little curve on the cutting edges of the mandibles. Nostrils in a pit, not in a groove. Nasal bristles well developed and reaching to beyond proximal half of culmen.

Immature.—Generally a browner bird with less gloss.

Soft Parts.—Iris in adults bluish white, in immature birds brown. Bill of adults black in immature birds brown. Feet black in both adults and immature birds.

Measurements.—Wing of 9 birds 230–252 mm., culmen 31–38 mm.

Distribution.—Scandinavia south of lat. 63½ North. Believed to be resident. Is said to be the breeding bird in Lithuania (Saechtlen).

Corvus monedula spermologus.

Corvus spermologus Vieillot, *Nouv. Dict. d'Hist. Nat.* viii, p. 40, 1817. Southern France.

Monedula turrium Brehm, 1831. Central Germany.

Monedula ar'orea Brehm, 1831. Renthendorf, Germany.

Monedula vulgaris alticeps, planiceps, crassirostris, occidentalis, Brehm 1866. Nomina nuda.

For details of above see Hartert, *Vög. Pal.* i, p. 16.

Monedula septentrionalis, Brehm, *Handb. Naturg. Vög. Deutschl.*, p. 173, 1831. Elsinore (Helsingör), Denmark.

Adults.—Very near the typical race, but under-parts darker, which is distinct only in a series. The grey on the neck is usually also darker. Immature birds and soft parts as in *Corvus m. monedula*.

Measurements.—Wings of 54 birds vary from 224 in females to 248 in males. Culmen 31–38 mm.

Distribution.—Generally western Europe from Denmark and East Prussia, the United Kingdom and south to Gibraltar and Italy. Eastern limits as yet undefined. Formerly a common resident in Malta, now scarce.

Migration.—Usually moves with rooks, but sometimes in large flocks of its own species. Appears to be a regular migrant from the northern parts of its range, moving from the end of September to early November. Passage to or from Ireland has not been recorded. Has straggled to the Canary Islands, Algeria, and is a scarce winter visitor to Corsica.

Corvus monedula soemmeringii.

Corvus soemmeringii Fischer, *Mém. Soc. Imp. Nat. Moscou*, i, p. 3, 1811. Moscow.

Corvus collaris Drummond, *Ann. & Mag. Nat. Hist.* xviii, p. 11, 1846. Macedonia.

Corvus ultracollaris Kleinschmidt, *Falco*, xiv, p. 16. Naryn in Turkestan. Wing of type 255 mm., an abnormal giant.

Adults.—Paler under-parts than *C. m. spermologus* and nearer *C. m. monedula*, but differs from the latter in having a more distinct, larger and whiter neck and spot at sides of neck. The race is very variable and individuals occur in

western Europe and Scandinavia which cannot be distinguished from this race. Similarly from the same breeding colony of *C. m. collaris*, both in Kashmir and Palestine, examples cannot be distinguished from Swedish or British examples.

Soft parts as in other races.

Distribution.—Finland, the whole of Russia, Macedonia, and the Balkan Peninsula south to Greece, Cyprus, Asia Minor, the Caucasus, Kurdistan, Palestine, Persia, Turkestan, and Kashmir.¹ East in Siberia to the Yenesej Valley. Perhaps breeds on the Suez Canal near Suez (Nicoll MSS.).

Migration.—Occurs in winter in East Prussia. Large flocks visit Palestine and Iraq in winter. Also a winter visitor to southern Afghanistan, northern Baluchistan, and the Punjab.

Table of Measurements of Corvus m. soemmeringii.

Number.	Locality.	Wing.	Culmen.
3	Finland	235-246	32
1	Moscow	246	32
1	Petchora R.	245	33
9	Central Russia	233-244	32-33
1	Irtysch	244	33
7	Macedonia	223-242	31-35
8	Constantinople	224-239	31-36
2	Armenia	227-241	30-34
4	Cyprus	229-240	31-35
3	Palestine	228-234	31-33
5	Iraq	225-242	32-35
6	Southern Afghanistan	229-239	32-33
3	Samarkhand	219-241	29-34
6	Yarkand and Kashgar	222-230	30-33
3	Gilgit	233-243	31
1	Western Tibet	226	32
57	Cashmir	223-252	31-37
8	Migrants to N.W. India	228-236	30-33
1	Ladak	230	32

Corvus monedula cirtensis.

Coloeus monedula cirtensis Rothscl. & Hartert, *Nov. Zool.* 1912, p. 471. Northern Algeria.

Adults.—They differ from *C. m. spermologus* in having a paler pure slate under-surface. The hind-neck is duller grey and the crown not quite so purplish. As birds become worn the primaries become brown, which has the effect of a golden-brown tinge to the wings when birds are in flight in the sun. Soft parts as in other races.

Measurements.—Wings of 23 birds 225-244 mm.

Distribution.—Confined to northern Algeria.

*Corvus dauuricus dauuricus.*²

Corvus dauuricus, Pall., *Reise Russ. R.*, iii, *Anhang.*, p. 694, 1776. Lake Baikal Region.

Corvus fuscicollis, Vieillot, *Tabl. Enc. et Meth. Orn.*, ii, 1823. Baikal.

Corvus capitalis Wagler, *Syst. Av.* "*Corvus*," sp. 19, 1827 (ex Pallas).

Corvus neglectus Schlegel, *Bijdr. Dierk. Amsterdam*, p. 16, 1859. Japan. Based on *Corvus dauuricus* *juv. Faun. Jap.*, pl. 40.

68 examined.

Adults.—Crown black glossed with purplish, mantle glossy blue-black, wing-coverts with a purple gloss. Tail black with blue and green sheen. Sides

¹ Is a permanent resident in prodigious numbers in the Vale of Kashmir, hundreds of thousands roosting in winter in the poplar-trees near Srinagar. A straggler to Ladak.

² Since writing the above I am inclined to consider *C. dauuricus* a race of *C. monedula*.

of face and ear-coverts greyish white. Chin and throat black. Rest of underparts and a broad collar white or brownish white. Base of feathers grey.

Kleinschmidt and Weigold (*Falco*, 1921, xvii, p. 2) and Kleinschmidt (*Abh. u. Ber. Mus. Dresd.*, xv, 1922, No. 3) consider the dark form of this species (*neglectus*) to be the second normal plumage. Nestlings apparently resemble adults, being white below but moult into their first plumage by assuming the dark phase (*neglectus*). An examination of the specimens in the British Museum neither proves nor disproves this assertion, as there are no certain birds in nestling plumage nor in moult.

La Touche (*Ibis*, 1923, p. 308) found both the pied and black forms breeding in the same colony in Yunnan, and obtained young of both forms. The young of the black form has a dirty grey hind neck which is moulting into black, whilst the young of the pied form is yellowish white which changes after the first moult into white with a grey tinge. This does not confirm Kleinschmidt's contention.

The dark phase has no white collar which is replaced by deep grey, the underparts being ashy or dirty grey or brownish, showing much variation.

Soft Parts.—Iris greyish brown, bill and feet black.

Measurements.—Wings of 68 vary from 220 in females to 243 in males. Culmen 29–35 mm. All birds measured are from Manchuria, Mongolia, Corea, Japan, and western China. La Touche (*Ibis*, 1923, p. 308) gives the wings of 13 S.E. Yunnan birds as from 216 in females to 241 in males.

Distribution.—

Summer quarters.—Breeds from Irkutsk on Lake Baikal to the junction of the Ussuri and Amur Rivers and thence to the Sea of Japan, but not reaching to the mouth of the Amur or Sea of Okhotsk. Breeds commonly in Manchuria, but not so far south as Corea or Peking. Colonies occur in the south-east Altai and throughout Mongolia, Kansu, Szechwan, and eastern Yunnan.

Migration.—Most birds move south in winter, but some remain in or near their breeding haunts. They have been noted in winter at Urga and at Saissansk on the Upper Irtysh, the latter locality being the most westerly point from which the species has been recorded. In Yunnan birds do not appear to leave their breeding stations except to wander locally.

Summer visitors to Manchuria leave in September and arrive in southern China in October and November, passing through Corea in large numbers, and on autumn passage they are abundant at Peking.

In winter they are common as far south as the Yangtse and have straggled to Formosa. A rare winter visitor to Japan, mainly in the south.

On spring passage birds appear to move north in late February, passage continuing throughout March, and occasionally extending to early and even the third week in May. In North China and Manchuria birds arrive at their breeding stations in early March.

After the severe winter of 1856, the first spring migrant to arrive in Trans-Baikal was a bird of this species on 6.iii.

***Corvus dauuricus khamensis*.**

Coloeus dauuricus major Bianchi, *Ann. Mus. St. Petersburg*, viii, p. 11, 1903. Nomen nudum.

Coloeus dauuricus khamensis Bianchi, *Bull. B.O.C.*, xvi, p. 68, 1906. Kham in S.E. Tibet.

1 examined, an adult female, dark phase, collected by Bailey 150 miles N.E. of Sadiya (Assam) on 25.vi.1911, and now in the British Museum.

Adults.—Said to be larger only than the typical form. Wings vary from 248–251. Weigold, who collected 10 specimens, gives wings as from 230–249. It seems likely that the form may prove to be sound, but it requires confirmation.

Bailey's specimen, mentioned above, should belong to this form, but has a wing of 236 mm.

Distribution.—South-east Tibet.

Corvus coronoides.

Stresemann (*Verh. d. Orn. Ges. Bayern*, May 1916) reviewed this group, and with slight modification I am inclined to agree with the placing of all these crows under one group, the oldest name for which is *Corvus coronoides*. From the huge *Corvus c. japonensis* to the smaller races from Ceylon and Australia there is perfect intergradation in both colour, size and shape of bill, whilst they all agree in such essential characters as nasal bristles, wing formula and general structure.

The great interest in the *coronoides*-group is the fact that the surface colour of the plumage, the tint of white or grey at the base of the plumage and the colour of the iris, varying as it does from dark brown to white, do not constitute specific characters, the most perfect intergradation existing within the group. None of these characters appear to be stimulated by environment.

The distribution of the group is also instructive. Borneo and Celebes contain no representative. Otherwise, with the exception of a few small islands, the group extends through south-eastern Asia from the mouth of the Amur to Turkestan, south to Ceylon and Tasmania and east to New Britain. In the Malay Peninsula, Java, Sumatra, and the Philippines, the group lives alongside members of the smaller *enca*-group. A study of the group and its distribution throws little light on the lines of dispersion or origin, except that it is probable that dispersion has taken place from the East Indian Archipelago or Australia, assuming a northerly and north-westerly direction. Thus only can the avoidance of Borneo and Celebes be accounted for. The group is tree and jungle-loving, and the deserts of Rajputana, Sind, Afghanistan, Central Asia, and the Gobi Desert appear to have offered an effective barrier to further dispersion.

Whilst agreeing with Stresemann in uniting all these crows within one group, I am unable to recognise certain of his races, namely “*hassi*,” “*mandshuricus*,” “*perplexus*” and “*ceciliae*,” whilst the name “*madarasz*” must be replaced by an older name of Madarasz—“*anthracina*.”

The group is not difficult except for its Australian representatives, which have received the most confusing treatment at the hands of Australian Ornithologists.

Gmelin was probably (*Syst. Nat.*, i, p. 365, 1788) the first to name the Australian bird—*Corvus australis*—but the description and locality are so vague as to defy identification and the name has been rightly rejected by recent authors. Then in 1826 Vigers and Horsfield described a crow from near Sydney as *Corvus coronoides*. The type is in the British Museum and has the grey bases to the nape feathers. Then in 1901 North described a crow from Moolah in western New South Wales as *Corvus bennetti*, the main distinctions being the smaller size, white bases to the feathers and less lanceolated throat feathers. So far, so good. That gave us a large bird with grey feather bases and strongly lanceolated throat feathers and a smaller bird with white feather bases and a less lanceolated throat.

The former inhabited roughly a line south of the Dawson River to Central South Australia and thence to about Perth, the latter living north of that area.

In April 1911 Mathews turned his attention to Australian Crows, confusing the issue and creating nomenclatural havoc. In a brief note in the *Emu* of 1911, p. 326, Mathews replaces the preoccupied name "*australis*" by "*mariannae*," using as a type a bird from Gosford near Sydney. In January 1912 the crows of Australia received a stimulating upheaval at the hands of Mathews. He apparently decided that there were three species of crows in Australia, one of which he calls a raven, the other two remaining crows. The so-called raven became "*mariannae*" and the two crows received the names "*coronoides*" and "*bennetti*." The raven was divided into four races and the crows each into three races. Thus Mathews gave us ten forms of *Corvus* in Australia. The list of types of Australian *Corvidae* should now be consulted in Appendix C.

With the fever of new races upon him, only three months later, Mathews describes yet another form from Western Australia under the name *Corvus ceciliae marngli*, thus creating a fourth species and the eleventh subspecies of Crow in Australia.

But all this was altered in 1913 when Mathews in his *List of the Birds of Australia*, p. 313, used the name "*coronoides*" for the so-called ravens, and divided them into three races, namely, *Corvus c. coronoides* from New South Wales, *Corvus c. perplexus* from Victoria, South Australia, and South-West Australia, and *Corvus c. tasmanicus* from Tasmania. He still recognises two species of so-called crows, the smaller being divided up into *Corvus bennetti bennetti* from the interior of New South Wales and South Australia, and *Corvus bennetti bonhoti* from Northern Territory and interior of Western Australia. The larger crow he retains in three races, namely *Corvus ceciliae ceciliae* from N.W. Australia and Northern Territory, *Corvus c. marngli* from Western Australia, and *Corvus c. queenslandicus* from Queensland and northern New South Wales. It is obvious that during 1912 and 1913 Mathews' mind was not crystallised on the subject of crows, but when in 1920 Mathews describes yet another race as *Corvus ceciliae hartogi* from Western Australia because many of the feathers are brown and not black, one is compelled to treat the author with but scant seriousness. I have not examined the type of this last race, but it probably is a young or very worn adult in full moult, hence the parti-coloured plumage.

Stresemann rightly ignored most of Mathews' races, recognising but one species of crow in Australia which he divides into four races—*Corvus coronoides coronoides*, *perplexus*, *bennetti*, and *ceciliae*, whilst admitting that the Tasmanian bird may be distinct. He also admits that a field study of Australian Crows might induce him to revise his conclusions.

So here we have great diversity of expert opinion, Mathews with his 3 species and 8 subspecies, and Stresemann with his 4 subspecies, all forms of a single species.

Having examined over 220 crows from Australia it is clear that birds from any one locality show great individual variation, a common phenomenon not only among the crows of the world but among many other birds. But in only one case does a bird with grey feather bases occur where the predominant type have white feather bases. This is a bird shot at Normanton in Queensland which is of the type called "ravens" by Mathews, the predominant type being birds

with smaller wing measurement and white feather bases. This is the only really puzzling specimen of the whole series examined. But it would be unreasonable to allow one bird out of over 220 to influence a general deduction based on such a large series.

Mathews based his contention that there are both "ravens" and "crows" in Australia on an assertion that those who know them well in the field can recognise the two birds by their call, and seldom make an error when shooting them. I am unable to accept this statement on the evidence of specimens. In the Mathews' Collection collectors have sometimes differentiated between "crows" and "ravens" on the labels, asserting in some cases that the note is different. In all such cases the "ravens" have been fully adult birds, whilst the "crows" have been immature or not fully adult birds. We all know that young rooks and young ravens have calls distinctive from adults. Further comment appears to be unnecessary. Moreover, I am told by Mathews that he himself is unable to distinguish between the call of a "raven" and "crow." So it seems that the distinction is not very apparent.

The original error on which all Mathews' work in this respect is based was failure to recognise that the colour of the base of the feathers is a sub-specific guide and not a specific character. I know of no species of crow which covers a large area, where the bases of the feathers do not show variation, in some cases slight, in others considerable. The second error into which Mathews fell was failure to recognise that there is great individual variation in size among crows from the same area. The third error was that he did not realise that in adults the throat feathers are more lanceolated and elongated than in birds not so adult. And the final error was the faulty application of misleading field work to scientific ornithology. Of the perpetuation of such errors by the inflation of an already congested synonymy, I have nothing to say.

In examining the series of skins at Tring and in the British Museum, nearly all the birds with dark feather bases have well-developed throat hackles, whilst birds with white feather bases have poorly developed throat hackles. Moreover, except for the one Normanton specimen mentioned above the distribution of birds with snow-white feather bases is very marked as against the distribution of others with feather bases varying from greyish white to dark grey. Somewhere about Gawler Ranges the two forms meet and both occur. Also among the larger birds without snow-white feather bases, occur every gradation of colour of the feather bases from greyish-white to dark grey, and every gradation of throat hackles from huge pointed elongated feathers to rounded short feathers.

On colour of feather bases I therefore divide the Australian Crows into two forms, those with snow-white bases living in an area north of a line from just north of Perth in the west, thence to about Gawler Ranges and east to the extreme northern coast of New South Wales, and birds without snow-white feather bases living south of that line and in Tasmania.

Stresemann appears to have come to an identical conclusion, but further divides the birds with white feather bases into a smaller eastern race (*C. c. bennetti*) and a larger western race (*C. c. ceciliae*), and he divides the birds with grey or greyish-white feather bases into a smaller western race (*C. c. perplexus*) and a larger eastern race (*C. c. coronoides*). Let us see if this can be justified. For detailed measurements see Appendix D.

MEASUREMENT OF BIRDS WITH SNOW-WHITE FEATHER BASES.

Specimens.	Locality.	Wing. mm.	Culmen :	
			Length. mm.	Height. mm.
64	Queensland and the extreme north of New South Wales	288-354	46-61	19-26
11	Northern Territory	285-357	47-62	18-27
11	North-Western Australia.	296-361	47-62	19-26
9	Northern Western Australia	298-345	47-63	19-25

It is true that an average measurement gives one a considerable difference, but on the above measurements, I doubt whether separation can be justified in a genus which shows such remarkable individual diversity in size throughout the world.

MEASUREMENT OF BIRDS WITHOUT SNOW-WHITE FEATHER BASES.

Specimens.	Locality.	Wing. mm.	Culmen :	
			Length. mm.	Height. mm.
39	New South Wales.	302-379	49-62	20-26
45	Victoria	305-360	47-60	20-25
7	Tasmania	336-357	60-67	23-25
15	Southern South Australia	295-351	49-60	19-25
10	South-Western Australia	298-347	46-56	20-23

The smallness of western birds is here more marked, but with an overlap of 45 mm. separation cannot be justified.

I am therefore unable to admit that there are more than two races of Australian crows, a northern form with snow-white feather bases and a southern form with grey or whitish-grey feather bases.

Corvus coronoides japonensis.

Corvus japonensis Bouaparte, *Consp. Av.* i, p. 386, 1850. Japan. Type locality designated by Stresemann as Yesso.

Corvus macrorhynchus mandschuricus Buturlin, *Mess. Orn.* iv, No. 1, p. 40. March 1913. Ussuriland.

30 examined from Japan and 11 from N.E. Asia.

Adults.—The largest of the group approaching in size the smaller forms of *Corvus corax*. Forehead, crown, and nape dull black with a slight oil-green tinge and inclined to steel-blue on the forehead. Remainder of upper parts violet purple paler on the wings. Primary coverts inclined to greenish. Throat feathers purplish steel-blue with a suggestion of green. Remainder of under-parts dull steel-blue with a purplish tinge. Base of nape feathers dark grey. Throat feathers distinctly lanceolated.

Soft Parts.—Iris dark brown, bill and feet black.

Measurements.—Birds from Japan have wings 325-388, length of culmen 67-79, and height 28-34. Birds from Corea, Ussuri, and Amurland have wings 337-364, culmen length 60-75, height 26-31. The supposed differences between this race and *mandschuricus* is only apparent in the size of the culmen. Some Japanese birds run very large, but by far the majority are similar to Manchurian specimens. Doubtless in a large series the Japanese birds will average larger, but I do not consider the differences warrant separation.

Distribution.—Japan. Birds seen from Yesso, Hondo, Kiushiu, Tanega, Yakushima, Hakodate, Southern Kurile Islands and Saghalien. Mainland specimens examined from Corea, Amur Bay, Amur- and Ussuriland. Also Tsushima (?).

Birds from Bonin Island.—There are two birds from Bonin Island in the British Museum which are slightly less purplish (more violet) on the upper-parts, and with a more deeply curved culmen. These probably constitute a new form.

Corvus coronoides colonorum.

Corvus sinensis Moore ex Gould MSS. (nec Gmelin, 1788), *Cat. Birds East Ind. Coy.* ii, p. 556, 1858.

Shanghai. Type examined. Specimen in full moult and labelled Pootoo (near Shanghai). ♂ 12.viii.1850. Wing 337, culmen 67 mm.

Corvus colonorum Swinhoe, *Ibis*, 1864, p. 427, Sawo Harbour, north-east Formosa.

Corvus hassi Reichenow, *Orn. Monatsb.*, 1907, p. 51. Tsingtau.

18 examined from northern China and southern Manchuria.

21 examined from southern China and Formosa.

Adults.—Similar in colour of plumage to *japonensis* with a slightly more blue mantle, not so purplish. Under-parts not so dark as in either *andamanensis* or *levaillantii*. Base of nape feathers dark grey, and darker than in any of the Indian or Melanesian forms.

Soft Parts.—Iris dark brown. Legs, feet and bill black.

Measurements.

Specimens.	Locality.	Wing. mm.	Culmen.	
			Length. mm.	Height. mm.
18	N. China and S. Manchuria	299-350	52-63	20-26
12	Mainland S. China	310-350	57-68	24-29
9	Formosa	320-350	52-62	23-25

Distribution.—Birds examined from Peking, southern Manchuria, Chiukiang (Kiangsu), Foochow, Fohkien, Lower Yangtse, Yangtse Big Bend, Shanghai, Swatow, and Formosa.

Corvus coronoides connectens.

Corvus coronoides connectens Stresemann, *Verh. Orn. Ges. Bayern*, xii, p. 281, 1916. Miyakoshima, Riu Kin Islands. Type in the Tring Museum.

15 examined, including the type.

Adults.—An unsatisfactory race. Plumage similar to *japonensis* and *colonorum*, but culmen usually longer and slenderer, though of similar height. Wing averaging smaller. Base of nape feathers dark grey.

Soft Parts.—Iris dark brown, bill and feet black.

Measurements.—Wing 310. 318-337. Culmen length 55-68, height 21-24.

Distribution.—Birds examined from Miyakoshima and Okinawa in the Riu Kin Islands.

Corvus coronoides osai.

Corvus macrorhynchus osai Ogawa, *Annot. Zool. Japon.* v, pt. 4, p. 196, 1905. Kohamashima, in the southernmost Riu Kin Islands. Type at Tring.

12 examined, including the type.

Adults.—Merely a dwarf form of *colonorum*, which it resembles in every respect except size.

Measurements.—Wing 270-295, culmen length 51-55, height 19-21 mm.

Distribution.—The most southerly Riu Kiu Islands or Yayeyama Group, namely Ishigaki, Kuro, Kohama, and Aragusuku.

Corvus coronoides intermedius.

Corvus intermedius Adams, *P.Z.S.*, 1859, p. 121, Kashmir, Dagshai, and Simla. Kashmir apud Stresemann.

Corvus coronoides tibetosinensis Kleinschm. & Weigold, *Abh. und Ber. Zool. Mus. Dresd.* xv, 1922, No. 3, p. 2. S.E. Tibet and Sifan Region, in the subalpine forests. Based on two specimens. ♂ wing 375, ♀ wing 348 mm. A race of *Corvus* based on the size of two specimens only can scarcely be accepted without further confirmation. Possibly synonymous with *C. c. japonensis*.

Over 50 examined.

Adults.—Similar in plumage to *japonensis*, but with paler grey or even whitish bases to the nape feathers, which are, however never snow-white. Birds from the central and eastern Himalayas tend to have whiter bases to the nape feathers than others from Gilgit and Kashmir. Smaller than *japonensis*. Throat feathers lanceolated, though not so much as in *japonensis* or *colonorum*.

Soft Parts.—Iris dark brown. Bill and feet black.

Measurements.—Wing 301–365, usually between 318 and 345. Culmen length 54–62, height 23–25 mm.

Distribution.—Chinese Turkestan (rare), Gilgit, Baltistan, south to Kashmir¹ and Attock on the Indus, thence east along the Himalayas through Simla (common), Nepal and Sikkim. Eastern Tibet, ascending to over 12,000 feet.

Corvus coronoides levaillantii.

Corvus levaillantii Lesson, *Traite d'Orn.*, p. 328, circa 1831. Bengal.

Corvus culminatus Sykes, *P.Z.S.*, 1832, p. 98. Deccan. A very small specimen which I cannot accept as pre-occupying *madraszi*, as all other birds from the Deccan are of the type *levaillantii*, *culminatus* being an aberrant specimen and not typical. Similar dwarf examples occur at Simla, Etawah, Ahmednuggar, etc., but are exceptional.

Over 50 examined.

Adults.—Upper-parts as in *intermedius*, but the under-parts an intenser and blacker blue. Base of nape feathers never so pale as in *intermedius*, but rarely so dark as in *japonensis* or *colonorum*. Bases usually darker than in *andamanensis*.

Soft Parts.—Iris dark brown, bill and feet black.

Measurements.—Wing 280–315, culmen length 55–62, height 21–25 mm.

Distribution.—The whole of India east of the Sutlej Valley, east to Bengal, north to the base of the Himalayas, Rajputana (central and eastern), and south at least to Madras and the Nilgiri Hills. The border-line between this race and *madraszi* is indefinite, the two races interlapping over a wide area.

Corvus coronoides andamanensis.

Corvus andamanensis Beavan ex Tytler MS., *Ibis*, 1866, p. 420. Andamans. Nomen nudum. Idem, *Ibis*, 1867, p. 328. Andamans, first description.

Corvus coronoides mengtszensis La Touche, *Bull. B.O.C.* xliii, 1922, p. 80. Mengtsz. A name given to the intermediate form where *C. c. andamanensis* and *colonorum* meet.

47 examined.

Adults.—Upper-parts as in *intermedius*, *levaillantii*, and *colonorum*. Under-parts dark and intense as in *levaillantii*. Bases of nape feathers medium grey, never so dark as in *colonorum* and never so pale as in *intermedius*, but usually paler than in *levaillantii*. This character is very variable in this race and many

¹ Apparently absent from Ladak.

specimens are indistinguishable from *levaillantii*. Throat feathers poorly lanceolated.

Soft Parts.—Iris dark brown, legs, feet, and bill black.

Immature.—No throat lanceolation and with dark grey bases to feathers of nape.

Measurements and Distribution.

Specimens.	Locality.	Wing. mm.	Culmen.		Bases of nape feathers.
			Length. mm.	Height. mm.	
24	Andamans	294-310	51-60	24	Whitish grey.
1	Assam	335	63	27	Medium grey.
2	Naga Hills	300, 309	61	26	1 whitish. 1 medium grey.
1	Mt. Victoria	312	61	24	Almost white.
1	Manipur	330	62	28	Whitish grey.
2	Lower Pegu	300, 330	61, 67	24	Dark grey and closely resembling <i>colonorum</i> .
1	Moulmein.	329	64	23	Whitish grey.
7	Malay Peninsula	300-335	60-69	23-26	Whitish grey.
3	Annam	282-336	55-64	23-26	Whitish grey.
1	Bangkok	330	65	27	Whitish grey.

Two birds from Yunnan are intermediate between this race and *colonorum* in every respect. In the Malay Peninsula this race seems to extend south to lat. 11° South, where *macrorhynchus* commences.

Robinson and Kloss (*Journ. Nat. Hist. Soc. Siam*, vi, 1923) consider the Bangkok Crow to be intermediate between *andamanensis* and *macrorhynchus*.

Corvus coronoides anthracinus.

Corone anthracina Madarasz, *Ann. Mus. Nat. Hungar.* 8, 1911, p. 420. Ceylon.

Corvus coronoides madaraszii Stresemann, *Verh. Orn. Ges. Bayern.*, xii, p. 285, 1916. Colombo, Ceylon. Type examined.

8 examined from Ceylon and others from S. India (see below).

Adults.—Resembles *levaillantii*, but the lower parts are even more intense and with a distinct violet tinge. Bases of nape feathers dirty white or pale grey. Hackles poorly lanceolated. Smaller.

Measurements.—Wing 283-304, culmen length 52-58, height 20-25 mm.

Distribution.—Ceylon and extreme Southern India. A bird from the Wynaad is intermediate with *levaillantii* with wing 274, culmen length 56 and height 22. Three birds from Belgaum and near Belgaum approach this race with wings 275-285, culmen length 51-54, height 21-22, but in colour they more nearly approach *levaillantii*. Similar birds occur rarely in the Nilgiris and are probably wanderers from the surrounding plains.

? **Corvus coronoides hainanus.**

Corvus coronoides hainanus Stresemann, *Verh. Orn. Ges. Bayern.*, xii, p. 286, 1916. Hoihow, Hainan.

17 examined, including the type.

Adults.—Of doubtful distinction from *colonorum*. Bases of nape feathers dark grey as in *colonorum*. Perhaps a larger bird.

Measurements.—Wing 327-365, culmen length 58-72, height 22-29.

Distribution.—Confined to Hainan.

Corvus coronoides macrorhynchus.

Corvus macrorhynchus Wagler ex Temm. *MS. Syst. Av. Corvus* sp. 3, 1827. Java. Type in the Munich Museum.

Corix timorensis Bonaparte, *Compt. Rend.*, 37, p. 829, 1853. Timor.

19 examined.

Adults.—Very near *andamanensis*, but with slightly more violet on the upper parts and with the bases of the nape feathers whiter, occasionally snow-white. Birds from Sumatra have the bases as a rule whiter than others from Java, Timor, etc.

Soft Parts.—Iris brown, bill, feet and legs black.

Measurements.—Wing 322–364, culmen length 62–71, height 23–27 mm.

Distribution.—From south of lat. 11 in the Malay Peninsula, throughout Sumatra (very rare), Java, Flores, Lombok, Timor, Bali, Sumba. One obtained Labuan (Stresemann).

Birds from Wetter Island.—Two birds from Wetter Island have wings 322 and culmens measuring 65 long and 24 high. The bases of the nape feathers are almost snow-white. The mantle is markedly less violet and more blue than either *macrorhynchus* or *philippinus*. Possibly an undescribed race.

Corvus coronoides orru.

Corvus orru Bonaparte, ex *Mueller MS. Consp.* i, p. 385, 1850. Lobo Bay, New Guinea.

Corvus annectens Brüeggemann, *Abh. Ver. Bremen* v, p. 76, 1876. No locality. Type in Darmstadt Museum, wing 326 mm. Obtained at Goroutalo (Schneider), in Celebes (Sharpe, *Cat. B.M.* iii, p. 43). But does this race really occur in Celebes?

Corvus salvadorii Finsch, *Mitt. Orn. Vereins*, Wien, July 1884, p. 109. Port Moresby. Founded on *Corvus* sp. ? of Salvadori, *Annali Mus. Civico Genova*, xvi, p. 198, note. Said to be like *orru* but larger and darker with more steel-blue above, tail and primaries with green metallic sheen. I have seen 2 birds from Port Moresby and they agree with typical *orru*.

41 examined.

Adults.—Differs from *macrorhynchus* in having little or no green or bluish-green sheen on the upper parts, this being replaced by violet. The colour of the iris in adults is also never brown, but always blue or whitish-blue or greyish blue. Bases of nape feathers invariably snow-white in adults. Differs from *bennetti* in having an intenser gloss on the upper-parts and in being not so blue underneath.

Soft Parts.—Iris of adults blue or whitish blue, and in immature birds brownish grey. Feet and bill black.

Measurements.—Wing 293–349, culmen length 55–64, height 20–26 mm.

Distribution.—New Guinea. Also Goodenough, Waigiou, Salwattee, Ternate, Misol, Obi and Morty Islands, and the West Papuan Islands. The record from Celebes is probably an error.

Corvus coronoides insularis.

Corvus insularis Heinroth, *J. f. O.*, 1903, p. 69. Gazelle Peninsula, New Britain.

11 examined.

Adults.—Similar to *orru*, but smaller.

Soft Parts.—Iris pale blue or bluish white in adults, and according to Heinroth even in the young bird the iris is pale blue. Legs and bill black.

Measurements.—Wing 282–310, culmen length 52–63, height 21–24 mm.

Distribution.—New Britain and New Ireland, but I have not examined any specimens from the latter place.

Corvus coronoides philippinus.

Corvus philippinus Bonaparte *Compt. Rend.* xxxvii, p. 830, 1853. Philippines.

Corvus solitarius Kittlitz, *Reise n. d. Russisch. Amerika*, ii, p. 431, 1858. Maui. Nomen nudum.

Corvus brevipennis Schlegel, *Bijdr. Dierk. Genus Corvus*, p. 9, 1859. Philippines.

31 examined.

Adults.—Smaller than *macrorhynchus* or *orru*. Upper-parts more violet than in *levallantii* or *colonorum*, but not so violet as in *macrorhynchus*. Bases of nape feathers snow-white or nearly so.

Soft Parts.—Iris dark brown. Feet and bill black.

Measurements.—Wing 285–333, culmen length 58–69, height 21–25 mm.

Distribution.—Birds examined from Manila, Mindanao, Luzon, Negros, Zebu, Leyte, Bohol, Panay, and Sibutu. Apparently inhabits all the Philippine Islands except Palawan. Also the Sulu Archipelago.

Corvus coronoides latirostris.

Corvus latirostris A. B. Meyer, *Zeitschr. Ges. Orn.*, i, p. 199, 1884. Timorlaut.

9 examined.

Adults.—Slightly darker and bluer than *macrorhynchus*, and very near *bennetti* in colour, but the base of the bill is usually somewhat broader than in the latter race. Stresemann's contention that the throat haekles are longer does not hold good in the series I have examined. Bases of nape feathers almost snow-white.

Soft Parts.—Iris blue, bluish white, or white. Feet and bill black.

Measurements.

Locality.	Wing. mm.	Culmen :	
		Length. mm.	Height. mm.
5 from Tenimber Island	305-328	51-59	23-26
4 from Baba Island	316-343	56-61	24-27

Corvus coronoides bennetti.

Corvus bennetti North., *Vict. Nat.*, xvii, p. 170, 1901. Moolah. Western New South Wales.

Corvus coronoides ceciliae Mathews, *Nov. Zool.* xviii, p. 442, 1912. Napier Broome Bay, N.W. Australia.

Corvus bennetti bonhoti Mathews, *idem*, p. 442. Murehison, Western Australia.

Corvus bennetti queenslandicus Mathews, *idem*, p. 443. Dawson River, Southern Queensland.

Corvus ceciliae marngli Mathews, *Austr. Avian Record*, i, p. 52, April 1912. Marnge Creek. West Kimberley, North-West Australia.

Corvus ceciliae hartogi Mathews, *Bull. B.O.C.* xl, p. 76, Jan. 1920. Dirk Hartog I., W. Austr.

Adults.—Very near *C. c. orru*, but apparently even darker and bluer. Base of nape feathers snow-white. Throat haekles sharp and pointed, but not so fully developed as in *C. c. coronoides*.

Immature.—As the adult, but bases of feathers not quite so white.

Soft Parts.—Bill and feet black. Iris white, white and blue, or blue.

Measurements.

Locality.	Wing. mm.	Culmen :	
		Length. mm.	Height. mm.
Queensland, extreme north of New South Wales and Northern Territory	285-357	46-62	18-27
North-Western Australia and Northern Western Australia	296-361	47-63	19-26

For detailed measurements see Appendix D.

Distribution.—Generally north of a line running from lat. 30 S. in New South Wales, through Southern Australia near the Gawler Ranges, and thence west to the coast immediately north of Perth.

Corvus coronoides coronoides.

? *Corvus australis* Gmelin, *Syst. Nat.* 8, p. 365, 1788, "habitat in insulis maris australis" ex Latham Species indeterminable.

Corvus coronoides Vigors and Horsfield, *Trans. Linn. Soc.* xv, p. 261, 1826. No locality. Parramatta, New South Wales (Stresemann). Type examined.

Corvus affinis Brehm, *Isis*, 1845, p. 357. New South Wales (nec Shaw 1809, and Rueppell 1835).

Corvus mariannae Mathews, *Emu* x, p. 326, 1911. Gosford, near Sydney. New name for *Corvus australis* of Gould.

Corvus coronoides perplexus Mathews, *Nor. Zool.* xviii, 1912, p. 442. Perth, S.W. Australia.

Corvus mariannae mellori Mathews, idem, p. 443, 1912. Angus Plains, South Australia.

Corvus mariannae halmaturinus Mathews, idem, p. 443, 1912. Kangaroo Islands, South Australia.

Corvus mariannae tasmanicus Mathews, idem, p. 443. Tasmania.

Adults.—Outwardly similar to *C. c. bennetti*, but with usually larger and better developed hackles and never with snow-white feather bases on the nape. The former and latter are subject to great individual variation and every gradation can be found from long lanceolated throat feathers to others showing scarcely any sign of lanceolation. The bases of the feathers vary from whitish-grey to dark grey. Birds with the darkest grey feather bases usually have the most developed throat hackles.

Immature.—Hackles less developed and feather bases usually darker.

Juvenile.—No hackles and with dark feather bases. General plumage soft and brown.

Soft Parts.—Bill and feet black, iris white to brownish white.

Measurements.

Locality.	Wing. mm.	Culmen:	
		Length. mm.	Height. mm.
Birds from New South Wales, Victoria	302-379	47-62	20-26
Tasmania	336-357	60-67	23-25
Southern South Australia	295-351	49-60	19-25
South-Western Australia	298-347	46-56	20-23

For detailed measurements see Appendix D.

Distribution.—Generally south of a line running from lat. 30 South in New South Wales, through Southern Australia to a point on the coast of Western Australia just north of Perth. A specimen of this race has occurred at Normanton in North Queensland. Tasmania.

Corvus mexicanus mexicanus.

Corvus mexicanus Gmelin, *Syst. Nat.* i, 1788, p. 375. Mexico.

33 examined from Northern Mexico.

Adults.—Forehead, crown, and nape a deep glossy violet, the rest of the upper-parts bluer violet, blending into purple on the wings. Under-parts a deep glossy greenish indigo blue. Bases of feathers of the nape a medium grey.

Measurements.—Wing 236–270, culmen length 36–44, height 15–17 mm. Wing 231–259, culmen 37.5–42 (Ridgway).

Distribution.—Birds examined from Sonora, Presidio, Mazatlan, and Tepic in north-western Mexico, and from Nuevo Leon, Tamaulipas, and Tampico in north-eastern Mexico.

Corvus mexicanus ossifragus.

Corvus ossifragus Wilson, *Amer. Orn.* v, p. 27, 1812. Great Egg Harbour, New Jersey, U.S.A.

Corvus maritimus "Bartram" Coues, *Check List*, 2nd ed., 1882, No. 343. Nomen nudum.

17 examined.

Adults.—Similar to *C. m. mexicanus*, but much duller and slightly larger. Nasal bristles better developed. General plumage glossy blue-black, more violet at the forehead, and with sometimes a violet gloss on the crown. Under-parts deep glossy indigo blue with a distinct greenish tinge. This is very apparent if compared to any of the continental races of *Corvus brachyrhynchos*. This form is very near *Corvus brachyrhynchos palmarum* from the West Indies and is sometimes almost impossible to distinguish. The latter is, however, usually smaller and the mandibles are slightly more pinched, giving a slenderer appearance.

Soft Parts.—Iris brown, bill and feet black.

Measurements.—Wing 265–290, 264–300 (Ridgway). Culmen length 41–46, 39–45 (Ridgway). Culmen height 17–18.

Distribution.—Atlantic and Gulf Coast of the United States, including Florida. North to the Lower Hudson Valley and shores of Long Island Sound. Casual to Massachusetts: west along the Gulf Coast to Louisiana. The range extends inland to the Blue Ridge Mountains.

Corvus brachyrhynchos.

This species is tentatively divided into seven forms, two insular and five continental. Of the latter *Corvus b. caurinus* is easily recognisable, but the remainder are not so distinct. They are separated on an average measurement. If localities were erased from the labels it would, in the majority of cases, be quite impossible to determine to which form they belong. But as the material examined has not been very large, the forms have been accepted with a query.

Regarding the insular forms "*minutus*" and "*palmarum*" they have hitherto been regarded as two species. When specimens were first examined from Cuba, Haiti, and San Domingo, not the slightest difference was apparent, but the material being scanty, reference was made to American Museums, this view being confirmed. But it has since been pointed out that in a large series a slight difference does in fact exist; the two forms are therefore retained, but as races of the same species. These insular forms appear to fit in well with the "*brachyrhynchos*" group, and are treated as geographical forms of that species.

The interesting fact about this group is that they do not entirely conform to the usual principle that more northerly forms are larger than those from more southerly regions. "*Caurinus*" from the north-west is the smallest of the continental forms, and yet occurs in higher latitudes and colder climates than the larger forms.

Corvus brachyrhynchos brachyrhynchos.

Corvus brachyrhynchos Brehm, *Beitr. Vögelk.* ii, 1822, p. 56, "North America." Restricted locality Boston, Mass. (Howell, *Proc. Biol. Soc. Wash.* xxvi, p. 200).
Corvus americanus Aud., *Orn. Biogr.* ii, p. 317, 1834. "Common throughout the U.S.A."
Corvus frugivorus Coues, *Proc. Ac. Nat. Sci. Philad.* 1875, p. 346. Pennsylvania.

27 examined.

Adults.—Upper and lower parts glossed with deep violet blue. Primary coverts with traces of green. Bases of nape feathers medium to dark grey. Feathers of throat short, hairy, and not lanceolated. Nostrils in deep pit, not in a groove. Nasal bristles cover nostrils and basal vertex of culmen. 1st primary about equal to longest secondary, sometimes very slightly longer or shorter.

Soft Parts.—Iris dark brown, bill and feet black.

Measurements.—Wing 302–335, culmen 48–54 in length and 21–22 in depth. Wing 282–337, culmen 45–53 (Ridgway).

Distribution.—Eastern North America. Breeds from south-western Mackenzie, central Keewatin, central, Quebec, and Newfoundland.

Winters from near the northern boundary of the United States southwards.

It would appear that some specimens from Colorado can be referred to this race, or ? *C. b. paulus*.

? Corvus brachyrhynchos paulus.

Corvus b. paulus Howell, *Proc. Biol. Soc. Wash.* xxvi, p. 199, Oct. 1913. Alabama.

9 examined.

Smaller than the typical form and with a slenderer bill. Nearest to *C. b. hesperis*, but with a shorter wing and slightly larger bill. Wing of four males 285–300. A doubtful race.

Soft Parts.—As in *C. b. brachyrhynchos*.

Distribution.—South-eastern United States except Florida, north to the District of Columbia and South Illinois, and west to Eastern Texas. ? Bermuda.

Corvus brachyrhynchos pascuus.

Corvus americanus var. *floridanus* Baird, *Birds N. Amer.* p. 568, 1858. Southern Peninsula of Florida (nec Bonaparte 1828).

Corvus americanus pascuus Coues, *Auk*, xvi, 1899, p. 44. Southern Florida.

26 examined.

Adults.—Wing shorter than in *C. b. brachyrhynchos*, but bill and feet stouter.¹

Soft Parts.—As in *C. b. brachyrhynchos*.

Measurements.—Wing 295–325, culmen length 49–59, depth 22–23. Wing 279–324, culmen 48–55 (Ridgway).

Distribution.—Apparently confined to Southern Florida.

Corvus brachyrhynchos hesperis.

Corvus americanus hesperis Ridgw., *Man. N. Amer. Birds*, p. 362, 1887. Fort Klamath, Oregon.

22 examined.

Adults.—Similar to *Corvus b. brachyrhynchos*, but averaging smaller and with a slenderer bill.

¹ Perhaps inseparable from *Corvus b. brachyrhynchos* (cf. Bailey-Wilson, *Bull.* xxxv, No. 3, 1923, pp. 148–9).

Soft Parts.—As in *C. b. brachyrhynchos*.

Measurements.—Wing 284–325, culmen 43–51 and once 54. Wing 278–325, culmen 43–50 (Ridgway).

Distribution.—Western United States generally from Puget Sound, Idaho, and Montana, east to the Rockies and south to northern Mexico, Arizona, and Colorado. In the latter place birds inseparable from the typical form occur.

***Corvus brachyrhynchos caurinus*.**

Corvus caurinus Baird, *Rep. Expl. and Surv. R.R. Pac.* ix, 1858, p. 569. Fort Steilacoom, Washington.

11 examined.

Adults.—Under-parts dead black or with very slight purplish gloss. Upper-parts glossed with dull purplish or violet. Base of nuchal feathers dull grey. 1st primary about equal to or slightly shorter than the longest secondary. Nasal bristles straight and reaching to about half the culmen, and covering the frontal base. Throat feathers with a slight indication of lanceolation.

Soft Parts.—As in *Corvus b. brachyrhynchos*.

Measurements.—Wing 268–282 (256–292 of Ridgway), culmen 42–48 in length and 18–19 in depth.

Distribution.—Pacific coast of N. America from Kodiak Island and Kukak Bay in Alaska south through British Columbia to Vancouver and Washington State.

***Corvus brachyrhynchos palmarum*.**

Corvus palmarum Paul von Württemberg, *Erste Reise N. Amer.*, p. 68, 1835 (footnote). Cibao Mts., San Domingo.

Corvus solitarius Württemberg, *Naumannia* ii, 2nd part, p. 55, 1852. Haiti.

18 examined.

Adults.—General coloration deep violet blue-black, as in *Corvus ossifragus*, with purplish on the wings. Base of nape feathers dark grey. Throat feathers not elongated or lanceolated. Nasal bristles well developed, covering the nostrils and frontal base of culmen. Under-parts almost identical with *Corvus ossifragus*. Though so near *Corvus ossifragus*, this form and *Corvus b. minutus* are better placed as races of *Corvus brachyrhynchos*, as the bill is slightly more pinched at its tip, thereby agreeing more with that group.

More brilliant in colour than “*minutus*,” the reflections of the upper-parts and wings—especially the latter—being more bluish and purplish and less greenish. The under-parts are more glossy and more purplish, being less of a dead black. But all these differences are very slight and rarely apparent in single specimens.

Ridgway (*Birds N. and Mid. Amer.*, iii, pp. 258 and 276) states that “*palmarum*” is larger, wing 261, culmen 51, bill narrower and less high at base, basal bristles reaching far in advance of the nostrils. Of “*minutus*” he says—smaller, wing 233, culmen 43.5, bill more conical and higher at base. Nasal plumes reaching a little in advance of the nostrils. The first primary is also said to be relatively longer than that of “*minutus*.” I am unable to confirm any of these characters.

Soft Parts.—Iris brown, bill and feet black.

Measurements.—Through the great kindness of Mr. Outram Bangs, I am able to give the measurements of 31 specimens. Wing 232–260, culmen length 46–53, depth 17–19.

Distribution.—Haiti and San Domingo.

Corvus brachyrhynchos minutus.

Corvus minutus Gundlach, *J. f. O.*, 1856, p. 97. Cienfuegos on the south coast of Cuba.

I examined, and through the kindness of Mr. Outram Bangs the detail of 13 others obtained.

Adults.—Identical to *Corvus b. palmarum* in size and proportion. Also similar in plumage, but less glossed, the gloss less purplish, and with the underparts more dead black.

See also under *Corvus b. palmarum*.

Soft Parts.—Iris brown, bill and feet black.

Measurements.—Wing 233-260, culmen length 44-51, depth 15-19.

Distribution.—Cuba and the Isle of Pines. Now very scarce. Both this form and *C. b. palmarum* are forest birds, as are all other West Indian Crows. This form and “*palmarum*” are the only West Indian Crows which “caw”; all others, “*leucognaphalus*, *nasicus*, and *jamaicensis*,” babbling and chattering.

Corvus capensis capensis.

Corvus capensis Licht., *Verz. Doubl.*, p. 20, 1823. Cape of Good Hope.

Corvus segetum Temm., *Pl. col. genus Corvus*, p. 70, 1826. South Africa.

Corvus macropterus Wagler, *Syst. Av. sp. Corvus*, 1827. Cape.

Adults.—Whole plumage glossy blue-black with a slight purplish tinge, but never so purple as in *Corvus frugilegus*. In worn plumage the bluish sheen almost disappears, leaving a dark coppery oily appearance. First primary about equal to or slightly shorter than the longest secondary. Base of nape feathers dark grey. Throat and chin feathers of adults lanceolate. Culmen long and even slenderer than in *C. frugilegus*.

Immature.—Dull dark brown above and below. Tail and wings glossy as in adults.

Measurements.

Specimens.	Locality.	Wing. mm.	Culmen. mm.
19	South Africa, Zululand	318, 330-365, 380	57-73
3	Angola	321, 325, 355	62-65
12	Abyssinia.	330-378	57-69

Soft Parts.—Iris dark brown to almost black. Bill and legs black.

Distribution.—South Africa south of Rhodesia and the Congo. Also the highlands of Abyssinia.

Corvus capensis kordofanensis.

Corvus levaillanti Des Murs in Lefebvre, *Voyage en Abyssinie, Zool.*, p. 104, 1845. Abyssinia (nec Lesson 1831).

*Corvus capensis minor*¹ Schlegel, *Cat. Mus. Pays-Bas, Coraces*, 1867, p. 7, terra incog. (nec *C. corax minor* Brehm. 1860).

Corvus capensis kordofanensis Laubmann, *Verh. Orn. Ges. Bayern*, xiv, p. 103, 1919. Nom. nov. for *C. c. minor*.

Adults.—Similar in every respect to *C. c. capensis*, but smaller. This is an unsatisfactory race and probably should not be recognised. Birds from low-

¹ Type in Leyden Museum. Wing 290 mm. No locality.

lying tropical districts are, however, on the average smaller than others from South Africa and the highlands of Abyssinia.

Measurements.

Specimens.	Locality.	Wing. mm.	Culmen. mm.
2	Rhodesia	318, 340	57, 61
3	Kenya Colony	310-337	57-61
9	Sudan	300-320	57-64
3	Somaliland	302-311	59-63

Distribution.—I have not been able to examine specimens from the Congo or West Africa, where the bird probably does not exist. Fairly common in the more open country of Rhodesia, Nyasaland, Portuguese East Africa, Tanganyika Territory, Kenya Colony (but not reaching to the coast), Tropical Sudan (but not west of Lado), the shores of the Victoria Nyanza, and British Somaliland.

Corvus frugilegus frugilegus.

Corvus frugilegus Linn., *Syst. Nat.* ed. x, p. 105, 1758. Sweden.

Corvus predatorius Rennie in Montague's *Orn. Dict. Brit. Birds*, 1831. Substitute name.

Corvus agrorum Brehm, 1831. North and Central Germany.

Corvus granorum Brehm, 1831, on migration in Central Germany.

Corvus advena Brehm, 1831. Germany.

Corvus agricola Tristram, *P.Z.S.*, 1864, p. 444. Nablus, Palestine.

Corvus f. major, gregarius, longi-, angusti-, tenui-, crassirostris, planiceps Brehm, 1866. Nomina nud.

For full detail of above synonymy see Hartert, *Vög. Pal. Fauna*, i, p. 13.

Corvus frugilegus tschusi Hartert, *Vög. Pal. Fauna*, i, p. 14, 1910. Gilgit. Type at Tring.

? *Trypanocorax frugilegus ultimus* Sushkin, List and distr. birds R. Altai and N.W. Mongolia, p. 65 (1925, "Borderland of Russian Altai, Bukhtarma, Tarbagatai").

Adults.—Plumage black with violet-purple sheen. Face, lores, and chin bare. Bill slenderer and more elongated than in *Corvus corone*. 3rd primary equals or is slightly shorter than the fourth, whereas in the *corone*-group the 3rd primary equals the 5th or is between the 5th and 6th.

Immature.—Plumage a duller black with less sheen. Base of bill, lores, and chin feathered, and nostrils covered with bristles.

Soft Parts.—Adults, iris hazel, bill and feet black. Immature: Iris grey-green, bill and feet black.

Measurements.—Wing of 100 birds from Europe and Asia, 297 to 332 mm. Culmen 54 to 63 mm. Females run slightly smaller than males. I cannot recognise the differences ascribed to "*tschusi*," having examined 38 Indian and Mesopotamian specimens. The further east one goes the fewer adults have bare faces, probably because adults are later in assuming bare faces in the east than they are in Western Europe. In Palestine and Mesopotamia one often sees large flocks of birds with feathered faces, and in Persia the majority of breeding birds have their faces feathered.

Distribution.—Summer quarters. Generally Europe with exception of the Mediterranean Region and northern Scandinavia and Russia. Has straggled to Greenland and possibly to Spitsbergen in summer. Breeds east to the Irtysh River and the Bukhtarma Valley in N.W. Mongolia. Bred formerly in Palestine at Jerusalem and Nablus, but no longer does so. Also breeds in the Orkneys.

Autumn migration.—Rooks move in winter from all countries where the ground is habitually frozen, such as Scandinavia, Northern and Eastern Europe,

and Eastern Siberia. The east coast of England is invaded by large flocks from Central Europe from the latter half of September to the middle of November. Large flocks from Northern Europe reach Scotland during October. Autumn emigration has been observed in the Straits of Dover in September, these probably being British-bred birds.

Records of autumn passage in Southern Europe are fragmentary. Birds arrive in Cyprus about 18. xi, they leave their breeding stations in Armenia during the first week in October and arrive in Palestine from early to mid-November. Birds arrive in Iraq from the third week in Oct. till mid-November from a N.E. direction. At Gilgit they arrive during the third week in October, first arrivals being noted on 19. x. In the Punjab they arrive during the third week in October and are abundant by the end of the month. At Quetta they arrive in large flocks about the middle of November.

Winter Quarters.—British Islands, Western Europe south of Denmark and south to Spain (rare in western and south-western parts), and Northern Algeria, Sardinia, Corsica, Sicily, Greece, Asia Minor, Palestine, and Egypt. Almost absent in winter from Northern Germany and Prussia, rare in Poland. Southern Russia roughly south of lat. 50. Caucasia, Armenia, Iraq, south to Fao. North-Western Persia, Trans-Caucasia, shores of Caspian, Russian and Chinese Turkestan, Afghanistan, the Punjab, and Beluchistan. Northern Sind. Rare straggler to Malta and the Azores. Large flocks nearly every year wander far out into the West Atlantic, many perishing or eventually returning to land in an exhausted condition.

Spring Migration.—Birds commence arriving in Ireland from 18. iii to 22. iii. Birds move east from Eastern England from the second week in February to the third week in April. Northern European birds leave Scotland from the end of March to the first half of May, occurring in the Faroes and arriving in Scandinavia in late March or early April.

In Heligoland passage has been observed from 4. ii to the middle of April. Winter visitors leave Corsica in early March and Cyprus in the middle of March. The flocks which visit the Egyptian Delta in winter have not been observed after the end of March. Spring emigration from Palestine occurs from 5. ii, the last record being on 21. iii. Breeding birds commence arriving in Armenia during the last third of March and in Southern Russia in mid-March. Birds leave Gilgit in the third week in April, Quetta during March, and the latest record for Southern Afghanistan is on 24. iv. Winter visitors leave the Punjab from the second week in February to the end of March, the latest record being on 15. iv.

Birds leave Eastern Turkestan in early April.

Birds leave Iraq from mid-February and continue doing so till the end of April.

Winter visitors leave the south coast of the Caspian in the second half of March.

Corvus frugilegus pastinator.

Corvus pastinator Gould, *P.Z.S.*, 1845, p. 1. Chusan, China.

Adults.—Differ from *C. f. frugilegus* in always having the lores and chin feathered, shorter bill, tail and wing, and plumage of head and neck not so blue, but blacker. Soft parts as in *C. f. frugilegus*.

Measurements.—Wing of 47 birds 294-318, culmen 48-59 mm.

Distribution.—Summer Quarters. Generally N.E. Siberia, Manchuria, and China, west to Lake Baikal, Kansu, and the Chuya Plains in N.W. Mongolia. On passage only in Japan and Corea.

Migration.—A migrant from north of the Gulf of Pechili and Russia in Asia. No records of autumn migration. In spring they pass to their breeding grounds from the end of February to early April.

Winter Quarters.—Japan south of lat. 40. Corea, Southern Manchuria, Province of Chili, west to Szechuan and south to Canton. Formosa. There appear to be no records from south of Formosa. Very few appear to winter north of lat. 40.

Winter visitors arrive near Hongkong as early as 27. vii, and have been seen as late as 2. v.

Corvus leucognaphalus.

Corvus leucognaphalus Daud. in *Traité*, ii, p. 231, 1808. Porto Rico. Type in the Paris Museum. *Corvus erythrophthalmus* Bonaparte, *Compt. Rend.* xxxvii, p. 829 (ex Wurt. MSS.), 1853. San Domingo.

(*Corvus*) *dominicensis* Cory, *Auk*, iii, No. 2, 1886, p. 228. San Domingo.

10 examined from Haiti and 6 from Porto Rico.

Adults.—General plumage black with dull steel-blue gloss with traces of purplish or violet on the wings and mantle. Throat feathers slightly elongated. Bases of nape feathers in adults pure white and in immature birds dull white. Nasal bristles fall far short of the basal half of the culmen and barely cover the nostrils, though they incline up to cover the frontal base. I am unable to detect the slightest difference between birds from Haiti and Porto Rico.

Ridgway (*B. North and Middle Amer.*, iii, p. 258) says that Haiti birds are smaller with larger feet and that the plumage is more glossy.

Soft Parts.—Irides reddish-brown to bright orange-red. Bill and feet black.

Measurements.—Wing of 10 from Haiti 283–310, culmens 55–64 in length and 22–23 in depth.

Wings of 6 from Porto Rico 281–309, culmens 58–62 in length and 22–23 in depth.

Distribution.—Apparently confined to Porto Rico and Haiti, having become very scarce in the former locality.

It is interesting that Wetmore has recently identified bones from the Island of St. Croix as belonging to this species (*Proc. U.S. Nat. Mus.*, liv, 1918, p. 521).

Also a small extinct Crow named *Corvus pumilis* (Wetmore, *Proc. Biol. Soc. Wash.*, xxxiii, 1920, p. 81, and *Bull. Am. Mus. Nat. Hist.*, xlvi, 1922, pp. 327–328) has been described from Porto Rico, which is intermediate in size between *C. leucognaphalus* and *Corvus brachyrhynchos palmarum*. So in Cuba, Haiti, and Porto Rico we have two forms of Crow, the one large and the other small.

Corvus nasicus.

Corvus nasicus Temminck, *Pl. col.* ii, pl. 413, 1838. Cuba. Type in Leyden Museum.

3 examined.

Adults.—Entire plumage black glossed with dull violet, more purplish on head and wings: under-parts duller. Bases of nape feathers grey. Rectal and post-ocular regions naked. Nasal bristles inclined upwards, but short and scanty,

the nostrils being exposed. Nostrils in a cavity, and not in a groove. 1st primary slightly shorter than longest secondary.

Measurements.—Wings of 10, 262–301, culmen 44–58 mm. (Phillipps).

Soft Parts.—Iris brown, bill and feet black.

Distribution.—Cuba and Isle of Pines.

Corvus jamaicensis.

Corvus jamaicensis Gmelin, *Syst. Nat.* i, p. 367, 1878. Hills of Jamaica.

9 examined.

Adult.—General colour of plumage dull glossless lead-black with a faint greenish wash. Crown and wings with a bluish sheen. Bases of nape feathers dark grey. No lanceolation on throat. Nasal bristles incline to be fan-shaped and meet over the base of the ridge of the culmen, barely covering nostrils.

Soft Parts.—Iris greyish brown. Bill and feet black.

Measurements.—Wing 213–240, culmen length 44–49, height 18–21 mm.

Distribution.—Confined to Jamaica.

Corvus rhipidurus.

Corvus affinis Rüppell, *Neue Wirb. Fauna Abyssin. Vögel*, p. 20, 1835. Massowah and Shendi (nec *C. affinis*, Shaw 1809).

Corvus brachyurus Brehm, *J. f. O.*, 1854, p. 75. Luxor, Egypt. Type at Tring. Nomen nudum (nec *C. brachyurus*, L., 1766).

Corvus brachyrhynchos (*errore*) Brehm, *Vogelfang*, p. 414, 1855. Nomen nudum (nec *C. brachyrhynchos* Brehm, 1822).

Corvus brevicaudatus Müller, *J. f. O.*, 1855, p. 456. Nomen nudum.

Corvus rhipidurus Hartert, *Bull. B.O.C.* xxix, p. 21, 1918. New name for *Corvus affinis*.

Corvus brachycercus Hellmayr, *Verh. Orn. Ges. Bayern*, xiv, p. 131, June 1919. New name for *Corvus affinis*.

39 examined.

Adults.—In freshly moulted plumage the bird is black with a steel-blue sheen, more purplish on the scapulars and wing. As the plumage wears the plumage assumes an oily-blue or oily-purple or even a copper tinge, especially about the head, nape, chin, and throat.

Nasal bristles well developed, covering the nostrils and shaped like a fan. Bill short and strong. The tail is very short, falling well below the tips of the wings when closed. This gives the bird a curious bat-like appearance in flight.

Base of nape feathers white, base of mantle feathers dark grey.

Soft Parts.—Iris dark brown, bill and feet black.

Measurements.

Specimens examined.	Locality.	Wing, mm.	Culmen :	
			Length, mm.	Depth, mm.
11	Somaliland	361–402	53–59	21–26
8	Sinai to Baringo (Zedl.)	340–400	—	—
?	(Hartert, <i>Vög. Pal.</i> , p. 8)	340–370	50–60	—
5	Aden Protectorate	349–370	51–55	22–24
7	Abyssinia	375–402	53–61	23–27
1	Eritrea	382	59	25
3	Near Suakim	376–388	57	25
1	Kordofan	396	58	26
6	Dead Sea Depression	340–378	51–55	22–25
1	Upper Egypt	350	56	23

Distribution.—Local in the Dead Sea Depression, but not further north than Jericho. Abundant at Petra and towards Akaba. The hills of Central Sinai and the hills in the Aden Hinterland. Throughout British Somaliland. Abyssinia, parts of Upper Egypt and the Sudan, the western Red Sea Littoral and east to Lake Baringo and Mount Elgon. Recorded from Kavirondo in error. The Suk and Turkhana country in the Lake Rudolph Basin, and again in the Southern Sahara at Asben, but not south of Agades.

No migration recorded.

Though superficially this form looks very different to the group usually placed under the genus *Corvultur* (*crassirostris* and *albicollis*) there is in reality a marked affinity. In both, the wings project beyond the tail, the fan-shaped nasal bristles are common to both forms, the nasal grooving is similar, and it is not uncommon in *rhipidurus* to find traces of white fringes to the feathers on the hind neck and sides of the neck. *Rhipidurus* seems to connect *crassirostris* and *albicollis* with the forms usually placed within the genus *Corvus*. If it had not been for this it might have been necessary to keep *Corvultur* as a separate genus.

Corvultur albicollis.

Corvus albicollis Latham, *Ind. Orn.* i, p. 151, 1790. Africa. I cite Capetown as terra typica.

Corvus cafer Lichtenstein, *Cat. Rerum Natur. Hamburg.*, p. 9, 1793. "Terra Cafrorum."

Corvus vulturinus Shaw, *Gen. Zool.* vii, p. 343, 1809. Africa.

42 examined.

Adults.—Whole head deep bronze. A broad white nuchal patch which reaches to the upper back. Rest of upper and under-parts a fairly glossy blue-black. Frequently a few white fringes to the feathers of the upper breast which form an ill-defined and narrow necklace. Bill very strong and heavily curved. Both mandibles are tipped ivory-white. Nasal bristles fan-shaped as in *C. rhipidurus*. Throat strongly lanceolate.

Measurements.

Specimens.	Locality.	Wing. mm.	Culmen:	
			Length. mm.	Height. mm.
11	South Africa	392-420	58-66	31-36
13	Zambesi Basin	390-435	60-68	31-36
12	Kenya Colony, Uganda, and Kilimanjaro	400-447	59-73	33-37

Distribution.—South-West Africa around Windhoek and neighbouring coastline. Cape Colony except the extreme west, Orange River Colony, Natal, Transvaal, Rhodesia, Nyasaland (perhaps Portuguese East Africa), Tanganyika Territory, Kenya Colony, Uganda, and north to the southern border of Abyssinia. Absent from Somaliland, Congo, and Sudan, except in the very extreme south.

Birds examined from:

South Africa: Cape Town, Dielfontein, Knysna, Transvaal, Bloemfontein, and Zululand.

Nyasaland, Rhodesia, and Mashonaland.

Kilimanjaro.

Kenya Colony: Athi River, Mount Kenya, Lamu, Machakos, and Fort Hall.

Uganda: Ruwenzori, Kampala, Toro, and Lake Kivu.

In addition Reichenow (*Vög. Afr.*, ii, p. 640) records birds from Damaraland, Great Namaqualand, Natal, and Tanganyika Territory.

Corvultur crassirostris.

Corvus crassirostris Rüppell, *N. Wirb. Vög.*, p. 19, pl. viii, 1835-40. Abyssinia.

16 examined.

Adults.—Whole head and neck bronze, darker on the ear coverts, forehead, and front part of crown. A large white patch on the hind-crown and nape, frequently extending to a smaller patch on the back of the neck. Rest of upper-parts deep violet-blue, glossed and washed with copper. Under-parts less glossed and more coppery. Throat feathers strongly lanceolated. Bill even stronger than in *C. albicollis*. Nostrils in deep groove. Nasal bristles fan-shaped.

Measurements.—Wing 432-475, culmen length 81-91, height 49-47 mm.

Distribution.—The hills of southern Abyssinia, becoming rare away from hills but straggling to the neighbouring parts of British Somaliland, and the Sudan having been reported near Roseires (Hartmann, *J. f. O.*, 1854, p. 232) and from Galabat by Heuglin (*Orn. N.O. Afr.*, ii, p. 507).

Corvus cryptoleucus.

Corvus cryptoleucus Couch, *Proc. Acad. Nat. Sci. Philad.* vii, No. 2, p. 66, 1854. Tamanlipas, Mexico.

9 examined from Mexico, Texas, and Colorado.

Adults.—Whole plumage glossy blue-black with a purplish sheen on the upper-parts. Base of nape feathers snow-white. Nasal bristles well-developed and reaching well on to distal half of culmen and covering the proximal half of the vertex. First primary considerably longer than the longest secondaries. Feathers of throat short and not lanceolate. Wing 328.340-375, culmen 54-59 mm.

Soft Parts.—Iris dark brown. Bill and feet black.

Distribution.—The great Plains of North America from south-eastern Wyoming and Western Nebraska, south to Central Mexico: West through New Mexico and Arizona to the coast (Los Angeles) of southern California (Ridgway).

Corvus corax.

This group, inhabiting in various forms nearly the whole of the Northern Hemisphere, is instructive in conforming to two great principles. The first of these is that birds with a wide distribution show great variation, but that when that range is circum-polar the variation is not constant in any single locality. The second is that the group conforms absolutely with the environmental factor which induces variation, namely, birds from the high north or high altitudes are larger heavier-built birds than those from further south or lower altitudes, and also that birds from dry hot regions tend to assume the pale desert coloration.

Variation in the ravens seems to be due solely to environment, and this makes their distribution and classification a matter of great difficulty. Though the extremes are, of course, easy to identify it would be a brave man who attempted to define the demarcation between *Corvus tibetanus*, stretching, as I hope to show, from the Western Himalayas, through Central Asia, to North-East Siberia, Arctic America, and Iceland, and the true *Corvus corax* of Europe. Also the intergradation between *Corvus corax lawrencei* and *Corvus corax ruficollis* is so perfect in Persia and N.W. India that some specimens are impossible to identify

with certainty, whilst in south-eastern Europe and south-western Asia it is impossible to say where "*lawrencei*" begins and *Corvus c. corax* ends.

Crows, more than any other bird with which I am acquainted, show variation in size from the same locality far in excess of what is usual. A difference of 80 mm. or over 3 inches in the length of the wing is by no means rare in birds from the same place, whilst a difference of over 10 mm. or nearly half an inch in the length of the culmen is found among birds from precisely the same locality.

With such differences it is not surprising that authors have unduly separated the species into too many geographical races, sometimes on single specimens, and all too frequently on too small series.

Over 630 ravens from the Northern Hemisphere have been examined and measurements of many others have been obtained from American and Continental Museums and reliable literature. The detail of these birds, obtained from all sources, have produced the following conclusions, which should be confirmed by more material as it becomes available.

Corvus corax tibetanus.

Corvus corax littoralis (nec *C. littoralis* Brehm, 1831) Holboell in Kroyer's *Tidskrift*, iv, 1843, p. 390. Greenland, Labrador.

Corvus lugubris Agassiz, *Proc. Bost. Soc. Nat. Hist.* i, p. 188, 1846. Nomen nudum.

Corvus tibetanus Hodgson, *Ann. and Mag. Nat. Hist.* (2), iii, p. 203, 1849. Native Sikkim.

Corvus carnivorus "Bartram" Baird, *Rep. Pacific R.R. Survey*, ix, 1858, p. 560, partim. Coast of New Jersey.

Corvus corax kamtschaticus Dybowski, *Bull. Soc. Zool. France*, 1883, pp. 362-3. Kamtschatka.

Corvus corax behringianus Dybowski, *op. cit.*, p. 363. Behring Island.

Corvus grebnitskii Stejneger, *Proc. Biol. Soc. Wash.*, ii, p. 97, 1884. Commander Islands.

Corvus corax principalis Ridgway, *Man. N. Amer. Birds*, 1887, p. 361. St. Michael, Alaska.

Corvus corax ussuriensis Tacz., *Faune orn. Sib. Orient.*, i, p. 527, 1891. Russian Manchuria.

Corvus corax sibiricus Tacz., *op. cit.*, p. 526, 1891. East Siberia (nec *C. sibiricus* Gm.).

Corvus corax islandicus Hantzsch, *Orn. Monatsb.*, p. 130, 1906. Iceland.

Corvus corax europophilus Oberh., *Ohio Journ. Sci.* xviii (6), p. 215, 1918. Alabama, Eastern United States. Partim.

Corvus corax tschuiensis Sushkin, List and distr. birds Russian Altai and Mongolia, p. 64 (1925, C. & S.E. Altai, N.W. Mongolia).

Adults.—Whole plumage black. Crown glossed greenish or purplish, nape greenish black. Back glossed blue or slightly violet, chin glossed green, throat blackish more reddish-violet. Under-parts glossed green or indigo-blue. Tail glossed green or reddish violet. Secondaries and all wing-coverts glossed reddish violet.

Throat feathers much elongated and strongly lanceolated. Nasal bristles well developed and reaching to or beyond the basal half of culmen. Base of nape feathers dark to medium grey.

Soft Parts.—Iris dark brown, bill and feet black.

Measurements.—Ravens from North-East Asia, Arctic America, and Iceland have been named without reference to birds from the Himalayas. Iceland birds were separated from Greenland birds, on account of their smaller size. Greenland and Alaska birds have been separated as being larger than specimens from the United States. Birds from north-eastern Asia have been separated on very small series and without reference to birds from Central Asia. I can find no trace of any attempt to treat the group as a whole based on a large series. Hartert (*Vög. Pal.*, i, pp. 3-6) had very little material and had not seen either

"*ussurianus*" or "*kamtschaticus*." Hartert now is convinced that he must unite all the East Siberian ravens, but still has not critically compared them with either Arctic American or Tibetan birds.

An examination of the table of measurements given below exemplifies the wide range in size of topotypical "*tibetanus*," "*principalis*," "*islandicus*," "*ussurianus*," and "*behringianus*." Both giant and dwarf examples occur throughout Arctic America, North-East Asia, and Tibet, but the general size of wing and culmen agrees. No doubt if an average was struck in each locality differences would become more apparent, but no average is of any use unless a huge series is examined. On size alone some 90 per cent. of specimens would be indeterminable, and for this reason I am compelled to unite all these ravens under the oldest name "*tibetanus*."

Specimens.	Locality.	Wing. mm.	Culmen :	
			Length. mm.	Depth. mm.
23	Tibet, Himalayas, Pamirs	455-493	75-83	27-31
5 ¹	N. Western Himalayas	447-477	73-87	—
9	Ladak	442-505 ²	73-87	29-32
1	North Sikkim	467 ²	84	31
1	Trans-Baikal	451	69	27
1	Mongolia	432	69	27
2	Northern Japan	420, 450	69	27
8	North-East Siberia: Manchuria	410-451	71-82	26-34
2	Kurile Islands	430, 447	79, 82	31, 33
	Kamtschatka (none examined)	to 492 (teste Hart.)		
22	Commander Islands	405-460	67-89	24-30
18	Alaska	418, 431-455	68-90	24-31
4	Brit. Columbia, Vancouver	427-449	66-89	24-31
61	Greenland, Ungava, Mackenzie	411-484	72-94	27-35
14	Iceland	417-445	73-82	28-33

Apart from size, efforts have been made to separate and name examples on the wing formula. Taczanowski's "*ussurianus*" was based on a bird with the 1st primary longer than the 7th. Hartert (*Vög. Pal.*, i, p. 5) mentions a bird from the Kuriles with a similar long 1st primary. Of the 160 specimens examined of this large form, all have the first primary between the 7th and 8th, and the 2nd primary between the 5th and 6th, except in 4 cases as follows :

Amur Bay.—1st primary very slightly shorter than 8th.

Behring Island.—1st primary between 8th and 9th.

Kurile Islands.—1st primary between 8th and 9th.

Tibet.—1st primary equals the 8th.

Allowing, therefore, for an occasional aberrant specimen, I am unable to recognise separation on wing formula.

The strength and size of legs and feet have also been called in to help separation. Here again I find that the differences are individual, birds from Tibet exactly matching others from Iceland, Greenland, and Commander Island birds.

The breadth of the 1st primary near its tip is a purely imaginary difference, and is not constant in any area from which I have examined a series of over 10 specimens.

There is no difference in colour in birds from Iceland, Arctic America, North-

¹ Specimens from Lahul and Spiti, measurements supplied by Mr. Whistler.

² Measured in the flesh. About 8 mm. must be deducted to synchronise these measurements with those of a dried skin.

East Siberia, and the Himalayas. The under-parts are sometimes greenish and sometimes bluish. The difference appears to have nothing to do with locality. Buturlin (*Mess. Orn.* 1915, p. 107) thought Pamir birds had greener under-parts than Siberian specimens. The only Pamir bird I have seen has blue under-parts.

It is true I have seen no birds from Kamtschatka, but Buturlin, who compared a large series of Siberian birds, found that there was no difference (*Mess. Orn.*, 1915, p. 107).

I am therefore compelled to unite all the larger ravens under the oldest name—*tibetanus*, though I admit that it is unfortunate that the type locality of Iceland birds should be Sikkin. Such a paradox is inevitable.

Having reached this conclusion, the distribution of *Corvus corax tibetanus* still remains largely a matter of opinion. Being founded on size alone the race has a huge overlap with the typical form. Indeed, some specimens from the British Islands could easily have come from Tibet or Greenland. There is no hard and fast line demarcating their distribution.

Quite generally the distribution of *Corvus corax tibetanus* is Iceland, Greenland, Arctic America, Canada, and extreme north of the United States, Alaska, North-Eastern Asia south to northern Japan, Mongolia, and the Himalayas west to the Pamirs.

As far as is known there is only local movement in winter; others annually remain in the breeding quarters well north of the Arctic Circle throughout the winter. Breeds in the Himalayas up to at least 19,000 ft.

Susehkin (*Orn. Monatsb.*, 1915) refers birds from the northern and central Altai to the large race, but says birds from north-western Mongolia are quite different. The one specimen I have examined cannot be separated from Tibetan or Siberian birds. Scarce in Saghalien and northern Japan.¹ Very common in Kamtschatka. The furthest north-breeding locality seems to be in lat. 81° 44' at Cape Lupton (Nares, *Polar Seas*). Apparently absent from the Pribilof Islands. Is nearing extinction in the Northern United States.

Poljakow reports *Corvus corax kamtschaticus* from the Tarbagatai Range on the Upper Irtysh.

(?) *Corvus corax varius*.

Corvus varius Brünn., *Orn. Bor.*, p. 8, 1764. Faroes.

Corvus leucophaeus Vieill., *Nouv. Dict. d'Hist. Nat.*, viii, p. 27, 1817. Faroes.

Corvus leucomelas Wagler, *Syst. Av. Genus Corvus*, sp. 4, 1827. Faroes.

Corvus ferroensis Sehlegel, *Bijdr. tot de Dierk. Genus Corvus*, p. 6, 1858. Faroes.

6 examined (3 showing partial albinism).

Precisely similar to *Corvus c. tibetanus*, and with a whitish base to the feathers. Some specimens show partial albinism. I am unable with material available to confirm Hartert's contention that the body plumage is softer and without so much purple gloss.

Wing of 6, 405–434 mm. Hartert (*Vög. Pal. Fauna*, i, p. 4) records one of 440 mm. Culmen 82–87 in length and depth 29–31 mm.

Confined to the Faroe Islands. Albinistic varieties no longer occur.

¹ In the *Journal Coll. Sci. Imp. Univ. Japan*, xxiii, p. 60, Lonnberg includes *Corvus corax* in his list of birds known from Saghalien on the authority of Nikolski, who reported them as scarce. Professor Ijima did not record it. Kuroda (*Handlist of Japanese Birds*, 1922, p. 162) gives the habitat of *C. c. kamtschaticus* as Saghalin, Kurile Islands, and Hokkaido.

It seems very doubtful whether a race which shows an albinistic tendency should be recognised on that character alone. If it is not recognised *Corvus varius* takes precedence of *Corvus tibetanus*, for the Faroe Raven is nearer the latter than to *Corvus c. corax*.

Corvus corax corax.

- Corvus corax* Linn., *Syst. Nat.*, cd. x, p. 105, 1758. Sweden.
- Corvus maximus* Scopoli, 1769. Linnaeus' *Corvus corax*.
- Corvus clericus* Sparrm., 1876. Variety with white chin.
- Corvus sylvestris* Brehm, 1831. Renthendorf, Germany.
- Corvus peregrinus* Brehm, 1831. Renthendorf, Germany.
- Corvus littoralis* Brehm., 1831. Rügen.
- Corvus montanus* Brehm., 1831. Tyrol.
- Corax nobilis, pityocorax, planiceps, minor* Brehm., nomina nuda.
- Corax sylvestris minor* Brehm, *J. f. O.*, 1860, p. 233. Switzerland.
- Corvus corax dardaniensis* Gengler, *Orn. Monatsb.*, 1918, p. 110. Servia.

Adults.—Precisely similar to *Corvus corax tibetanus*, but generally smaller, some specimens being indeterminate.

Measurements.

Number examined.	Locality.	Wing. mm.	Culmen :	
			Length. mm.	Depth. mm.
17	British Islands . . .	394-445	74-84	28-32
2	Outer Hebrides . . .	387, 390	70, 71	29
19	Scandinavia.	405-445	72-85	29-33
4	Denmark	423-445	76-79	31-33
2	Switzerland	410-421	73-76	31
2	Hungary	415, 452	70, 78	29, 31
5	Macedonia (Stres.) . . .	384-438	—	—
2	Crete	424	75-77	30
1	Trebizond, Asia Minor . . .	—	—	—
1	Crimea	423	80	27
3	Yenesay Valley	410-432	71-80	27-29

Distribution.—Europe except Spain, Crete, north coast Asia Minor, and western Siberia as far as the Yenesay Valley.

No migration recorded, though birds occasionally wander in winter.

Corvus corax hispanus.

- Corvus corax hispanus* Hart. & Kleinschm., *Nov. Zool.*, 1901, p. 45. Aguilas, Murcia, Spain.
- Corvus sardus* Kleinschm., *Orn. Monatsb.*, 1903, p. 92. Sardinia.

Adults.—Similar to *Corvus c. corax*, but smaller. Bill strong and deep as in *C. c. corax* and markedly thicker than the bill of *Corvus c. tingitanus*. I am unable to distinguish from this race birds from Sardinia and Cyprus.

Measurements.

Locality.	Wing. mm.	Culmen :	
		Length. mm.	Depth. mm.
5. Spain	410-430	67-73	27-31
3. Sardinia	411-436	68-76	28-31
8. Cyprus	401-434	66-74	27-30

Distribution.—Generally distributed in Spain and Portugal, Sardinia and Cyprus, and Balearic Islands. Corsican birds are also said to belong to this race. ? Sicily and southern Italy.

Corvus corax tingitanus.

Corvus leptonyx Peale, *U.S. Expl. Exped.*, p. 105, 1848. Madeira. Identity uncertain. No raven occurs on Madeira.

Corvus tingitanus Irby, *Ibis*, 1874, p. 264. Tangier, Morocco.

Corvus corax canariensis Hart. & Kleinschm., *Nov. Zool.*, 1901, p. 45. Palma, Canary Islands.

Adults.—Differs from *Corvus corax corax* and *hispanicus* in its shorter stumper bill. Throat hackles less elongated and lanceolated. Plumage of upper-parts more inclined to a dark oily blue. Bases of feathers grey and usually darker than in *C. c. laurencei* and *ruficollis*.

Smaller wing than is usual in *C. c. corax*.

I am unable to distinguish from this race birds from the Canary Islands, which are said to have a slenderer though higher culmen and stronger feet, and less pointed throat hackles.

Measurements.

Locality.	Wing. mm.	Culmen :	
		Length. mm.	Height. mm.
19. Canary Islands	355-428	63-73	25-29
37. Morocco and Algeria	364-430	60-69	25-28
I. Sollum, Western Egypt	362	63	27

Distribution.—Canary Islands, Morocco, Algeria, Tunis, Cyrenaica, and to Mersah Matruh in western Egypt.

Corvus corax sinuatus.

Corvus sinuatus Wagler, *Isis*, 1829, p. 748. Mexico (ex Licht. MSS.).

Corvus cacalott Wagler, *Isis*, 1831, p. 527. Mexico.

Corvus major Paul v. Würt., *Erste Reise Nord. Amer.*, 1835, p. 294. Nebraska. Nomen nudum.

Corvus nobilis Gould, *P.Z.S.*, 1837, p. 79. Mexico. Type in the British Museum.

Corvus corax clarionensis Rothsch. & Hart., *Nov. Zool.*, ix, 1902, p. 381. Clarion Island, Revillagigedo Group, Pacific Coast of the United States. Type in the Tring Museum.

Corvus c. europhilus Oberh., *Ohio Journ. Sci.* xviii (6), p. 215, 1918. Alabama, Eastern United States. Partim.

Corvus corax richardsoni Miller and Griscom, *Amer. Mus. Novit.*, No. 184, p. 5, 1925. Nicaragua.

32 examined in the British Museum and the type of "*clarionensis*" at Tring.

Adults.—Similar to *Corvus c. tibetanus* from Canada, but smaller and more of the size of *Corvus c. corax*, but with a distinctly slenderer and proportionately longer bill.

Measurements.

Number examined.	Locality.	Wing. mm.	Culmen :	
			Length. mm.	Depth. mm.
1	Guatemala	441	72	31
18	Mexico	409-460	73-80	27-28
2	New Mexico	395, 440	71, 76	24, 27
1	Texas	418	71	28
2	Colorado	426-432	71, 77	27
4	British Columbia	399-410	65-70	27
1	New York	425	70	29
2	Ontario	418, 420	75, 76	29, 30

Oberholser's "*europhilus*" was claimed to be smaller than "*principalis*" and with a relatively longer bill. 41 birds had wings 380-450 and exposed

culmens of 64–76. Such a description exactly fits birds from Mexico and the southern United States. Ridgway's measurements of specimens from Mexico and the Western States are 386–459, culmen length 64–72, almost identical with Oberholser's measurements of "*europhilus*."

Rothschild and Hartert's "*clarionensis*" was based on a single worn specimen from Clarion Island, wing 395, culmen length 64, depth 23. To separate a race on size alone when only one specimen is available is always a risky undertaking, but to do so with a Crow is almost certain failure of having one's race substantiated. As can be seen from the above table, the specimen can be matched from New Mexico or nearly so. "*Clarionensis*" may or may not be a good race, but with the present material available it seems that it is not so. Hartert ("*Types in the Tring Museum*," Nov. Zool., xxvi, 1919, p. 125) upholds the race, supporting his claim with a bird from San Benedicte Island with a wing of 390 mm. But Ridgway (*B. North and Mid. Amer.*, iii, p. 265) cites a Benedicte bird with a wing of 400, culmen length 69 and depth 25, and a Santa Catalina bird with wing 412, and culmen length 71, depth 24.¹

With regard to the Nicaraguan bird recently described as *Corvus c. richardsoni*, I have examined one bird from this country (at Tring). It has an intenser violet tinge than any of the large series of *Corvus c. sinuatus* which I have examined. Mexican birds from the same locality show sometimes a violet tinge and sometimes a steel blue tinge, this depending to some degree on how the bird is held when under examination.

I am unable to follow Miller and Griseom in their remarks on the colour of American Ravens (*ibid.*, pp. 4, 5). An examination of the large series available in the British Museum and at Tring do indeed show that there is considerable variation in the iridescence of the plumage of Alaska and Greenland birds, many having the violet and many the steel-blue sheen, but no particular iridescence is constant in either the east or west of North America. Such differences in iridescence occur equally throughout the Himalayas in *Corvus corax tibetanus*. The "heavy, powerful feet" of the Greenland bird can be matched exactly by Tibetan and Alaskan birds, whilst several Greenland birds I have examined have legs no larger than "*sinuatus*" or the British Raven.

On the evidence before me I am unable to accept (even after examining over 600 Ravens) Messrs. Miller and Griseom's deductions.

Distribution.—N. Honduras, Guatemala, Mexico, Lower California, and generally the more arid regions of the United States south of lat. 45. North of this line birds rapidly tend towards the larger form—*tibetanus*, and no definite boundary can be given. Even within the area given for this form, birds occur which are inseparable from others from Alaska.

The area over which birds which are indeterminable or intermediate are found is immense. To promote such birds to subspecific rank is to my mind a wrong interpretation of the facts. They had better be shown as *C. c. tibetanus* > *sinuatus* or *C. c. sinuatus* > *tibetanus*, or *C. c. tibetanus* × *sinuatus*. But should there be any area where specimens are found to be constant and almost invariably determinable, then by all means name them. Such has not been the case, and I very much doubt whether further research will help us much.

¹ Ridgway (*B. North & Mid. Amer.* iii, p. 265), recognising "*clarionensis*," gives its range as Clarion and San Benedicte Islands, San Clemente and Santa Catalina Islands, and the Santa Barbara Group. Oberholser extends "*clarionensis*" over parts of south-western United States.

The danger of an average measurement among such birds as Crows must be apparent. A few dwarfs or giants in a series would appreciably alter an average figure and give misleading results. I would guarantee that the average figure of European Ravens' wings in American Museums, in the British Museum, and at Tring, would give three remarkable results, and the "average splitter" might with equal reason give these three series three different names.

Further, it cannot be right or scientific to give birds from any area a name when the majority of individuals cannot be identified with certainty if the locality were erased from the label. This applies to "*europhilus*," "*clarionensis*," and all the synonyms of "*tibetanus*."

Corvus corax laurencei.

Corvus laurencei Hume, *Lahore to Yarkand*, p. 335, 1873. Punjab.

Corvus subcorax Sewertzoff, *Turkest. Jevotn.*, p. 63, 115, 1873. North-west and south-east parts of Turcestan.

79 examined.

Adults.—In fresh plumage they are scarcely separable from *Corvus c. corax* and small examples of *Corvus c. tibetanus*, but the feather bases are usually whiter, the throat hackles shorter, and the upper parts with more of an oily wash. Birds soon change, assuming more or less copper colour on the nape, mantle, and throat. In worn plumage birds, especially from N.W. India, Beluchistan, and Persia, are sometimes indistinguishable from examples of *Corvus c. ruficollis*. In Palestine, however, where birds do not wear to such an extent, there can be no confusing the two races, which occur together at Jerusalem throughout the year except for a month or so when they are nesting.

Measurements.

Number examined.	Locality.	Wing. mm.	Culmen:	
			Length. mm.	Depth mm.
16	Palestine	396-446	66-80	27-30
5	Mesopotamia	419-440	70-80	27-29
1	Southern Kurdistan	434	79	30
5	South-east Persia	420-449	70-74	25-29
8	Northern Beluchistan	400-450	67-77	24-28
10	Southern Afghanistan	407-462	71-79	23-27
1	Chinese Turcestan	430	69	27
1	Teheran (Blanford)	455	—	—
3	Sind	389-430	66-70	23-26
13	Punjab	398-437	67-74	23-27
17	Rajputana	390-434	67-75	23-26

Birds from the last three localities average considerably smaller in wing and bill than more westerly birds.

Distribution.—Generally N.W. India from Rajputana to Sind and the Punjab, Beluchistan, East Persia, Iraq, Syria, and Palestine. Perhaps Asia Minor. Cyprus birds are nearer "*hispanus*" than "*laurencei*." Birds from East Greece are said to belong to "*laurencei*" (Reiser, *Orn. Balc.*, iii), but I have not seen specimens. Festa and Salvadori record this race from Rhodes Island.

Corvus corax ruficollis.

Corvus ruficollis Lesson, *Traité d'Orn.*, p. 329, 1831. No locality. The type is in the Paris Museum and probably came from the Cape Verde Islands. Pucherans' citation of "Cape" is an obvious error.

Corvus umbrinus Sundevall, *Oef. k. Vet. Akad. Forh. Stock.*, 1838, p. 199. Sennar (ex Hedenborg MSS.).

Corvus infumatus Wagner, *Munch. gel. Anz.* viii, 1839, No. 37, p. 301. "Egypt," but according to Parrot from El Tor in Sinai.

Corvus fuscicollis, nigricollis, crassirostris, minor Brehm., *Ferz. Samml.*, p. 3, 1866. Nomina nuda. *Corvus corax krausei* Zedlitz, *Orn. Monatsb.*, 1908, p. 178. El Tor in Sinai.

109 examined.

Adults.—Usually a slenderer bill than in "*laurencei*" and in fresh plumage with a copper tinge over the whole head and body plumage. Bases of feathers light grey to whitish or even paler than in "*laurencei*." As plumage becomes worn the copper tinge becomes accentuated. Nasal plumes often shorter than in "*laurencei*."

Immature.—As the adult, but with very small trace of a copper tinge, which is only assumed after the first autumn moult.

The wing of this form shows a slightly different structure to that of other forms. The 1st and 6th primaries are relatively shorter which gives a narrower, more pointed outline to the outstretched wing. This difference, though usual is by no means constant. The eggs of this race are also remarkable for their small size, being scarcely larger than those of *Corvus cornix* or *corone*. These and the fact that this form and "*laurencei*" are frequently found together has induced ornithologists to keep "*ruficollis*" as a separate species. But the two forms are not known to breed in the same area and they intergrade so perfectly that some individuals are indeterminable.

Measurements.

Specimens examined.	Locality.	Wing. mm.	Culmen :	
			Length. mm.	Depth. mm.
15	Cape Verde Islands . . .	363-378	61-64	20-24
7	Algerian Sahara . . .	366-389	63-68	21-24.5
15	South Algeria (Geyr) . . .	356-410	57-69	20-25
2	Asben, South Sahara . . .	408	—	—
1	Northern Nigeria . . .	384	64	22
2	Siwa Oasis, W. Egypt . . .	395, 406	66, 70	23, 24.5
7	Lower Egypt and Suez . . .	367-420	61-73	20-24
9	Upper Egypt . . .	365-418	64-73	21.5-25
5	Khartoum . . .	373-412	67-69	20-23
4	Socotra . . .	350-395	63-75	24-25
15	South Arabia, Muscat . . .	353-414	57-75	20-26
17	South Palestine . . .	366-412	61-68	21-25
10	East Persia and India . . .	370-413	62-70	21-25.5
12	Sinai Peninsula, Nekhl, Tor . . .	355-405	57-66	21-25

On these measurements I am unable to substantiate "*infumatus*." See also *Ibis*, October 1921, p. 623, where the question is further discussed in greater detail.

This race shows great variation, not only in size, but in the density of the copper tinge of the plumage, but such variation is not constant in any one area.

Distribution.—Generally from the Cape Verde Islands, throughout the

Sahara Desert to the Nile, but always in desert areas, and south to N. Nigeria at Sokoto to Sinai and the Dead Sea Depression. Absent from Petra, but present at Jerusalem, breeding in the vicinity. Not observed much north of Jericho. The east and south coast of Arabia, Sudan (desert only) to Muscat. Of doubtful occurrence in Iraq, though there is a worn specimen labelled "Mesopotamia" in the British Museum. Socotra. East Persia (Seistan), Persian and British Beluchistan, and occasional to Sind. In East Africa Van Someren (Nov. Zool., 1922, p. 125) reported it from the Suk and Kavirondo country as uncommon, and Reichenow (*Vog. Afr.*, ii, p. 633) records birds from Shoa, Kavanga in Kavirondo, and Barawa at lat. 4 North on the Juba River.

Common in southern Afghanistan, at least in winter, and is reported to breed in the Aral-Caspian region (Susehkin, *J. f. O.*, 1914). Zarudny obtained one in the Ilezk District, Orenburg (Grote, *J. f. O.* 1919).

In Central Asia Loudon reports them as resident in the Kara Kum between Merv and the Oxus and on the Murghab River. Zarudny reports them as breeding in the Kizil Kum, south-east of Aral.

Corvus corax edithae.

Corvus edithae Phill., *Bull. B.O.C.* iv, p. 36, 1895. Hainwa'na Plain, Somaliland (Lort Phillips). Type in the British Museum.

8 examined, including the type.

Adults.—Similar to *C. r. ruficollis*, but smaller. Wing 321–356, culmen 50–52. There is a bird in the British Museum from Barawa in Italian Somaliland collected in November 1881 by Dr. Fischer, with a wing of 361 and culmen of 56 which is well within the size of typical *C. r. ruficollis*. It is one of those birds which might be referred to either race.

Distribution.—Common throughout British Somaliland and extending in small numbers to Ogaden (Reichenow) and Lake Rudolph.

Corvus splendens zugmeyeri.

Corvus splendens zugmeyeri Laubmann, *Orn. Monatsb.* xxi, p. 93, 1913. Las Bela, Baluchistan.

10 examined.

Adults.—Forehead and crown metallic blue, throat and chin well lanceolated and of a metallic greenish blue colour. Nape, ear-coverts, and sides of the neck pale grey, gradually merging into metallic purplish blue on the mantle and to dull blackish grey on the abdomen. Tail purplish blue. Primary coverts metallic green. Bases of nape feathers white, not only in this race but in all races.

Soft Parts.—Iris dark brown, bill and legs black.

Measurements.—Wing 257–284, culmen 43–53.

Distribution.—The whole of Sind, east to the western Punjab, north to Kashmir and south to Karachi and along the Mekran Coast. Absent from the hills of Northern Baluchistan.

Specimens closely resembling this race occur at Muscat, and it is not clear whether they have been introduced or not.

Corvus splendens splendens.

Corvus splendens Vieillot, *Nouv. Dict. d'Hist. Nat.* viii, 1817, p. 44. Bengal.

Corvus splendens var. *impudicus* Hodgson in Gray's *Zool. Misc.*, p. 84. Nomen nudum. No locality. 1844.

Anomalocorax impudicus Hodgson, in Gray's *Handlist*, ii, p. 14, 1870. Nomen nudum.

58 examined.

Adults.—Markedly paler in its grey pattern than either *protegatus* or *insolens*. Darker and browner on nape, neck, ear-coverts; and upper breast than *zugmeyeri*.

Soft Parts.—Iris dark brown, legs and bill black.

Measurements.—Wing 253–284, culmen 45–52 mm. Some birds from Khatmandu in Nepal run up to 300 on the wing, but such huge birds are exceptional in that area. Perhaps in a large series from Nepal the average wing measurement would be greater than that of others from India.

Distribution.—The whole of India south of the Himalayas, west to the eastern Punjab, Rajputana, and Baroda. East to Nepal, Darjeeling and Gangtok in Sikkim, and Assam. South to Travancore, Mysore, and the Nilgiri Hills.

Whilst most birds from Assam are typical of this race, others show a distinct tendency towards *insolens*.

Birds occur in parts of the Himalayas at medium elevations, but very locally, but in Sikkim they occur sparingly to almost 8,000 ft.

Introduced to Zanzibar, Mauritius, and Aden.

Corvus splendens protegatus.

Corvus splendens protegatus Madarasz, *Orn. Monatsb.* xii, p. 195, 1904. Colombo, Ceylon.

5 examined.

Adults.—Differs from *insolens* in being a paler bird, and from *C. s. splendens* in having the grey portion of the plumage darker.

Soft Parts.—Iris dark brown, feet and bill black.

Measurements.—Wing 217–275, culmen 44–48.

Distribution.—Apparently confined to Ceylon.

Corvus splendens maledivicus.

Corvus splendens maledivicus Reichenow, *Deutsch. Tief-See Exped. Vogel*, p. 356, 1904. Southern Maldives.

None examined. This race was described apparently from a single specimen. Is said to be near *C. s. splendens*, but the neck, sides of head and breast are almost pure slate grey with scarcely any brown. Also greyer and darker than the typical form, but paler than *insolens*. Lower parts somewhat darker than *C. s. splendens*. Wing 283 mm.

There are in the British Museum three males from the Laccadive Islands with wings 232–260 and culmens 43–50 mm. Two of these are slightly darker than *C. s. splendens*, whilst a third is as dark as *insolens*. It seems likely that these birds belong to *maledivicus*.

Corvus splendens insolens.

Corvus insolens Hume, *Stray Feathers*, ii, 1874, p. 480. Tenasserim.

33 examined.

Adults.—The darkest of the group, the grey on the nape, sides of the neck, and upper breast being replaced by dull lead colour.

Soft Parts.—Iris dark brown. Bill and legs black.

Measurements.—Wing 230–278 mm., culmen length 42–50.

Distribution.—From Tenasserim north to Moulmein, Rangoon, Mandalay, but not extending into the hills of the Shan States. Also Siam.

Corvus cornix cornix.

Corvus cornix, Linn., *Syst. Nat.*, ed. x, p. 105, 1758. Sweden.

Corvus cinereus Leach, 1816. Nomen nudum.

Corvus subcornix Brehm, 1831. Germany.

Corvus cinereus Brehm, 1831. Central Germany.

Corvus tenuirostris Brehm, *Vogelfang.*, p. 57, 1855. Germany.

Corvus cornix vulgaris, planiceps Brehm., 1866. Nomina nuda. For detail of above see Hartert, *Vög. Pal.*, i, p. 9.

Corvus lacmeisteri Kleinschmidt., *Falco*, xiv, p. 8, 1919. Germany. Variety with grey primary coverts.

Adults.—Head, neck, throat, wings, and tail black glossed with purple. Rest of plumage ash-grey, the feathers with darker shaft stripes. According to the locality and the bleaching properties of the climate, the grey quickly fades to a dirty brownish or whitish grey.

Soft Parts.—Iris dark brown, bill and feet black.

Measurements.—Wings of over 100, from 305 in females to 340 in males. Culmen length 49–60, height at base 19–22 mm.

Summer range.—The typical race breeds in Ireland, Scotland, the Outer Hebrides, rarely in Holland, in Denmark, the whole of Scandinavia, Finland, Russia, in Germany east of the Elbe, Balearic Islands, Central and Southern Italy, Sicily, Hungary, Poland, Monte Negro, and east probably to the Urals, though the exact boundary between this race and *C. cornix sharpii* is not yet known. Birds from the Caucasus are probably “*sharpii*.” Resident in the southern part of its range.

Migration.—Birds from Northern and Central Europe move south-west and west respectively in the autumn. Passage occurs from the end of September (rarely from late August) to November when birds spread over the British Islands, Northern France, and to Belgium and western Germany. Has straggled to Malta, Egypt, Iceland, Greenland, and Spitsbergen.

Spring passage commences in early March, birds being rarely seen out of their breeding haunts after the first week in April, though spring passage has been noted in the British Islands as late as 12. v.

Corvus cornix sardonius.

Corvus aegyptiaca Brehm, *J. f. O.*, Extraheft, p. 8, 1853. Nomen nudum.

Corvus sardonius Kleinschmidt, *Orn. Monatsb.*, 1903, p. 92. Sardinia.

Corvus cornix vallachus Tschusi, *Orn. Jahrb.*, 1904, p. 121. Rumania.

Corvus cornix balcanicus Rzehak, *Orn. Monatsb.*, 1906, p. 189. Servia.

Corvus cornix syriacus Gengler, *J. f. O.*, 1919, p. 221. Jerusalem.

Corvus cornix judaeus Meinertz., *Bull. B.O.C.*, xxxix, p. 85, June 1919. Palestine.

Adults.—In fresh autumn plumage, precisely similar to *Corvus c. cornix*, but generally smaller. For detailed measurements see *Ibis*, October 1921, p. 625. Owing to a hotter and drier climate birds bleach quicker.

Measurements.—Wings of 11 Balkan birds, 280–333.

Wings of 22 Palestine birds, 278–324 mm.

Wings of 41 Egyptian birds, 286–332 mm.

Wings of 18 Sardinian and Corsican birds, 301–329 mm.

Culmens vary from 42–59 in length and from 16–22 in depth.

Range.—Perhaps Balearic Islands, Sardinia, Corsica, the Balkans, from Rumania and Servia south to Greece, where they are rare, probably Asia Minor, Syria, Palestine, and Egypt. Probably also the Crimea. No migration has been observed.

Corvus cornix sharpii.

Corvus sharpii Oates, *Fauna Brit. India, Birds*, i, p. 20, 1889. Siberia.

Corvus cornix var. *christophi* Alpheraky, *Mess. Orn.*, i, p. 164, 1910. Sea of Azov. Erythristic variety.

? *Corvus cornix kaukasicus* Gengler, *J. f. O.*, Apr. 1919, p. 221. Caucasus. Based on 1 specimen.

Adults.—As *Corvus c. cornix*, but the grey is slightly paler and slightly more brownish.

Measurements.—Wings of 47 birds from 314 in females to 345 in males. Culmen length 49–59, height 19–23.

Distribution.—Probably east of a line from the Ural Mountains to east of the Caspian and Persia. Breeds in Russian but not Chinese Turkestan. East to the Yenesay River and becoming scarcer towards Lake Baikal but not further east. North to the Arctic Circle. Also breeds on the western Altai Mountains. Birds from the Caucasus probably belong to this race.

Migration.—A considerable south and south-west movement in autumn when they become abundant in Trans-Caspia, throughout Persia, Mesopotamia, Kurdestan, Afghanistan, and extreme N.W. India. Passage has been noted across the Pamirs in October, and migrants arrive at Samarkhand from the north at the end of October. In Iraq birds begin to arrive near Baghdad in early November.

Spring passage has been noted in Trans-Caspia from 23.ii, but not after 10.iv. Birds leave Iraq during March, few being seen after that month.

Corvus cornix minos.

Corvus cornix minos Meinertz., *Bull. B.O.C.*, p. 19, Nov. 1920. Crete.

Adults.—A much paler bird than even *C. c. sharpii* and nearest to *C. c. pallescens* from Cyprus, but larger than the latter. Wings of 5 from 313 in females to 327 in males. Culmen length 55–61, height 20–22 mm.

Distribution.—Confined to Crete where they are resident.

Corvus cornix pallescens.

Corvus cornix pallescens Madarasz, *Orn. Monatsb.*, 1906, p. 528. Cyprus.

Adults.—Similar to *Corvus c. minos*, but smaller. Wings of 7, 285–314 mm., culmens length 47–53, height 17–20 mm.

Distribution.—Resident in Cyprus.

Corvus cornix capellanus.

Corvus capellanus Sclater, *Proc. Zool. Soc. London*, 1876, p. 694. Fao, Persian Gulf.

Adults.—The grey of preceding races is replaced by very pale almost milky grey in fresh plumage, which soon fades to almost white. Living birds sometimes have a slight pink blush on the white plumage.

Measurements.—A much heavier bird than any of the other forms. Wings of 24 vary from 329 to 358, culmens length 50–62 mm.

Distribution.—Mesopotamia and the extreme south-west of Persia, north to Ramadi on the Euphrates, Samarra on the Tigris, and to Khanikin and Kirkuk in southern Kurdistan. Also up the Karun River to Ahwaz and along the Gulf Littoral towards Bushire. Where this race meets *Corvus c. sharpii* in South-west Persia they inter-breed and a slight overlap occurs. Resident.

RELATIONSHIP BETWEEN *Corvus corone* AND *Corvus cornix*.

In examining the distribution of these two forms it is remarkable how in nearly every case the one displaces the other throughout their ranges, and it is rare that the two forms should breed in the same area. The few areas where they interbreed are Scotland, Denmark, roughly the Elbe Valley as far as Bohemia, in parts of the Western Altai Mountains, in the valley of the Yenesay, and between Tomsk and Lake Baical. Elsewhere throughout their combined ranges, there is a clear-cut line between their respective breeding ranges.

Wherever the two forms breed in the same area they inter-breed and hybrids occur. Such hybrids have been examined from many parts of Scotland, from Yarkand (doubtless a migrant, as *C. cornix* does not breed in Chinese Turkestan), from the Yenesay, from the Elbe Valley, Denmark, and Bohemia. These hybrids are fertile and bring up offspring as was proved by Seebohm in the Yenesay Valley, and recently in Scotland a breeding pair were shot, one of which was pure *Corvus corone* and the other a hybrid. In Argyllshire the majority of breeding crows are not pure.

The simplest explanation of a problem is usually the correct one, and in this instance I am inclined to think that where the two forms meet they interbreed. I regard the two forms as well-defined species or units and not as races of the same species. This latter view is largely held on the Continent, and appears to be based on the fact that the one form displaces the other almost throughout their respective ranges. I should sooner explain this by the fact that *Corvus cornix* is a plain species, whereas *Corvus corone* is a hill, forest-loving species. *Corvus cornix* is looked upon in Western Europe as a shy bird confined to wild moorland. Continual persecution has compelled him to adopt this role. But where the Hooded Crow is found and is not persecuted we see him as he really is, as a village crow, scavenging round towns, breeding in towns, and with quite different habits to *Corvus corone*. *Corvus corone* is not a "village crow" anywhere throughout its range. It is true that it has established itself in the heart of London, but even there he is wild.

It is a more reasonable explanation that the two species do not associate amicably and that the Hooded Crow, being the stronger bird, makes himself objectionable to *Corvus corone*. Similar instances are known among *Passer domesticus* and *montanus* and among *Corvus monedula* and *Pyrhocorax pyrrhocorax*.

For the Continental views on this subject see also *J. f. O.*, 1887, pp. 619–648, and Geyr, *Falco*, 1920, pp. 17–26.¹

¹ Since writing above I am inclined (1926) more to the view that *C. corone* and *C. cornix* must be treated as one and the same species.

Corvus corone corone.

Corvus corone Linn., *Syst. Nat.*, ed. x, p. 105, 1758, England.

Corvus subcorone Brehm., 1831. Central Germany.

Corvus hyenalis Brehm., 1831. Central Germany.

Corvus assimilis Brehm., 1855. Germany.

Corone andayensis, Olphe-Galliard, variety.

Corvus corone helveticus Brehm, *J. f. O.*, 1860, p. 233. Freiburg.

Corvus corone major, minor, longirostris, brevirostris, intercedens, and montanus Brehm, 1866. Nomina nuda. For detail of above see Hartert, *Vög. Pal. Fauna*, i, p. 11.

Adults.—Whole plumage black with purple sheen on upper-parts. Nasal plumes well developed, and completely covering nostrils. Base of feathers dark grey.

Soft Parts.—Iris dark brown, bill and feet black.

Measurements.—Wing of 64, 304 to 334, culmen 47–59 mm.

Distribution.—England, Wales, Scotland though rare in the north, France, Spain (rare in the south), Northern Italy, Switzerland, Tyrol and western Europe west of the Elbe, Holstein, and Denmark. Very local in Russia. The Caucasus.

Migration.—Has straggled to the Azores. A considerable southern movement takes place in autumn when large flocks have been reported from Scotland in November, January, and March. Flocks have also been reported from south-west France on 24.ii. A scarce winter visitor to Corsica, and a common winter visitor to Sicily. Witherby reported them as common in the Cantabrian Mountains in October.

Corvus corone orientalis.

Corvus orientalis Eversmann, *Add. Pall. Zoogr. fasc.* ii, p. 7, 1841. Naryn River, Central Asia.

Corvus corone interpositus Laubmann, *Verh. Orn. Ges. Bay.* xiii, 2, p. 201, 1917. Hondo, Japan. Smaller wings, 305–341 mm.

Corvus corone yunnanensis La Touche, *Bull. B.O.C.* xliii, 1922, p. 43. Mengtz, S.E. Yunnan.

Adults.—In all respects a larger bird than *Corvus c. corone* and frequently not so intensely coloured. I am unable to separate birds from Japan on measurement, though a few small individuals do occur there. On the other hand most Japanese birds are as large as Central Asiatic examples.

Two topo-typical examples have been examined of La Touche's "*yunnanensis*." Their bills are not less convex nor more slender than others from Japan, Gilgit, and Turkestan, neither can I trace any green on the mantle. It is true that lanceolation on the throat is well marked, but not more so than in fully adult specimens from Central Asia. The under-parts do not differ from examples in similar plumage from other parts of Asia.

Measurements.—Wing of 44 examples 314 to 362, culmen length 49–64, height 20–23 mm.

Distribution.—Probably the whole of northern Asia east of the Yenisey River and the Upper Oxus. South to North Kashmir,¹ Gilgit, Ladak, Szechwan, and S.E. Yunnan. Has bred (?) in the Kurram Valley (Whitehead).

Migration.—Considerable southward movement in winter when birds occur in N.W. India. They remain north of the Arctic Circle till late October. On the Sea of Japan passage has been noted in October, and in the Gulf of Pechili an east to west migration has been noted in late October and November.

¹ Breeding doubtful.

Spring passage has been noted in Corea and in the Gulf of Liautung on 20.iii. In Dauria and Northern Manchuria they commence arriving from the end of March.

In China birds occur in winter south to Foochow.

Corvus torquatus.

Corvus torquatus Lesson, *Traité*, p. 328, 1831. "New Holland" in error. China apud Schlegel.
Corvus pectoralis Gould, *P.Z.S.*, 1836, p. 18. China. Type examined in British Museum.

Over 50 examined.

Adults.—Whole plumage glossy purplish black. Nape, upper back, sides of the neck, and a horse-shoe shaped band across the breast, white, the feathers frequently with black or darker markings. Base of nape feathers pale grey. Nasal bristles straight and reaching to about the centre of the culmen and covering the frontal base of the culmen. 1st primary about equal to the longest secondaries, though frequently slightly shorter. Throat feathers well lanceolated.

Immature.—What I take to be an immature bird is a specimen in the British Museum from the Tsing Ling Mountains. It almost lacks the white band underneath, and the white collar above is replaced by grey feathers with black tips, which gives a heavily streaked appearance to the back of the neck and upper back.

Soft Parts.—No record.

Measurements.—Wing 283–355, but usually between 320 and 350. Culmen 56–62 mm. Depth of culmen 19–23 mm.

Distribution.—China. Birds examined from the Tsinling Mountains, Kiukiang, Amoy, Hunan, Canton, Kiang-su, Fohkien, Foochow, Kwantung, Tonking, Lower Yangtse, and Hainan.

A migrant from the northern part of its range, and has been observed on passage in south-west Manchuria, and in Chili Province near Pekin.

Formosa.

Corvus albus.

Corvus albus Müller, *Syst. Nat. Suppl.*, p. 85, 1776. Senegal.

Corvus scapulatus Daud., *Traité*, ii, p. 232, 1800. No locality.

Corvus scapularis Leach in Tuckey, *Exped. to Congo*, p. 407, 1818. River Congo in Central Congo.

Corvus scapularis var. *aethiops*. Hemp. & Ehr., *Symb. Phys. Icones Avium*, 1828. Nubia and Dongola.

Corvus curvirostris Gould, *P.Z.S.*, 1836, p. 18. East Africa. Founded on a small specimen.

Corvus leuconotus Swainson, *B. of West Afr.* i, p. 133, pl. v, 1837. Senegal.

Corvus phaeocephalus Cabanis, *Mus. Hein. Th.* i, p. 232, 1851. Abyssinia. Founded on two large specimens.

Corvus madagascariensis Bonaparte, *Compt. Rend.* xxxvii, p. 829, 1853. Madagascar. Said to be smaller and with a stronger bill.

132 examined.

Adults.—Breast white and with a broad white collar passing from the upper breast over the back. Abdomen, head, throat, and rest of plumage glossy steel-black. Feathers of throat strongly lanceolated. Base of feathers white. Nasal bristles well-developed and reaching to or slightly beyond proximal half of culmen, covering frontal base of culmen for from 10 to 20 mm.

Soft Parts.—Iris brown. Bill and feet black.

Immature.—As adult, but the white of the upper parts is mottled with

brown, and the white of the under-parts is dirty. Rest of under parts dirty brown-black. No gloss on head.

Measurements.

Specimens.	Locality.	Wing. mm.	Gulmen :	
			Length. mm.	Height. mm.
10	South Africa S. of the Zambesi	325, 345-360	52-60	21-22
3	Lower Zambesi and Mozambique	325-352	56-58	22, 24
2	Rhodesia	330, 348	56, 58	23, 24
11	Angola	325-365	54-59	23-25
3	Nyasaland	358-366	57-60	23-24
8	Madagascar	321, 341-359	53-59	23-24
8	Aldabra	330-364	53-60	23-25
11	Comoro Isles	318-365	52-59	21-24
1	Assumption Island	324	56	—
1	Zanzibar	294	54	—
7	Kenya Colony, Uganda, and Kilimanjaro	336-363	52-62	22-26
27	Northern and Southern Nigeria, Sierra Leone, Liberia, Gambia, and Congo	330-378	52-62	22-26
10	Fernando Po	315-360	51-60	22-25
3	British Somaliland	346-360	56-64	22-26
8	Abyssinia	330, 354-382	53-63	21-24
11	Sudan	314, 315, 331-355, 371	53-64	22-24

Distribution.—Occurs in South Africa from the south coast to Natal and the Transvaal, but apparently not in the western portions of Cape Colony. Thence throughout Africa to Angola in the west and Abyssinia in the east, though not in the Somali desert. Throughout the Congo to West Africa north to the Southern Sahara at Asben and on the coast at least to the Gambia. Common throughout Kenya Colony and Uganda and north to the Sudan at least to Shendi. Occurs in Abyssinia at least to Addis Abeba. Also Madagascar, Aldabra, Comoro, Assumption, Zanzibar, and Fernando Po.

Note.—Are *C. torquatus* and *C. albus* but races of *C. corone* ?

APPENDIX A.

LIST OF SCIENTIFIC NAMES APPLIED TO THE GENUS *CORVUS*,
ARRANGED ALPHATETICALLY, THE SECOND NAME BEING THE
SPECIES TO WHICH THE FIRST NAME HAS BEEN APPLIED.

advena—*frugilegus*.
advena—*typica*.
aegyptiaca—*cornix*.
aethiops—*albus*.
affinis—*coronoides*.
affinis—*hipidurus*.
agricola—*frugilegus*,

agrorum—*frugilegus*.
albicollis—*albicollis*.
albus—*albus*.
alticeps—*monedula*.
americanus—*brachyrhynchos*.
andamanensis—*coronoides*.
andayensis—*corone*,

angustirostris—*frugilegus*.
annectens—*coronoides*.
anthracina—*coronoides*.
arborea—*monedula*.
assimilis—*corone*.
australis—*coronoides*.

bacmeisteri—*cornix*.
balcanicus—*cornix*.
bennetti—*coronoides*.
bonhoti—*coronoides*.
brachyccercus—*rhipidurus*.
brachyrhynchos—*brachyrhynchos*.
brachyrhynchos—*rhipidurus*.
brachyurus—*rhipidurus*.
brevicaudatus—*rhipidurus*.
brevipennis—*coronoides*.
brevirostris—*corone*.

calacott—*corax*.
cafer—*albicollis*.
canariensis—*corax*.
capellanus—*cornix*.
capensis—*cupensis*.
capitulis—*dauuricus*.
carnivorus—*corax*.
caurinus—*brachyrhynchos*.
ceciliae—*coronoides*.
christophi—*cornix*.
cinereus—*cornix*.
cirtensis—*monedula*.
clarioneensis—*corax*.
clericus—*corax*.
collaris—*monedula*.
colonorum—*coronoides*.
compiler—*enca*.
connectens—*coronoides*.
corax—*corax*.
cornix—*cornix*.
corone—*corone*.
coronoides—*coronoides*.
crassirostris—*cornix*.
crassirostris—*frugilegus*.
crassirostris—*crassirostris*.
crassirostris—*monedula*.
cryptoleucus—*cryptoleucus*.
culminatus—*coronoides*.
curvirostris—*albus*.

dardaniensis—*corax*.
dauuricus—*dauuricus*.
dominicensis—*leucognaphalus*.
edithae—*corax*.
enca—*enca*.
erythrophthalmus—*leucognaphalus*.
euophilus—*corax*.

fallax—*enca*.
ferroensis—*corax*.
florensis—*florensis*.
floridanus—*brachyrhynchus*.
frugilegus—*frugilegus*.
frugivorus—*brachyrhynchus*.
fuscicapillus—*fuscicapillus*.
fuscicollis—*corax*.
fuscicollis—*dauuricus*.

granorum—*frugilegus*.
grebnitzkii—*corax*.
gregarius—*frugilegus*.

hainanus—*coronoides*.
hassi—*coronoides*.
hawaiensis—*hawaiensis*.
helmatrinus—*coronoides*.
helreticus—*corone*.
hertogi—*coronoides*.
hesperis—*brachyrhynchus*.
hispanus—*corax*.
hyemalis—*corone*.

impudicus—*splendens*.
impudiens—*splendens*.
infumatus—*corax*.
insolens—*splendens*.
insularis—*coronoides*.
intercedens—*corone*.
intermedius—*coronoides*.
interpositus—*corone*.
islandicus—*corax*.

jamaicensis—*jamaicensis*.
japonensis—*coronoides*.
judaeus—*cornix*.

kamtschaticus—*corax*.
kaukasicus—*cornix*.

khamensis—*dauricus*.
kordofanensis—*capensis*.
krausei—*corax*.
kubaryi—*kubaryi*.

latirostris—*coronoides*.
laurencei—*corax*.
leptonyx—*corax*.
leucognaphalus—*leucognaphalus*.
leucomelas—*corax*.
leuconotus—*albus*.
leucophaeus—*corax*.
levaillantii—*capensis*.
levaillantii—*coronoides*.
littoralis—*corax*.
longirostris—*corone*.
longirostris—*frugilegus*.
lugubris—*corax*.

macropterus—*capensis*.
macrorhynchus—*coronoides*.
madagascariensis—*albus*.
madaraszi—*coronoides*.
major—*corax*.
major—*corone*.
major—*dauricus*.
major—*frugilegus*.
maledivicus—*splendens*.
mandschuricus—*coronoides*.
mariannae—*coronoides*.
maritimus—*mexicanus*.
marngli—*coronoides*.
maximus—*corax*.
meeki—*meeki*.
mellori—*coronoides*.
mengtszensis—*coronoides*.
mexicanus—*mexicanus*.
minor—*corax*.
minor—*corone*.
minor—*capensis*.
minos—*cornix*.
minutus—*brachyrhynchus*.
modestus—*euca*.
monedula—*monedula*.
moneduloides—*moneduloides*.
montanus—*corax*.
montanus—*corone*.

nasicus—*nasicus*.

neglectus—*dauricus*.
nigricollis—*corax*.
nobilis—*corax*.

occidentalis—*monedula*.
orientalis—*corone*.
ornu—*coronoides*.
osai—*coronoides*.
ossifragus—*mexicanus*.

pallescens—*cornix*.
palmarum—*brachyrhynchus*.
pascuus—*brachyrhynchus*.
pastinator—*frugilegus*.
paulus—*brachyrhynchus*.
pectoralis—*torquatus*.
peregrinus—*corax*.
perplexus—*coronoides*.
phaeocephalus—*albus*.
philippinus—*coronoides*.
pityocorax—*corax*.
planiceps—*corax*.
planiceps—*frugilegus*.
planiceps—*monedula*.
predatorius—*frugilegus*.
principalis—*corax*.
protegatus—*splendens*.
pusillus—*euca*.

queenslandicus—*coronoides*.

rhipidurus—*rhipidurus*.
richardsoni—*corax*.
ruficollis—*corax*.

salvadorii—*coronoides*.
samarensis—*euca*.
sardonius—*cornix*.
sardus—*corax*.
scapularis—*albus*.
scapulatus—*albus*.
segetum—*capensis*.
seuex—*tristis*.
septentrionalis—*monedula*.
sharpii—*cornix*.
sibiricus—*corax*.
sinensis—*coronoides*.
sinuatus—*corax*.
soemmeringii—*monedula*.

solitarius—*brachyrhynchus*.
solitarius—*coronoides*.
spermologus—*monedula*.
splendens—*splendens*.
subcorax—*corax*.
subcornix—*cornix*.
subcorone—*corone*.
sylvestris—*corax*.
syriacus—*cornix*.

tasmanicus—*coronoides*.
tenuirostris—*cornix*.
tenuirostris—*enca*.
tenuirostris—*frugilegus*.
tibetanus—*corax*.
tibetosinensis—*coronoides*.
timorensis—*coronoides*.
tingitanus—*corax*.
torquatus—*torquatus*.
tristis—*tristis*.
tropicus—*hawaiiensis*.
tschuiensis—*corax*.
tschusii—*frugilegus*.

turrium—*monedula*.
typica—*typica*.

ultimus—*frugilegus*.
ultracollaris—*monedula*.
umbrinus—*corax*.
unicolor—*unicolor*.
ussurianus—*corax*.

validissimus—*validus*.
validus—*validus*.
vallachus—*cornix*.
varius—*corax*.
vegetus—*woodfordi*.
violaceus—*enca*.
vulgaris—*cornix*.
vulgaris—*monedula*.
vulturinus—*albicollis*.

woodfordi—*woodfordi*.

yunnanensis—*corone*.

zugmeyerii—*splendens*.

APPENDIX B.

WING FORMULAE OF THE GENUS *CORVUS*.

Species are arranged alphabetically. Plus and minus signs are used to denote longer than or shorter than. v. sl. = very slightly, sl. = slightly, nr. = nearer. 7-8 means between the 7th and 8th primaries.

Species.	1st primary.	2nd primary.	3rd primary.	4th primary.	5th primary.	6th primary.
ALBICOLLIS . . .	7-8	5-6, nr. 5	4-5 or = 4	longest	sl. - 3	1-2, nr. 2
ALBUS	7-8	5-6, nr. 5	longest or = 4	= longest or sl. - 3	sl. + 2	1-2, nr. 2
BRACHYRHYNCHUS:						
<i>continental</i> . . .	9-10 or = or - 10	6-7, nr. 6	v. sl. 5 or = 5	longest	v. sl. - 3 or = 3	2-3
<i>palmarum</i> . . .	= 9	6-7	= 4 and 5	= 3 and 5	= 3 and 4	2-3
CAPENSIS	= 9	= 6 or 6-7	= longest	= longest	v. sl. - 4	= 2
CORAX:						
<i>Arctic America and Canada</i>	7-8 or = 8	5-6, nr. 5	= 5 or 4-5	longest	sl. - or = 3	1-2, nr. 2
<i>Iceland</i>	7-8 or sl. - 8	5-6	4-5 or = 5	longest	= or v. sl. - 3	1-2, nr. 2

Species.	1st primary.	2nd primary.	3rd primary.	4th primary.	5th primary.	6th primary.
<i>United States</i>	7-8 or = 8	5-6	= 5	= 3 and 5 or rarely sl. longer	= 3	1-2, nr. 2
<i>East Asia</i>	7-8 or v. rarely - 8	5-6	= or sl. - 4	longest or = 3	2-3, nr. 3	1-2, nr. 2
<i>Himalayas</i> "laurenci"	7-8 or = 8 = or sl. - 7	5-6, nr. 5 5-6, but usually v. sl. - 5	4-5 or = 4 = 4 or v. sl. - 4	longest = 3 or v. sl. - 3	v. sl. - 3 2-3	1-2, nr. 2 1-2, rarely nr. 2
"ruficollis". "edithae" "tingitanus"	7-8 or = 8 7-9 7-8 or = 8	5-6, nr. 5 5-6, nr. 5 5-6, nr. 5	= longest sl. + or - 4 4-5 or = 4	= longest sl. + or - 3 longest	2-3 2-3 v. sl. - 3	1-2 1-2, nr. 2 1-2, nr. 2
<i>Canary Isles</i>	usually 7-8 or v. sl. - 8	5-6	4-5 or = 4	longest	= or v. sl. - 3	1-2, nr. 2
<i>Europe</i>	7-8 or = 8	5-6	4-5 or = 5	longest	= or v. sl. - 3	1-2, nr. 2
CORNIX	9-10	6-7, nr. 6	= or v. sl. - 4	longest or = 3 or 5	= or sl. - 3 or 4	2-3
CORONE	9-10	6-7	5-6 or = 5	longest or = 5	= or sl. - 4	2-3
CORONOIDES:						
<i>Australian</i>	8-9	5-6	4-5 or = 4	longest or = 3	sl. - 3	sl. - 2
<i>Indian</i>	- 9	6-7	4-5 or = 4 or 5	longest or = 4 or 5	= 3 or 4	2-3
<i>Japanese</i>	- 9	6-7, rarely 5-6	= 4 or 5	longest or = 3 or 5	= 3 or sl. - 4	2-3 or = 2
<i>Chinese</i>	- 9	6-7 or sl. - 6	= or v. sl. - 5	longest or = 5	= 3 or 4	2-3
<i>Philippine</i>	- 10	6-7	sl. - 4	- 5 or = longest	longest or = 4	sl. - 3
<i>Java, Sumatra</i>	= or sl. - 9	= 6	= or sl. - 4	longest or = 3	sl. - 3 and 4	= 2
<i>Hainan</i>	- 8 or 9	6-7 or sl. - 6	= or v. sl. - 5	longest or = 5	= 3 or 4	2-3
<i>New Guinea</i>	- 8	6-7, nr. 6	5-6 or = 5	longest or = 5	= or sl. - 4	2-3
<i>New Britain</i>	- 9	6-7, nr. 6	5-6	longest or = 5	= or sl. - 4	2-3 or = 3
CRASSIROSTRIS	7-8 or rarely - 8	5-6	= longest	= longest	sl. - 3 and 4	1-2, nr. 2
CRYPTOLEUCUS	7-8	5-6, nr. 5	4-5 or = 4	longest or = 3	2-3	1-2, nr. 2
DAURICUS	8-9 or rarely - 9	= or sl. - 5	longest	sl. - 3	= or sl. + 2	1-2
ENCA:						
<i>enca</i>	- 9	6-7	4-6	longest or = 5	= or sl. - 4	2-3, nr. 3
<i>violaceus</i>	- 9	6-7	= 5 or 5-6	longest or = 5	= or v. sl. - 4	2-3, nr. 3
<i>pusillus</i>	- 9	= 7	= 6 or 5-6	longest or = 5	= or v. sl. - 4	= or sl. - 3
<i>samarensis</i>	- 9	= 7	5-6	longest or = 5	= or v. sl. - 4	2-3
<i>unicolor</i>	- 10	= 7	5-6	= longest	= longest	sl. - 3
FLORENSIS	- 10	= 9	6-7	5-6	longest	= or sl. - 4
FRUGILEGUS:						
<i>frugilegus</i>	8-9, but rarely - 9	5-6	= or sl. - 4	longest or = 3	2-4	sl. - 2
<i>pastinator</i>	- 9 or nearly so	= or v. sl. + 6	= or sl. - 4	usually longest	= or v. sl. - 3	sl. - 2
FUSCICAPILLUS	- 10	7-8	= 6 or very nearly so	v. sl. - 5	longest	= 3 or very nearly so.

Species.	1st Primary.	2nd Primary.	3rd Primary.	4th Primary.	5th Primary.	6th Primary.
HAWAIIENSIS . . .	- 10	sl. - 7	= or sl. - 6	= 5 or 6, rarely sl. shorter	longest or = 4	= or sl. - 4
JAMAICENSIS . . .	- 10	= 7	= 5 or 5-6	longest or = 5	3-5 or = 5	= or v. sl. - 3
KUBARYI . . .	- 10	sl. - 7	= 6	= longest	= longest	= 3
LEUCOGNAPHALUS . . .	= or - 10	6-7, nr. 6	= 5	longest	= 3	2-3
MEEKI . . .	- 10	7-8	= 6	= longest	= longest	= 3
MEXICANUS : <i>mexicanus</i> . . .	- 10	6-7, but usually v. sl. - 6	= 5	longest	= 3	2-4
<i>ossifragus</i> . . .	9-10	5-6 or = 6	sl. + or - 4	longest or sl. - 3	sl. - 4 or = 3	1 - 2 or = 2
MONEDULA . . .	= 9	= or v. sl. - 5	longest	sl. - 3	= or v. sl. + 2	1-2
MONEDULOIDES . . .	- 10	7-8 or = 8	6-7	almost = 5 and 6	usually = longest 4 and 6	almost = 4 and 5
NASICUS . . .	- 10	6-7	= 5 or nearly so	usually longest	= 3 or nearly so	2-3
RHIPIDURUS . . .	8-10	5-6	= 4 and 5 or very nearly so	= 3 and 5 or nearly so	= 3 and 4 or very nearly so	1-2, nr. 2
SPLENDENS . . .	= or - 10	= or sl. - 6	rarely longest, usually 4-5 or = 5	usually longest	sl. - 4	usually v. sl. - 2, rarely + 2
TORQUATUS . . .	- 9 or = 10	6-7	usually 4- 5, but rarely - 5	longest	sl. - 3	2-3
TRISTIS . . .	- 10	6-7 or = 7	v. sl. + or - 6	longest or very nearly so	= longest or very nearly so	v. sl. + or - 3
TYPICA . . .	- 10	6-7	= or sl. - 5	longest or = 5	= or sl. - 4	2-3
VALIDUS . . .	= or - 10	v. sl. + or - 7	5-6 or sl. - 6	sl. + or - 5	usually longest or v. sl. - 4	sl. + or - 3
WOODFORDI . . .	- 10	6-7 or = 7	5-6 or = 6	= longest	= longest	= or sl. - 3

APPENDIX C.

LIST OF TYPES OF AUSTRALIAN CROWS.

Name of type.	Wing.	Culmen.		Base of nape feathers.	Type locality.
		Length.	Depth.		
<i>Corvus coronoides</i> Vig. and Horsf., 1827.	363	58	—	grey.	Paramatta, N.S.W.
<i>Corvus bennetti</i> North, 1901 .	type not examined.			white.	Moolah, Western N.S.W.
<i>Corvus mariannae</i> Mathews, 1911.	345	56	22	dark grey.	Gosford, N.S.W.
<i>Corvus coronoides ceciliae</i> Ma- thews, 1912. "Smaller than <i>Corvus c.</i> <i>coronoides</i> , wing 355-356."	360	60	24	almost pure white.	Napier Broome Bay, N.W. Australia.

Name of type.	Wing.	Culmen.		Base of nape feathers.	Type locality.
		Length.	Depth.		
<i>Corvus bennetti bonholi</i> Mathews, 1912. "Smaller than <i>Corvus b. bennetti</i> . Wing 295."	298	49	19	almost pure white. An immature bird.	Murchison, West Australia.
<i>Corvus coron. perplexus</i> Mathews, 1912. "Much smaller than <i>Corvus c. coronoides</i> , wing 314-327."	316	51	23	grey.	Perth, Western Australia.
<i>Corvus benn. queenslandicus</i> Mathews, 1912. "Differs from <i>Corvus b. bennetti</i> in having a deeper and stouter bill and thicker tarsi."	320	58	24	almost pure white.	Dawson River, Queensland.
<i>Corvus mariannae mellori</i> Mathews, 1912. "Differs from <i>Corvus m. mariannae</i> in being smaller, wing 326-330, and from <i>C. b. bennetti</i> in having grey bases to the feathers."	327	54	22	dark grey.	Angus Plains, South Australia.
<i>Corvus mariannae helmaturinus</i> Mathews, 1912. "Differs from <i>Corvus m. mellori</i> by being smaller, wing 291."	295	49	19	very dark grey.	Kangaroo Island, S. Australia.
<i>Corvus mariannae tasmanicus</i> Mathews, 1912. "Differs from <i>Corvus m. mariannae</i> in its longer bill—67 mm.—typical <i>C. m. mariannae</i> having a bill 56-60."	359	67	25	grey.	Tasmania.
<i>Corvus ceciliae marngli</i> Mathews, 1912. "Shorter wing—312—and bill than <i>Corvus c. ceciliae</i> ."	316	51	21	snow-white.	Marngle Creek, West Kimberley, Western Australia.
<i>Corvus ceciliae hartogi</i> Mathews, 1920. "Differs from <i>Corvus c. marngli</i> in having many of the feathers brown and not shining black."	Type not examined.				Dirk Hartog I., Western Australia.



APPENDIX D.

DETAILED EXAMINATION OF AUSTRALIAN RACES OF *CORVUS*
CORONOIDES.

	Number.	Locality.	Wing.	Culmen :		Base of feathers.
				Length.	Depth.	
Queensland . . .	36	Cape York Pen. . .	295-354	46-61	19-26	snow-white
	1	Cooktown . . .	345	58	24	snow-white
	12	Normanton . . .	288-315	48-54	20-25	snow-white
	1	Normanton . . .	364	61	24	grey
	2	Shadbroke Isles . . .	315, 344	56, 57	22, 23	snow-white
	6	Dawson River . . .	321-354	52-57	22-24	snow-white
Northern Territory	1	Daly River . . .	310	59	23	snow-white
	3	South Alligator R. . .	329-357	59-62	24-27	snow-white
	5	Melville Isle . . .	333-351	56-61	24-26	snow-white
	1	Alexandria . . .	285	47	18	snow-white
	1	Brunette Downs . . .	305	53	22	white
North-West Australia . . .	1	Wyndham . . .	328	57	19	snow-white
	1	Admiralty Gulf . . .	361	59	25	snow-white
	2	Forrest River . . .	330, 346	55, 58	24, 26	snow-white
	2	Napier Broome Bay . . .	350, 360	60, 62	24, 26	snow-white
	1	Derby . . .	335	52	23	snow-white
	1	Obogama, nr. Derby . . .	296	47	20	snow-white
	3	West Kimberley . . .	306-316	49-51	21	snow-white
Western Australia .	1	Murchison . . .	298	49	19	white
	3	Coolgardie . . .	316-345	55-63	24-25	white
	2	Carnarvon . . .	305, 340	47, 48	19, 21	white
	2	Port Cloates . . .	305, 328	50, 63	20, 23	snow-white
	1	Dirk Hartog I. . .	303	49	20	snow-white
	1	Perth . . .	316	51	23	grey
	5	Augusta . . .	298-325	46-52	20, 22	dark grey
	1	Warren River . . .	337	55	22	grey
	3	Albany . . .	330-347	53-56	22-23	grey
South Australia . .	1	Moorilyama . . .	340	57	27	snow-white
	1	Horse-shoe Bend . . .	342	55	24	snow-white
	1	Wilgena . . .	322	55	24	snow-white
	3	Wantna Pilla Swamp, north of Spencer Gulf	330-343	53-60	24	snow-white
	1	Gawler Ranges . . .	330	49	22	snow-white
	3	Gawler Ranges . . .	325-347	55-57	22-25	grey to dark grey
	6	Normanville . . .	305-351	51-59	20-23	grey to dark grey
	2	Angus Plains (Adelaide)	315, 327	51, 54	21, 22	white and dark grey
	1	Kangaroo Isle . . .	295	49	19	grey
	New South Wales . .	2	Lismore . . .	296-350	54-55	23-26	snow-white
4		Clarence Bay . . .	320-325	52-57	23-25	snow-white
1		Lithgow . . .	355	55	25	grey
1		Moree . . .	345	60	24	whitish grey
3		Walgett . . .	330-370	59-62	23-25	grey and whit- ish grey
1		Bundarra . . .	355	58	25	grey
1		Coonabarabran . . .	338	59	25	grey

	Number.	Locality.	Wing.	Culmen:		Base of Feathers.	
				Length.	Depth.		
New South Wales <i>(continued)</i>	2	Belltrees (Seone)	355, 360	57, 59	23, 24	whitish grey	
	6	Gosford	345-379	56-62	22-25	grey to dark grey	
	1	Paramatta	332	55	23	dark grey	
	3	Sydney	354-365	60-62	24-26	grey to dark grey	
	8	Hay	310-358	49-56	21-25	grey to dark grey	
	5	Narandera	302-360	53-58	20-25	grey to dark grey	
	2	Broken Hill	315, 325	50, 53	20, 21	white	
	1	Delegate	331	57	23	grey	
	Victoria	3	Burrumbert, near Melbourne	323-342	52-53	22-23	2 dark grey, 1 whitish grey
		6	Wandella	318-355	52-59	22-24	grey to dark grey
7		Sandhill Lake, near Melbourne	332-357	52-57	20-23	grey to dark grey	
1		Bendigo	320	51	22	grey	
5		Lake Charm	324-340	50-55	20-23	4 dark grey, 1 grey	
1		Wonga Park, near Melbourne	327	56	22	dark grey	
1		Melton	346	60	25	dark grey	
1		Castlemaine	330	55	25	whitish grey	
11		Budgerum (near Melbourne)	315-352	47-57	20-23	8 grey, 2 whitish grey, 1 dark grey	
7		Melbourne	305-360	52-60	22-25	grey to dark grey	
Tasmania	2	Bael Bael (near Melbourne)	326-328	53	21-22	grey	
	7	Tasmania	336-357	60-67	23-25	grey to dark grey	

ON THE BIRDS OF THE DISTRICT OF TALASEA IN NEW BRITAIN.

By ERNST HARTERT.

THE large island of New Britain (Neu Pommern), the largest of the Bismarek Archipelago, east of New Guinea, is, zoologically, the best-known island of the group; quite a number of good collectors and ornithologists have been there, and yet it remained almost unknown with the exception of the northernmost peninsula, called Gazelle Halbinsel. It was therefore that Lord Rothschild induced Mr. Albert F. Eiehorn to go to the western parts to collect. As he had no vessel of his own, he was obliged to go where ships could take him, and decided to go to Talasea. Of this district he writes as follows: "Our camp was pitched at 1,200 feet, the place being chosen for the water found there. The mountains above reach an elevation of 3,400 feet, and up to that altitude my men and myself have collected. The surrounding country is dotted with geysers and hot mud springs, and sometimes their sickening sulphur fumes drifted up to and across the camp. The scrub is virgin, huge ficus trees towering above the others. The soil is very loose volcanic young formation. No natural grass patches are within sight, except a little one made around the Government station, hence the absence of birds inhabiting grass-land. The native population inland is very sparse, so it is mostly impossible to get carriers and food."

The collection made by Mr. Eiehorn is a very interesting one. It contains specimens of the very interesting and (in collections) rare *Henicophaps foersteri* (only known since 20 years), the rare *Henicopernis longicauda infuscatus*, *Halcyon albonotata*!, *Monarcha hebetior*!, *Rhipidura dahl dahl*!, and many other fine New Britain birds in beautiful series, as well as two unexpected novelties: *Accipiter luteoschistaceus* and *Turdus talasea*. The absence of the much desired *Tyto aurantia* (Salvad.), *Excalfactoria lepida*, *Rallidae*, *Merops salvadorii*, and of *Munia* is regrettable, but these forms, or at least some of them, do not seem to exist where Eiehorn collected, or may be are extremely rare there.

With the help of Reichenow's "Vögel der Bismarekinseln" in *Mitt. Zool. Samml. Berlin*, i. 3 (1899) it is now comparatively easy to work out a collection from New Britain. Since then, however, several articles on the birds of that island have appeared:

HEINROTH, Ornithologische Ergebnisse der "I. Deutschen Südsee Expedition von Br. Meneke" in *Journ. f. Orn.*, 1902 and 1903.

OTTO MEYER, "Die Vögel der Insel Vuatom," in *Natur und Offenbarung*, vol. 52, 1906.

Vuatom, Watom, or Uatom is a small island just north of the Gazelle Peninsula. Meyer observed there not less than 87 different species, which is a considerable number for such a small island. His article contains many valuable biological notes. Most of the specimens which he collected are preserved (mounted) in the convent of the fathers of the Heart of Jesus in Hiltrup near Münster i. Westf., where I had the pleasure, together with Professor Reiehling, to look over the collection.

W. MEYER, "Zur Vogelfauna des Bismarck-Archipels," in *Ornith. Monatsber.* 1909, pp. 33-38.

This article contains interesting notes on birds from New Britain, among others the description of plumage, nest, and eggs of an apparently undescribed Reed-Warbler. It contains further the description of two supposed new birds:

Halcyon toriu, a Kingfisher hitherto unknown to occur in New Britain or anywhere else in the Bismarck Archipelago. The description, however, agrees in every way with that of the male of *Halcyon macleayi*, under which name Father Meyer has sent specimens to Berlin and Hiltrup; the latter has been sent to Rome, and already O. Meyer knew that it was not a new species, but hitherto the mistaken description of it as *H. toriu* has not been corrected, as far as I am aware (cf. Stresemann, *Sepik-Vögel*, p. 38). *H. macleayi* is an inhabitant of Queensland, "Northern Territory," and parts of New South Wales. Mathews recognises several subspecies, which will be discussed elsewhere. As this species occurs also in the Louisiade and D'Entreesteaux Islands, and on the south coast of British Papua northwards to Astrolabe Bay, there is no reason why it should not occur in New Britain; Stresemann suggests that all *H. macleayi* occurring out of Australia and its islands (Melville) might be migrants only, and this is probably the case.

The second bird described as new is *Reinwardtoenas bleyi*. This striking new bird was unfortunately already described as *Henicophaps foersteri* by Rothschild & Hartert three years previously.

Probably new forms can still be discovered on the mountains and in the western parts of New Britain, though, of course, little can now remain unknown. Nests, eggs, and habits require still further investigation.

1. *Tringa hypoleucos* L.

Common in March and April. Mostly moulting body plumage on underside.

2. *Tringa incana brevipes* (Vieill.).

♂ ad. Talasea, 5.iii.1925. Body plumage moulting.

3. *Numenius phaeopus variegatus* (Scop.).

3 ♂♀. March and April. Moults on body plumage.

4. *Megapodius duperreyi eremita* Hartl.

Evidently common at Talasea, a series sent.

5. *Caloenas nicobarica nicobarica* (L.).

Eichhorn found this species common near Talasea and sent a series from January. Females, besides being smaller, with shorter neck-haekles, have the rump and upper tail-coverts more golden green. Dahl, who only found it on Credner Island, was wrong in saying it did not occur on New Britain, though it may now be absent from the inhabited parts of the Gazelle Peninsula, where he made his observations. A nest consisting of a few twigs was found on the butt of a fallen tree, 2 ft. from the ground, apparently empty. Another, containing one egg, on March 5, on the ground, about 1,500 ft. above sea-level.

The egg is white with a faint creamy tinge without gloss and measures 42×32 mm. Lives, according to Eichhorn, mostly on the ground and is very shy.

6. *Ptilinopus superbus superbus* (Temm.).

Eichhorn did not find this species common at Talasea and sent only two males shot in January.

7. *Ptilinopus rivolii rivolii* (Prévost & Knip).

See *Nor. Zool.* 1924, p. 198, 1925, p. 116.

As I said before, it was to be expected that this Pigeon occurred somewhere in New Britain, and this expectation has been fulfilled. Eichhorn found it common at Talasea and sent a series collected in January and February. The wings of the males measure 128–132 mm. The iris is described as yellow, in one case reddish yellow, and once "dark," the latter possibly by an error or abnormal.

8. *Myristicivora bicolor subflavescens* (Finsch).

Eichhorn found this Pigeon apparently common in Talasea, for he sent 8 beautiful skins shot in February and March. The entire plumage to the base of the feathers is creamy yellow, deepest on head, neck, and underside; the shafts and outer webs of the lateral rectrices are quite bright chrome yellow. "White plumage tinged with yellowish" and "weiss, leicht gelblich getönt" are too mild expressions for these birds in fresh plumage, though it suits perfectly old specimens of ours collected by Webster and Curtis which were probably exposed to light when being dried, or are in old worn plumage. The freshly moulted bird collected by Eichhorn on Manus (Admiralty Is.) is like the New Britain ones. The Talasea birds are freshly moulted, some still in moult. The iris is described as brown, bill dull yellow, base and cere slaty blue, feet lead-blue.

I have no doubt that *nowhere* two forms of *Myristicivora* will be found *breeding* in the same area, and therefore believe that the above nomenclature will be correct, and that *all Myristicivorae* must be named trinomially, as subspecies of *bicolor*.

9. *Ducula (Globicera) rubricera* (Bp.).

Common at Talasea. Series from January and February. Some moulting on wings and tails, also a few feathers of the body plumage.

10. *Ducula finschii* (Rams.).

Carpophaga Finschii Ramsay, *Journ. Linn. Soc., London, Zool.* xvi, p. 129 (1881—locality not stated, but from New Ireland, teste Sharpe in Gould's *B. New Guinea*, pt. xvii).

Eichhorn found this species rare at Talasea, and sent only one pair shot January 30 and February 2. Both are moulting (body, wings, tail).

11. *Ducula melanochroa* (Sel.).

(Cf. *Nor. Zool.* 1925, p. 117.)

Eichhorn says these Pigeons are common when the figs are ripe, otherwise one does not see them, and that they do not occur below 1,500 ft. He sent 3 adults from Talasea, shot in January, which show moult on body plumage.

12. *Gallicolumba beccarii johannae* (Sel.).

Cf. *Nov. Zool.* 1924, p. 198 (also *Nov. Zool.* 1925, pp. 118, 119).

Phlogoenas johannae Selater, *Proc. Zool. Soc. London*, 1877, p. 112, pl. xvi (exact loc. doubtful, but in all probability Duke of York Island, which I designate as typical locality).

Gallicolumba beccarii nodifica Hartert, *Nov. Zool.* 1925, p. 118 (New Ireland).

In 1925 (p. 119) I said already that I believed this species "must and will be found in New Britain," where all the collecting had hitherto been done only in the Gazelle Peninsula. Now Eichhorn sent a fine series of 5 adult males and a female, shot in Talasea in March and April. The males vary in the colour of the chest, which in some is as dark as in our darkest specimens from New Ireland and Nissan and Feni Islands, in one as light as in a New Hanover bird, which agrees with the types in the British Museum. I therefore conclude that all the specimens from Dampier, New Britain, Duke of York, New Ireland, Feni, Nissan, and New Hanover are the same, and that my supposed *nodifica* (i.e.) cannot be separated; this also does away with the curious interrupted distribution which would result if *nodifica* was separable. From our examples from New Ireland it certainly seemed that they differed from the types, which have very white chests, nor did the Feni and Nissan series contradict this. The wings of the Talasea males measure 111–118 mm.

13. *Gallicolumba jobiensis* (Meyer).

Phlogoenas jobiensis A. B. Meyer, *Mith. Mus. Dresden*, i, p. 10 (1875—Jobi).

Chalcophaps margarithae Salvadori & Albertis, *Ann. Mus. Civ. Genova*, vii, p. 836 (1875—no exact locality given, but type from the coast near Hall Bay, S.E. New Guinea).

(Evidently Meyer's description of *P. jobiensis* appeared before that of *C. margarithae*, which came out in November, and therefore Salvadori adopted, in his great work, *Orn. Pap.*, iii, p. 165, and elsewhere, Meyer's name, and it is strange that in the *Cat. B.* xxi he reverted to *margarithae*, which, in its first description, he spelt correctly with an *h*, while later on he used the Italian way of eliminating the *h*. Meyer's type was a young bird, but it has been carefully examined, and Salvadori himself said that there could be no doubt whatever that the name *jobiensis* referred to the same bird which he later on called *margarithae*.)

Eichhorn calls this species "comparatively rare and shy" near Talasea, but he sent 2 ♂ ad., 1 ♀ ad., and 2 juv., shot in January, February, March, and April. "Iris dark brown, bill black, feet purplish red." Wings ♂ 148, 152, ♀ 140 mm. Young shot February and March badly moulting body plumage, wings, and tail.

14. *Henicophaps foersteri* R. & H.

Henicophaps foersteri Rothschild & Hartert, *Bull. B.O. Club*, xix, p. 28 (1906—Massawa, New Britain), *Nov. Zool.* 1911, p. 168, pl. i.

Reinwardtocnas vleyi W. Meyer, *Orn. Monatsber.* 1909, p. 36 (Toriu and Kambair, New Britain).

It is strange that this striking bird with its glossy wings was not discovered before 1905, as a good deal of collecting had been done in New Britain. Probably its real home is not in the Gazelle Peninsula, but in the main portion of the island. It seems that no specimens are known except the type in Tring, one in the Munich Museum, and the types of Father Meyer. Now Albert Eichhorn sent 2 males

and 1 female, from Talasea, shot February, March, and April. He found it rare, mostly living on the ground. "Iris dark brown, bill blackish, distal part of lower light horn-colour, feet dull purplish red." The males have larger bills and are underneath nearly white, with a reddish-brown tinge on the crop. The female has a smaller bill, and the whole underside tinged with rusty brown. This shows that the type was also a female. Wings of the Talasea males 202, 203, of the female 197 mm.

15. *Chalcophaps stephani stephani* Rehb.

Eiehorn found this Pigeon common, feeding on seeds off the ground. He sent a series shot from January to March. A young female in first plumage was shot January 21. Mostly in good plumage, but some February and March specimens moult on body, wings, or tail.

16. *Macropygia amboinensis carteretia* Bp.

Terra typica: New Ireland. Cf. *Nov. Zool.* 1925, p. 119.

Common near Talasea, fruit-eating (Eiehorn). Young and old from January to March, some moulting.

17. *Macropygia rufa rufocastanea* Rams.

Cf. *antea*, p. 43.

Eiehorn found this species rare at Talasea and sent only one female shot May 1, 1925. My surmise that this species must occur on New Britain (*antea* p. 43) has been fulfilled, though only one was obtained.

18. *Dupetor flavicollis nesophilus* (Sharpe).

Two beautiful males, March and April.

19. *Nycticorax caledonicus mandibularis* Grant (?).

Cf. *Nov. Zool.* 1914, p. 285, 1924, p. 199.

Rare at Talasea, feeding at night, according to Eiehorn. One adult female shot 7.iii.1925. Iris yellow. Wing 286, of a male shot on New Britain by Kleinsehmidt 277, of one from New Hanover (Webster coll., not sexed) 283 mm. As specimens from the Solomon Islands have wings of 250 (♀), 257 (♂), 268 (♂), 269 (♀), and 255 (♀), it seems that the Night Herons from the Bismarek Archipelago are a longer winged subspecies, but more measurements are required to confirm this! The long ornamental occipital plumes are white with a rufous tinge at base, tip, and outer webs, in the Talasea specimen.

20. *Henicopernis longicauda infuscatus* Gurney.

Henicopernis infuscata Gurney. *Ibis*, 1882, p. 128 (Blanche Bay, New Britain, type in Liverpool Museum, ex coll. Tristram).

Two specimens of this very rare bird were shot in January and February. Eiehorn says it was rare, only one other having been seen; one sees it among the tree tops and it feeds on tree-lizards, etc. Other birds take no notice of it, except the Drongos.

I treat *infuscatus* as a subspecies of *longicauda*, because it has the essential features of the latter, the same markings of the head, the same markings of the wing-quills and rectrices; but it is a much smaller and blacker, somewhat "melanistic" form; the back and rump are black, but the scapulars show the same concealed greyish-brown bars as *longicauda*; the underside, which is creamy white, striped with black in *longicauda*, is black with white bases and whitish spots and edges to some of the feathers; under wing-coverts like the breast; thighs pale brownish yellowish with blackish central longitudinal marks and a few whitish patches. "Iris bright yellow; bill pale slate, or light horn, tip blackish; feet dull bluish white."

Wings ♀ 340, ♂ 355, tail 255 mm.

Stresemann has suggested that *Henicopernis* should not be separated from *Pernis*. Being a confirmed genus-lumper I should like to agree with him, but cannot go as far as that. The nostril in *Pernis* is an oblique slit, almost closed by an operculum, while in *Henicopernis* it is an almost perpendicular oval hole, the lores in *Pernis* are covered with the often described scale-like feathers—the most characteristic peculiarity of the Honey Buzzards—while in *Henicopernis* the lores are bare with a few isolated tiny apologies for feathers, nothing like the scaly feathers of *Pernis*.

Unfortunately—as of many Papuan birds—we know next to nothing of the habits and food of this, but Eichhorn says that *H. l. infuscatus* feeds on tree-lizards, which may, of course, be only one of its prey.

Hitherto this bird has always been called *Henicopernis infuscata*, but *Pernis* admittedly being masculine, *Henicopernis* must follow suit.

21. *Accipiter luteoschistaceus* Rothsch. & Hart.

Accipiter luteoschistaceus Rothschild & Hartert, *Bull. B.O. Club*, xlvii, p. 53 (Jan. 1926—Talasea, New Britain).

This new *Accipiter* has the upperside dark slate-colour, the underside buff, on the chest, especially the sides, narrowly cross-banded, in one with brown, in the other with grey bars. Under wing-coverts uniform buff, primaries pale buff towards the base on the inner webs which have slaty-blackish cross-markings. Inner secondaries and scapulars towards the base chiefly white. Wings and tail outwardly like the back; rectrices on the inner webs towards the base buffish with slaty cross-bars. Wings 187 and 190, tail 139, 143, middle toe 28 mm. "Bill black, feet dark or orange yellow." Cere not described on labels, but bright orange in the skins. Two males were shot at Talasea on March 12 and April 21, 1925.

This interesting new *Accipiter* is nearest allied to *A. soloënsis*; in the latter, however, I have not seen such cross-barring on the chest; the tarsus in *A. soloënsis* (in males) measures about 40, in *luteoschistaceus* quite 50 mm. The second primary in *soloënsis* equals the fifth, in *luteoschistaceus* the seventh; the tip of the wing is much larger in *soloënsis*, shorter in *luteoschistaceus*, in which the fourth and fifth (not the third and fourth) primaries are longest, the third and sixth only about 4 mm. shorter—not 15 to 20 mm. as in *soloënsis*. The bill is much larger in *luteoschistaceus*. Notwithstanding great similarity between the two birds (especially in the markings of the inner secondaries) it would be

unjustifiable and rash to treat them as subspecies. Eichhorn says it was rare and not easily stalked.

22. *Accipiter novaehollandiae dampieri* (Gurn.).¹

Urospizias dampieri Gurney, *Iris*, 1882, p. 453 (New Britain).

Accipiter hiogaster rooki Rothschild & Hartert, *Nov. Zool.* 1914 p. 288 (Rook Island).

In 1914 we had no good material from New Britain, while now we have received a wonderful series, 8 adult males and females from that island. This clearly proves that we were wrong in our conclusions in 1914, when we believed that the New Britain form was larger than the Rook Island birds. The males from New Britain have wings of 189–206, females of 219–232 mm., and the wings of the Rook males measure 192 and 195 mm. (no females available). Thus Reichenow's of ♂ 185–195, ♀ 215–225 agree also quite well, but Gurney's of ♂ 209, ♀ 232–240 surpass our measurements.

It seems that a slightly *larger* (longer-winged) form is found on Manus and St. Matthias Island, as we measure males 200, 204, 212, and one female 237 mm., but these differences are so variable and surpass ours from New Britain birds in the extremes only, that we (Lord Rothschild fully agrees with me in this case) do not venture to separate the birds from Manus and St. Matthias Island, unless at any future time larger series should show that the birds from these northern islands really reach larger measurements. The females from New Britain show all more or less obvious traces of whitish bars on the underside; the female from Manus is uniform, except for one white bar on one feather.

The iris is described by Eichhorn as dark brown, bill black, feet cadmium; the cere has obviously been yellow, and on one of the labels on a Rook Island bird it is described as yellow.

Eichhorn says it is common and lives on "birds, lizards, etc."

23. *Haliastur indus girrenera* (Vieill.).

Fairly common. One adult female and one juv. shot in March, both in partial moult.

24. *Baza subcristata bismarckii* Sharpe.

Three adults shot in February and March. The one from 10.ii and one of the March specimens moult wings, tail, and body plumage.

25. *Falco severus severus* Horsf.

An adult female Talasea 31.i.1925. "Iris dark brown. Bill black and slaty blue. Feet lemon yellow."

I am unable to separate this bird from typical *severus*. Cf. *Nov. Zool.* 1915, pp. 49, 50.

Eichhorn says it was "very rare." This Falcon seems to be rare on all

¹ I fully accept, as far as it goes, for the present the classification of the species *Accipiter fasciatus* and *Accipiter novaehollandiae*, as proposed by Stresemann, *Journ. f. Orn.* 1925, p. 323. At first glance it seems very strange, but a study of these birds reveals the sense of this grouping. There are thus subspecies of *A. novaehollandiae* the following forms: *rubianae*, *pulchellus*, *rufo-schistaceus*, *bougainvillei*, *dampieri*, *misoriensis*, *leucosomus*, *cooktowni*, *novaehollandiae*, *griseogularis*, *obiensis*, *mortyi*, *pallidiceps*, *hiogaster*, *albiventris*, *polionotus*, *sylvestris*, *sumbaensis*.

islands where it occurs. This is the first we receive from the islands of the Bismarck Archipelago, where it has been recorded from New Britain and the Duke of York group only. Dahl only saw it once on New Britain, Heinroth did not come across it. In all the collections from the Solomon Islands we received it only once; even on the Sunda Islands it seems to be rare. It is a true "Hobby." The food consists chiefly or entirely of insects.

26. *Ninox odiosa* Sel.

Ninox odiosa Selater, *Proc. Zool. Soc. London*, 1877, p. 108 (New Britain, Brown coll., type in Brit. Mus.).

This Owl is only known from New Britain, where it does not seem to be rare, having been collected on the Gazelle Peninsula by Brown, Kleinschmidt, Finsch, Kubary, Dahl, and Heinroth.

Eichhorn found it at Talasea and sent 4 adults from February, March, and April. He says they have a long continuous call, sometimes lasting three minutes. He found the iris bright yellow, bill slaty, tip and culmen greenish yellow. Wing ♂ 178, 183, 187, ♀ 171, 174 mm.

There is no known ally of *N. odiosa* in the Papuan fauna but the Celebes *N. punctulata*; the latter, however, differs in having on the abdomen cross-bars or spots, instead of shaft-lines or sagittate markings, in having the tarsus feathered a little more down to the toes, no large white spots on the wing-coverts and scapulars, and in having the iris dark chestnut or chocolate brown, instead of bright yellow.

27. *Cacatoes galerita ophthalmica* (Sel.).

Cacatua ophthalmica Selater, *Proc. Zool. Soc. London*, 1864, pp. 188, 189 ("Solomon Islands," errore! Terra typica New Britain!).

Only known from New Britain! Differs from *C. g. triton* in the shorter crest, composed of wider and not upturned (convex), but slightly concave feathers, if viewed from above; in both forms the colour of the naked ring around the eyes is described as blue, but in all our skins of "triton" it is dried yellowish, while in the *ophthalmica* it appears slate, more or less spotted with yellowish. Iris brown. Bill and feet slaty black. Wings ♂ 283-300, ♀ 273-289 mm. Eichhorn found it rather common and sent a fine series. It is one of the most interesting birds of New Britain, showing that this island, by far the richest in species in the Bismarck Archipelago, has more Papuan elements than the other islands, and the farther the latter are removed from New Guinea the poorer they are in species.

28. *Micropsitta pusio pusio* (Sel.).

Nasiterna pusio Selater, *Proc. Zool. Soc. London*, 1865, p. 620, pl. 35 (substituted type locality: Duke of York Is. The originally given locality "Solomon Islands" of course incorrect).

For a long time I have wished for fresh material of typical *pusio*, and at last have received 4 New Britain specimens, 3 males and 1 female. These clearly show that our *M. p. salvadorii* is well distinguishable by its more or less yellow superciliary stripe, but I now consider that this form ranges from the Weylandt Mountains and the Mamberano River along the north coast of Papua, including the Vulean and Dampier Islands, and extends southwards to S.E. New Guinea:

Milne Bay, Aroa River, Kumusi River. Three rather poor specimens, one quite young, from Fergusson Island, D'Entrecasteaux group, may belong to a different subspecies, more like *M. pusio pusio*, but perhaps darker green on the underside.

Unfortunately I have not seen the type of *M. beccarii*. It is from Wairor on the west coast of Geelvink Bay, almost opposite Ron Island, but a little farther north; another specimen from Wandammen was considered the same by Salvadori; we have three, unfortunately very bad specimens, a male and 2 females, from the little island of Ron in Geelvink Bay, close to Wandammen and not far from Wairor, which, one should think, would be *beccarii*, but the description (and the figure in Gould's *Birds of New Guinea*) does not agree; our Ron specimens, collected by William Doherty, have the sides of the occiput yellowish, like *salvadorii*, and certainly not "*brunneo-olivaceis*" as described by Salvadori.

A specimen (not sexed), collected by A. S. Anthony in the Owen Stanley Mts. ("Kotoi district"), already mentioned, Nov. Zool., 1901, p. 81, under "*Nasiterna pusio*," is so brightly coloured, that it is not impossible that it forms a separate mountain subspecies, and future collectors in that district should try to obtain a series.

The *Micropsitta* from St. Aignan and Sudest Island in the Louisiade group, which we formerly united with *M. pusio pusio* (of which we had no adequate material), are almost exactly like the birds from S.E. New Guinea which we now consider to belong to *salvadorii*, but have much longer wings.

Wings from New Guinea measure 60 (♀) to 65 (♂), rarely 66, once 68. Twenty-five measured.

Wings in the Sudest and St. Aignan specimens from 64 and 65 (♀) to 69-70 (♂). Eighteen measured.

I therefore propose to call the long-winged Louisiade subspecies

Micropsitta pusio stresemanni subsp. nov.

Type: ♂ ad. Mt. Rin or Rattlesnake, Sudest I., 8.iv.1916. No. 7343, A. S. Meek coll.

Eichhorn found this little Parrot somewhat rare at Talasea. Three of the specimens were shot in February, one in April. Wings 59-61 mm. Two February specimens moult on the tail. These birds, according to Eichhorn, build their nests in white ants' nests; on St. Matthias Island a nest with young of *Micropsitta meeki proxima* was found not more than 9 inches from the ground.

My friend Stresemann described the *pusio* from Finschhafen (Kai Peninsula) as *Micropsitta pusio rothschildi* (*Archiv f. Naturg.*, 89A, Heft 7 & 8, 1923), correctly stating how it differs from *M. p. pusio*, except that he did not mention the yellowish colour on the supercilium and sides of the occiput, which is the characteristic difference of *M. p. salvadorii*. He kindly sent me the type-specimens, and I am sorry to say I cannot separate these birds from our series from S.E. New Guinea which in my opinion should be united with our *M. pusio salvadorii*. If the series is laid out it seems as if the specimens from the Ambernoh River and Humboldt Bay, together with those from the Kai Peninsula (Finschhafen and Bassa Bay), have the underside more yellowish, but this is a rather variable character, some from S.E. Papua being equally yellow, while the Vulcan Island ones are greener again than the Finschhafen and other north coast examples.

I am therefore afraid that all the birds from the Ambernoh River and Takar and Weylandt Mountains to S.E. Papua, including Stresemann's *rothschildi*, must be united—and it remains to be confirmed if they differ well from *beccarii*.

29. *Chamosynopsis placentis pallidior* R. & H.

Cf. *Nov. Zool.* 1924, p. 201.

Common at Talasea. February and March specimens sent.

30. *Lorius roratus goodsoni* Hart.

Lorius roratus goodsoni Hartert, *Nov. Zool.* 1924, p. 123 (Manus); cf. t.c. p. 203, 1925, p. 125, and *antea*.

The series of 4 ♂ and 5 ♀ from Talasea is not distinguishable from Manus specimens, except that the bills of several of the females and one male are smaller, thus showing a tendency towards *L. r. solomonensis*.

The wings of the males measure 240–255 mm, exactly as our Manus specimens, while the females have wings of 222 to 241 mm. (230–240 on Manus).

Eichhorn found this Parrot very common and a pest of the gardens; he says they even attack the taro in the ground; nests in hollow trees.

31. *Domicella hypoinochroa devittata* (Hart.).

Cf. *Nov. Zool.* 1898, p. 530, 1924, p. 201, 1925, p. 122.

This common Parrot was frequent at Talasea. A series sent from January; half of them moult the wing-feathers, a few the tails and their coverts. Two specimens have the black bars on the under wing, which are as a rule absent in *D. h. devittata*; one of them is quite young, the other is older, but also juvenile; apparently the black bar is an ancestral character, still present in young and very exceptionally indicated in old birds.

32. *Geoffroyus heteroclitus* (Hombron et Jacq.).

Cf. *Nov. Zool.* 1924, p. 201.

Eichhorn found this species common at Talasea. He says "that their call, while in flight, has an aeolian sound," and that, like other Parrots, they live on fruit and make their nest-holes in rotten trees. He sent a series, shot in January, February, and April. They are mostly in good fresh plumage. A juvenile male, shot January 26, moults wings and body plumage; the crown is blue-grey mixed with yellow, the coming feathers being yellow.

33. *Trichoglossus haematodes aberrans* Rehw.

Cf. *Nov. Zool.* 1925, p. 123.

Two from February, one April. One female has much narrower dark edges to the feathers of the breast than the other female and a male; the narrow edges, however, are worn off. The two February specimens moult wings, tail, and body plumage, the April one tail and breast.

Eichhorn found it not rare, and says it eats "honey," by which evidently nectar is meant.

34. *Halcyon chloris tristrami* Layard.

Halcyon tristrami Layard, *Iris*, 1880, p. 469, pl. xv ("Makira harbour, we believe." Evidently the belief that this bird came from Makira harbour, on the island of San Christoval, was erroneous, as the description and figure are certainly not taken from San Christoval specimens, but agree best with New Britain ones, and the types in the Tristram collection, now in Liverpool, are marked as coming from Blanche Bay, New Britain. Therefore Blanche Bay, New Britain, should be regarded as the typical locality of *H. tristrami*. See *Nov. Zool.* 1905, p. 256 †).

We have at last received a series of eight real *tristrami* from New Britain; these, in connection with the fine material of other forms of the *tristrami* group of these Kingfishers, enable me to review the various forms profitably. In opposition to my former views I now treat them as subspecies of *Halcyon chloris*. The belief that two forms of *H. tristrami* and *chloris* were found in one and the same locality was evidently due to the insufficient material formerly available, and the misleading conception of these birds in the *Cat. B. Brit. Mus.*, xvii. Cf. *Nov. Zool.*, 1925, pp. 125-127.

(1) *Halcyon chloris tristrami* Layard.

Terra typica New Britain. See above!

Abdomen bright rufous, gradually paling off to almost white on the throat, sometimes paler from having a white patch in the middle of the abdomen, but flanks and under wing-coverts remain always rufous. Possibly the birds from the Gazelle Peninsula have longer wings, measuring 106-111, once 116 mm., while those from Ta'asea are all 105-107 mm. long. (Two specimens from Fauro in the Solomon group, with wings of 105 and 107 mm., are indistinguishable from *tristrami*, but must belong to *alberti*. All statements of occurrences elsewhere than on New Britain will be wrong; in the Solomon Islands represented by *alberti*—if separable—and *solomonis*.)

(2) *Halcyon chloris alberti* R. & H.

Halcyon tristrami alberti Rothschild & Hartert, *Nov. Zool.* 1905, p. 256 (type: Kulambangra †).

Inhabits Kulambangra, Rendova, Vella Lavella, Guadalcanar, Isabel, Gizo, Bougainville—and must also be the Fauro form. Twenty-nine specimens before me.

This form is a very close ally of *H. c. tristrami*; when it was described we did not understand its variability and how close it is to *tristrami*. It might by some ornithologists be united with *tristrami*, but crown and wings are deeper blackish and blue, and the rump is deeper blue than in any *tristrami* we have, i.e. our 8 from Talasea and 2 from the Gazelle Peninsula received in exchange from Berlin; strange to say the two Fauro specimens have the rump as pale as in the New Britain *tristrami*.

Wings 102-111, mostly 104-108 mm.

(3) *Halcyon chloris solomonis* Rams.

Halcyon solomonis Ramsay, *Proc. Linn. Soc. N.S. Wales*, vi, p. 833 (1882—no locality stated, but in *Proc. Linn. Soc. N.S. Wales*, vii, p. 21, Ugi and St. Christoval are said to be the localities, and the distinctive characters are very well stated). *Nov. Zool.* 1925, p. 126.

Halcyon perplexa Rothschild & Hartert, *Nov. Zool.* 1908, p. 361 (San Christoval).

Seems to be restricted to the island of San Christoval, Solomon group, and its satellites (Ugi, and perhaps others).

Very easily distinguished from the forms mentioned above. Very much smaller, wings 93–95 mm. No concealed white patch on the nape! Upperside of a different, somewhat lighter blue. Underside white, but sides of body and a large patch on sides of breast cinnamon, nearly forming a band across the breast. Lores, small patch behind eye (which is not found in *tristrami* and *alberti*!), and nuchal collar cinnamon, but in some specimens white, also without cinnamon on underside.

Though this form is so very different I have no doubt that it is a subspecies of *chloris*. I explained before that this form was already described in vol. vi of the *Proc. Linn. Soc. N.S. Wales*, and that *perplexa* is a synonym!

(4) *Halcyon chloris nusae* Heinr.

Halcyon nusae Heinroth, *Journ. f. Orn.* 1902, p. 437, pl. viii, fig. 2 (Nusa and other small islands and New Hanover, and near north coast of New Hanover); *Nor. Zool.* 1924, p. 205, 1926, p. 38.

Common on New Hanover and Feni Island, the small islands between New Hanover and New Ireland—probably also parts of New Ireland, but in the S.W. part it is represented by *H. c. novaehiberniae*.

The white patch on the occiput is present again and often more developed and less concealed; differs from *tristrami* chiefly in the blackish and sometimes dull greenish (less bluish) black crown. Upper back, scapulars, and upper wing-coverts darker, more greenish; underside and nuchal collar white, the latter sometimes buff or light cinnamon, in which cases there is also a pale cinnamon patch on the sides of the chest.

Wings 105–110, once (a Feni specimen) 115 mm.

(5) *Halcyon chloris novaehiberniae* Hart.

Halcyon tristrami novaehiberniae Hartert, *Nor. Zool.* xxxii, p. 125 (1925—S.W. New Ireland).

Only known from south-western New Ireland.

Differs from *tristrami* in having shorter wings, 102–107 mm., underside, lores, and collar white, with or without a faint buff tinge, bill shorter: 35–39 mm. from end of frontal feathering.

Differs from *nusae* in having the wing shorter, the nuchal white patch apparently not larger than in *tristrami*, the scapular blue, rump of a somewhat deeper blue.

(6) *Halcyon chloris stresemanni* Laubm.

Halcyon chloris stresemanni Laubmann, *Verh. Orn. Ges. Bayern*, xv, p. 391 (1923—"Französische Inseln im Bismarck-Archipel").

Very near to *novaehiberniae*, but wings 107–110, bill larger! Crown of head not so black as is freshly plumaged adult *nusae*, wings, rump, outside of quills and tail deeper blue! Underside white, but lower abdomen light cinnamon, gradually whitening towards the breast; nuchal band white or white. So far only known from the French Islands (Witu), but a specimen from Rook Island, which Rothschild and I, *Nov. Zool.*, 1914, p. 212, called "*Halcyon tristrami tristrami*," is indistinguishable from our series from Witu.

Eichhorn found the *H. c. tristrami* common at Talasea and says that it makes a nest hole high up in rotten tree trunks. The specimens he sent were shot in February and March. Some March specimens are in badly worn

plumages and moult body plumage, 2 also tails and 1 primaries; on the breast fresh-coming feathers are considerably darker cinnamon than the old faded worn ones.

Halcyon pachyrhynchus Rehw., *Orn. Monatsber.* 1898, p. 48, from New Britain, is, of course, the young *tristrami*. This was known to Reichenow in 1899, as he placed the name correctly in the synonymy of *H. c. tristrami*, and it would perhaps not have been necessary to repeat it here, if in the description it had not been compared with *H. vagans*, or more correctly *Halcyon chloris sanctus* from far-away New Zealand.

35. *Halcyon albonotata* Rams.

Halcyon al onotata Ramsay, *Proc. Linn. Soc. N.S. Wales*, 1884, p. 863 (New Britain).

This very rare bird was found by no means common, but Eichhorn managed to get 7 specimens at Talasea, in February, March, and April; he says it makes its nests in white ants' nests on trunks of trees. The iris is dark brown, bill black, feet black; one female has some whitish colour on the under mandible.

The male has the back white from the upper back to the tail-coverts inclusive; in the female only the upper back is white, the lower back and rump are purplish blue, these purplish blue feathers reaching over the short white upper tail-coverts. Under surface entirely white in both sexes. Wings ♂ 82-85, ♀ 82-82.5 mm. On both sides of the forehead, just behind the nostrils, is a white spot. The crown is rich blue, on the sides lighter and more ultramarine; a black (not blue!) band from the lores over the ear-coverts and narrowly encircling the blue crown. Scapulars and wing-coverts deep purplish blue, rather different from the crown. A more or less concealed white patch on the nape. Under wing-coverts white, on the under primary coverts a small dusky patch, varying in size.

The nearest ally is *Halcyon leucopygia* from the Solomon Islands, in which the sexes differ in the same way. In the latter, however, the crown is of the same colour as the scapulars, there are no white spots on the forehead, and there is on each side of the rump a reddish-lilac patch; this colour also covers the under tail-coverts, which are white in *H. albonotata*; *H. leucopygia* is also somewhat larger.

(*Halcyon toriu* Meyer, *Orn. Monatsber.* 1909, p. 34, from the Toriu River in the Gazelle Halbinsel, New Britain, is *H. macleayi*.)

36. *Halcyon sancta sancta* Vig. & Horsf.

This winter-visitor from Australia was found common in April and May. Most of the specimens sent are moulting, some in April already in beautiful fresh plumage, others in quite worn old garb, some juvenile.

37. *Tanysiptera sylvia nigriceps* Sel.

(*Tanysiptera sylvia sylvia* from Australia and *T. sylvia salvadorina* from New Guinea are closely allied; if only subspecies the New Britain form must be called *T. sylvia nigriceps*; the latter has the crown black, the other two blue; *sylvia* has the upperside blue, while in *nigriceps* and *salvadorina* only the wings are blue, and in *salvadorina* the patch on the interscapulum is brownish buff, but fades considerably in worn plumage.)

Tanysiptera nigriceps Selater, *Proc. Zool. Soc. London*, 1877, p. 105 (Duke of York Is.).

Eichhorn sent a fine series of 11 of this species, shot from January to March. February 18 and March 23, young birds were shot. The sexes are perfectly

similar; the tails vary in length, but not according to sex. The longest middle rectrices I measure 175; the shortest, in a full-grown male, 145 mm. The iris is marked as dark brown, bill deep red, feet dull yellowish, dull greenish yellow, one dull reddish yellow. In the young the bill is brown, the under mandible only yellowish. In the young the feathers of the crown are black as in the adult, but those of the nape and a line from above the eyes have blue tips. The patch on the interscapular region is buff, or pale rufous brown; in the adults this patch is white, but generally with a faint buff tinge in front. The outer webs of the elongated rectrices are blue, the inner ones white, while in *T. sylvia leucura* Neum., from Rook Island, all rectrices are perfectly white in fully adult birds.

Eichhorn found this *Tanyiptera* fairly common at Talasea.

(With other birds supposed to have been collected on New Ireland we received many years ago a *T. s. nigriceps*, but as nobody else has found it there, and it was not labelled, this locality cannot be credited; while in that collection were mostly undoubted New Ireland specimens, a few others in it were obviously not from there.)

38. *Ceyx lepida sacerdotis* Rams.

Ceyx sacerdotis Ramsay, *Journ. Linn. Soc. London, Zool.* xvi, p. 128 (1822—New Britain).

Eichhorn sent a very welcome series of 10 specimens from the Talasea district. We possessed only a bad skin collected by Heinroth and 7 from Rook Island. The latter, shot in July and August, are in magnificent fresh plumage, while the Talasea ones, collected from January to April, are more or less worn and some begin to moult. It seems for this reason that the shining ultramarine spots to the tips of the feathers of the crown are larger in the Rook examples, smaller in the Talasea ones, in which they are worn down. The Talasea birds range not quite so large as the Rook examples; while on Rook Island the wings measure 60–65 (the latter only once), in the Talasea ones they are 60–61, in the one from Ralum 61 mm. Also the bills on Rook Island range from 32–35 (measured from the nostril), on New Britain 30–32.5 mm. I do not venture to separate the Rook form for this reason, as larger series might show that these differences are not constant.

I have already (Nov. Zool. 1914, p. 213) shown that only the lower mandible can be described as "red," the upper being brown or blackish; in the *Cat. B.*, xvii, p. 184, Sharpe described the Solomon Islands form which Rothschild & Hartert named *Ceyx lepida collectoris*.

Eichhorn says these birds were not common and made their nests in the form of holes in a bank, also that they lived in the scrub, not on water.

39. *Alcedo atthis pelagica* Stres.

One pair sent.

Eichhorn found them inhabiting rivers, creeks, or mangrove swamps, and says they tunnel a hole, about 15 inches deep, in a bank, and that they live on fish.

40. *Scythrops novaehollandiae* Lath.

Scythrops novaehollandiae Latham, *Index Orn.* i, p. 141 (1790—near Sydney, N.S. Wales).

Eichhorn sent 2 males, one with a much smaller bill than the other. He saw very few, generally with 2 crows in hot pursuit. It is known (Otto Meyer, P. Schumm) that the crow is the foster-parent in New Britain—as it is in Australia. Mathews separated a western subspecies, but it does not seem to be tenable. Eichhorn marked the eye as dark red.

41. *Cuculus optatus* Gould.

Cuculus optatus Gould, *Proc. Zool. Soc. London*, 1845, p. 18 ("Port Essington, Australia").

Three adults, all three marked as males, 12.i.1925 and 10.ii.1925. The two February specimens moult their body plumage. Of course migrants from Siberia or North China, etc.

42. *Eudynamis scolopacea salvadorii* Hart.

Eudynamis orientalis salvadorii Hartert, *Nov. Zool.* 1900, p. 232 ("New Britain and New Ireland").

(A specimen said to be from New Ireland, which came with many other New Ireland birds, was made the type; as, however, nobody else seems to have got this bird from New Ireland, it is possible that the type had come from Duke of York Is., or New Britain.)

Three males from March, one female from April; they are quite typical. The wings of the males measure 207 and 217, one is moulting, ♀ 214 mm. Iris males bright red, ♀ dark reddish brown; bill males slaty blue, female dull bluish grey and black; feet slate.

Eichhorn says it is "common."

43. *Cacomantis variolosus macrocercus* Stres.

Nov. Zool. 1925, pp. 127, 168.

Eichhorn sent a fine series of 8 adult and 1 juv., all marked as males. Their wings measure 119, 125, 126 (three times), and 130 (twice) mm. One is moulting on the outer primaries. Under tail-coverts chestnut-rufous in all, under-surface grey, belly more or less rufous, abdomen grey, in most specimens with a varying amount of rufous tinge. Under wing-coverts light chestnut-rufous to pale rufous, "Iris brown; bill black, base of mandible brown, feet dull yellow and brown, or brownish yellow."

A young in first plumage was shot April 27.

Eichhorn says it is common and feeds on caterpillars.

44. *Chalcites lucidus lucidus* (Gm.).

Cf. *Nov. Zool.* 1925, p. 159.

1 ♂, 2 ♀♀. Talasea 28, 29.iv.1925.

Eichhorn says it seems to be migratory. It is indeed a winter visitor from New Zealand.

45. *Centropus ateralbus* Less.

Nov. Zool. 1925, p. 127; *Bull. B.O. Club*, xlvii, p. 50 (January 1926).

Eichhorn sent a remarkable series of 19 skins in many different colorations. Lord Rothschild has described these variations in *Bull. B.O. Club*, xlvii, and I have mentioned some in *NOV. ZOOL.* xxxiii.

The "normal" plumage is undoubtedly blue-black, throat, chest, and a wide ring round the neck buffy white—also most of the primary coverts white, and this white patch occurs in all varieties, even if the white on throat, chest, and neck is replaced by black, though in that case single whitish feathers are usually seen irregularly here and there. In the series from New Britain are a number of brownish white and pearl-grey specimens, described by Lord Rothschild, i.e. Among the whitish-grey specimens is a young in first plumage. The iris of adults is dark red (in one case marked as dark brown), in young birds brown or bluish grey. The bill is black in adults, under mandible and tip of upper light horn-brown in young birds.

Eichhorn found the species common, living, as described by Dahl, from the ground to the highest trees, from which they "plane" down.

46. *Centropus violaceus* Quoy et Gaim.

Nov. Zool. 1925, p. 127.

Eichhorn sent a series of 8 adults, mostly males. The females don't appear to differ from the males. The iris is red ("dark red," "bright red"), bill black, feet "dull white, whitish slate, slaty bluish." The tails of all these are shorter than in the one we had from New Ireland (typical locality), which has a tail of 410 mm., while the tails of the Talasea birds measure (full-grown ones only measured) 320, 330, 325, 350, 350, 365 mm., females not smaller; wings 253, 253, 256, 275, 285 mm. It is therefore possible that the New Ireland form has a longer tail, in which case the one from New Britain must receive a new name.

Eichhorn calls it "uncommon but not rare," and says that it frequents places thick with vines or twining ferns, and that they "work up to the top of the trees, and then plane down," exactly as it is described of *Centropus ateralbus*. Mostly seen in pairs, timid, loud booming call, bad fliers.

The specimens were shot January to April; most of them show moulting feathers in tail and wings.

47. *Eurystomus orientalis crassirostris* Sl.

Eurystomus crassirostris Selater, *Proc. Zool. Soc. London*, 1869, p. 121 (Solomon Is., errore, terra typica New Britain—cf. *Nov. Zool.* 1903, p. 197).

Five specimens, January, February, and April.

So far, I have found the differences between *crassirostris neohanoveranus* (sic) and *solomonensis* quite good, but an adult female (No. 9675) from Talasea, shot January 12, has an (? abnormally) large bill, with a very small black tip and the purplish-blue forehead of *neohanoveranus*. As 3 of the others have the upper bill (maxilla) mostly blackish, we cannot say that we have an adequate series from New Britain. If No. 9675 is a normal adult, the New Britain form (*crassirostris*) would not differ from *neohanoveranus*, except by the black tips to the maxilla, which is, however, sometimes found in New Hanover! In our large

series of supposed *crassirostris* from New Guinea I have not found one with a bill so large as in No. 9675, nor one with a purplish forehead. The other specimens from New Britain can, however, not be satisfactorily separated from the Papuan series. Is now the No. 9675 a stray bird from New Hanover? Hardly possible, as from the French Islands we received what we call typical *crassirostris*, like the Papuan birds.

48. *Merops ornatus* Lath.

A series from end of March and April, some in juvenile plumage.

Eiehorn finds this Australian bee-eater common on the coast. He says they arrive end of March and in April, and leave New Britain in September and October, that is, at the end of the north-west and by the end of the south-east monsoon respectively; they have special roosting-trees.—There is no proof whatever that they ever nest on these islands! April specimens begin to moult, but an adult male from March 31 has already fully moulted middle reetries.

49. *Caprimulgus macrurus albolaxatus* R. & H.

Caprimulgus macrurus albolaxatus Rothschild & Hartert, *Nov. Zool.* 1918, p. 323 (New Britain to Vulcan Island, type Vulcan Island); Stresemann, *Archivf. Naturg.* 89, Abt. A, 7. and 8. Heft, 1923.

Two males from Talasea, May 1925. The white on the inner web of the first primary keeps about 2 to 2.5 mm. away from the shaft, the white on the outer tail-feathers is 55 and 60 mm. long. This subspecies is, I am afraid, only recognisable in series; single specimens are apparently not always very distinct.

Eiehorn says he found it in the low country on the coast.

50. *Hemiprogne mystacea aeroplanes* Stres.

Hemiprogne mystacea aeroplanes Stresemann, *Anzeiger Orn. Ges. Bayern*, No. 5, p. 38 (1921—New Britain, type Blanche Bay).

A series from January and February, when they were not rare. Wing ♂ 209–215, ♀ 210–217, but once 225 mm.!

51. *Collocalia francica reichenowi* Stres.

Cf. *Nov. Zool.* 1925, p. 128.

1 ♀ ad. Talasea 28. iv. 1925.

This specimen agrees with our 3 skins from New Ireland, and I think now that it is the same as the Guadaleanar (Solomon Is.) one. These birds are very much like *C. f. eichhorni* from St. Matthias Island (*Nov. Zool.* 1924, p. 269), but in the series the back is slightly darker, less brownish, while the bar across the rump is more brownish in *reichenowi*, somewhat whiter in *eichhorni*.

Eiehorn says it was common, but sent only one female.

52. *Pitta macklotii gazellae* Neum.

[*Pitta Macklotii* Temminck, Pl. Col. 537 (1834—type from Lobo, New Guinea, Salomon Müller coll.).] *Pitta macklotii gazellae* Neumann, *Orn. Monatsber.* 1908, p. 27 ("Gazelle-Halbinsel Neu Pommern," i.e. N.E. New Britain).

Cf. *Nov. Zool.* 1914, p. 213.

A very fine series of 7 adults and 1 jun., with throat still partly whitish, lower abdomen brown. "Iris brown, light brown, or dark brown. Bill black.

Feet pale slaty blue." In the young bird the mandible is brownish-horn colour. All collected January to March.

Eichhorn says that one seldom sees these birds unless one whistles them up. Nest a ball of leaves on the ground. The native name is Ruk. It lives entirely on the ground, feeding on insects, larvae, etc., but ants are not recorded by any observer. Otto Meyer found eggs in June, September, December, and February.

53. *Hirundo tahitica frontalis* Quoy et Gaim.

Hirundo frontalis Quoy et Gaimard, *Voy. Astrolabe, Zool.* i, p. 204, pl. xii, fig. 1 (1830—Dorey, New Guinea); cf. Oberholser, *Bull. 86. U.S. Nat. Mus.* 1917, p. 33, Stresemann, Sepik article, p. 25.

It seems to me certain that a Papuan race, extending from New Guinea to New Britain and the D'Entrecasteaux Islands, must be distinguished from *H. tahitica javanica*, the red on face and throat being slightly paler, underside as a rule less dark, wing generally longer. It is strange that both *frontalis* (recorded as *javanica*) and *tahitica* have been obtained in New Britain, but probably only the former is breeding there, and *H. tahitica tahitica* is a visitor. I therefore follow provisionally the arrangement proposed by Stresemann.

Only a single male was sent from Talasea, where Eichhorn found the species rare; shot March 6, 1925. It has just completed its moult, outermost primary still growing.

54. *Monarcha alecto chalybeocephalus* (Garnot).

[*Drynophila alecto* Temminck, *Pl. Col.* 430, fig. 1 (1827—"Celebes," errore! Terra typica Ternate, cf. *Nov. Zool.* 1918, p. 315.)

Muscicapa chalybeocephalus Garnot, *Voy. Coquille*, i, 2, p. 589, pl. 15 (1829—Port Praslin, South New Ireland).

Adult males, adult females, and 2 ♀ juv., January to March. The females of course have the upperside of the head glossy green-black, the underside white with a faint rusty tinge on the belly, mandible and maxilla dark. The younger female has a certain amount of rust-colour on the breast, sides, and abdomen, and part of the mandible bluish.

Eichhorn found this species common on the coast, and saw it at 1,200 ft. elevation.

55. *Monarcha hebetior eichhorni* Hart.

Monarcha hebetior eichhorni Hartert, *Nov. Zool.* 1924, p. 271, 1925, p. 129 (New Ireland).

4 ♂ ad., 3 ♀ ad., Talasea, January and February 1925.

"Iris dark brown, bill black and chalky blue, feet black." The bill seems to be blue, with tip and lower mandible black. Wings ♂ 81–86, ♀ 77–77.5 mm.

Eichhorn says that in New Britain this is a mountain species, not occurring on the coast, and that the call is the same as that of *M. a. chalybeocephalus*.

The various forms of blue-black *Monarcha* from these islands may be described as follows:

Monarcha alecto chalybeocephalus.—♂ ad. Steel-blue, feathers of crown longer. ♀ ad. Top of head greenish steel-blue, underside pure white.

Monarcha hebetior hebetior.—♂ ad. Darker, more blue-black, feathers of crown shorter. Wings 60–62 mm. ♀ ad. Top of head blue-black, underside

white with a greyish tinge, the black bases of the feathers extending further. Wings 57, 60 mm.

Monarcha hebetior eichhorni.—♂ ad. Still darker, more deep blue-black, feathers of crown slightly longer than in *hebetior*, shorter than in *chalybeocephalus*. Wings 81–86. ♀ ad. Top of head dark ashy grey, underside ashy grey, middle of abdomen whitish. Wing 75–77.5 mm.

56. *Monarcha verticalis* Scl.

(Cf. *Nor. Zool.* 1914, p. 214, 1924, p. 207, 1925, p. 129.)

Eichhorn sent a series of adult males and females and one young, all shot in February.

It seems as if the white of the rump is more extended in the specimens from New Ireland and New Hanover, but as this is also the case in the birds from Rook Island, and as it is rather variable, I am of opinion that it is *not* a local character. One of the two females sent from Talasea has no pure white on the rump, and the other not very much. Females from other islands, however, are not distinguishable from males, and they must be correctly sexed, as it is not conceivable that we should never have received a female before. One female has small white spots to the tips of 3 of the throat feathers. Two perfectly adult males from New Hanover, one from Rook Island, and one from Talasea have small white spots to the outer or inner webs of the lateral rectrices.

57. *Rhipidura tricolor melaleuca* (Quoy et Gaimard).

(Cf. *Nor. Zool.* 1914, p. 215, 1925, p. 130.)

Eichhorn found this flycatcher common on coastal flats and sent a series collected in February, March, and April, mostly moulting primaries.

58. *Rhipidura rufiventris finschii* Salvad.

Rhipidura finschii Salvadori, *Orn. Pap.* iii, p. 532 (New Britain).

(Cf. *Rhipidura rufiventris setosa*, etc., *Nor. Zool.* 1925, p. 130.)

Eichhorn found this bird common at Talasea and sent a series, all shot in January. This is a very distinct subspecies. Wings ♂ 84–90, ♀ 78.5–79 mm.

59. *Rhipidura dahli dahli* Rehw.

Rhipidura dahli Reichenow, *Orn. Monatsber.* 1897, p. 7 (Ralum, New Britain); id. *Mitteil. Zool. Samml. Berlin*, i, p. 88, pl. ii, fig. 2 (1899—Ralum); Hartert, *Nor. Zool.* 1925, p. 130.

It is strange that this bird was not discovered before by Kleinschmidt, Finsch, and other collectors, and that it was left to Dahl to make it known for the first time. It does not seem to be particularly rare and *Rhipiduræ* are somewhat conspicuous birds. Eichhorn found it fairly common at Talasea and sent 8 skins, one shot January 27, the others in February and March.

These specimens agree very well with each other. All the tail-feathers have a large black patch before the tip; these black patches are largest on the middle pair of rectrices where they vary in length from 30 to 38 mm., and they are slaty black and *clearly visible both above and below*. The top of the head, lores, and far-coverts are dusky brown, or a sort of umber brown. The wings measure ♂ 67–68, ♀ apparently much shorter, but both moulting!

In Nov. Zool. 1925, p. 131, I said already that a series of males from New Ireland and New Britain might show differences; this is indeed the case, and I am obliged to name the subspecies from New Ireland, and propose for it the name

Rhipidura dahli antonii subsp. nov.

in honour of Anton Reichenow, whose work on the birds of the Bismarckinseln is of the utmost value and usefulness to me during my studies of the birds of these islands; as there is already a *Rhipidura reichenowi* Finsch from Babber (a very distinct subspecies of *rufifrons*), I name it by Reichenow's Christian name.

Rhipidura dahli antonii differs from *R. dahli dahli* as follows:

The blackish patches on the rectrices are less in extent, in none of our 6 specimens more than 19 mm. long.; they get much smaller and disappear entirely on the lateral pairs, and are *not visible from underneath*, also they are more greyish, not so dark. The lores and ear-coverts are darker. In the New Ireland form the tip of the middle rectrices is at least a centimetre wide, in *R. dahli dahli* only a few mm., and sometimes the black extends quite to the tip. Type of *R. dahli antonii*: ♂ ad. New Ireland, 18.i.1924. No. 8975 A. F. Eichhorn coll., in the Tring Museum.

60. *Lalage karu falsa* Hart.

Lalage karu falsa Hartert, Nov. Zool. 1925, p. 131 (Duke of York I, New Britain, Rook I., type Duke of York Island).

5 ♂, 3 ♀ ad., collected in January. In Nov. Zool. 1925 I have stated the differences between *L. k. karu* from New Ireland, *L. k. albidior* from New Hanover, and *L. k. falsa* from New Britain, Duke of York, and Rook Island. The series from Talasea fully confirms these differences. Wings ♂ 95-99, ♀ 95, 96 mm.

61. *Turdus talasea* R. & H.

Turdus talasea Rothschild & Hartert, Bull. B.O. Club, xlvii, p. 53 (January 1926—Talasea, New Britain).

This fine new Thrush has the upperside greyish slate-colour, darkest on the head, lighter on the rump, and upper tail-coverts, the edges of the feathers with glossless black borders, which get narrower on the rump and disappear on the tail-coverts. Sides of head slaty black with white spots. Underside white, sides lunulated with black edges to the feathers, under tail-coverts white. Quills blackish brown, bases of inner webs from the third white, causing a "Geocichline pattern," the antepenultimate secondary with white edge to the inner web; upper wing-coverts dull black, middle and largest series with big white tips, producing two oblique bars across the wings; outer webs of primaries with greyish-brown edges; under wing-coverts brownish black, the longest with wide white tips, auxiliaries about basal half white, distal half black. Rectrices slaty black, lateral pair with triangular white tip, occupying about half the feather, second pair with triangular white tip about 11 mm. long. "Iris dark brown, bill black, feet light horn-colour." Wing 107, tail 80 mm.

Only a single female was obtained by Mr. Eichhorn on February 12, 1925, at an altitude of 1,960 ft. It was shot off the nest, which is an oblong cone about 20 cm. long, built of moss, here and there interwoven with rootlets, the neat cup consisting entirely of fine rootlets. The 2 eggs look like small Black-

birds' eggs with fine rufous spots, more numerous towards the thick end. They are elongated and measure 28×19.2 and 29×19.5 mm.

The discovery of this new species suggests that more unknown birds might yet be found on New Britain. It was shot at 1,900 ft. high, while the mountains south-west of the Gazelle Peninsula are said to be up to 1,600 and even 2,300 m. high, and some near the south coasts seem still to be unexplored.

62. *Dicaeum eximium layardorum* Salvad.

Dicaeum layardorum Salvadori, *Ann. Mus. Civ. Genova*, xvi, p. 67 (1880—Blanche Bay, New Britain).

A series Talasea January to March. Eichhorn says he found it common, and that it "lives on the local mistletoe (parasite) berries." It seems strange that *Dicaeum* should live largely on berries, and I do not know which plant is the "mistletoe" of New Britain.

The differences of the two forms, *D. e. eximium* of New Ireland and New Hanover, and *D. e. layardorum* of New Britain and Vuatom (teste O. Meyer) have been explained *Nov. Zool.*, 1924, p. 211. The iris of *D. e. layardorum* is brownish red or reddish brown, that of *D. e. eximium* dark brown.

63. *Cinnyris sericea corinna* (Salvad.).

Hermotimia corinna Salvadori, *Atti R. Accad. Sci., Torino*, xiii, p. 532 (1878—Duke of York Island).

Eichhorn found this Sunbird common in Talasea and sent a series shot from January to March.

64. *Cinnyris jugularis flavigastra* (Gould).

Cf. *Nov. Zool.* 1925, p. 134.

A series of beautiful adults of both sexes collected March to beginning of May. Eichhorn says it was found "common on coastal flats." They are very bright, almost orange-yellow underneath.

65. *Myzomela cineracea cineracea* Sel.

Myzomela cineracea Sclater, *Proc. Zool. Soc. London*, 1879, p. 448, pl. 37 (New Britain); cf. Rothschild & Hartert, *Nov. Zool.* 1914, p. 217 (Rook Island).

Eichhorn sent 8 (only one female) shot in February, March, and April. "Iris dark brown. Bill black, feet slaty blue."

As we have said in 1914, not only the young but also the adult females have a rosy-red chin and dark patch on the middle of the throat.

As in other cases this toptypical series is of importance and shows that the birds we mentioned from Rook Island (i.e.) differ somewhat. The colour is the same, but in the series the bill is slightly larger, thicker, the wing, on the other hand, as a rule, a little shorter in the New Britain form, the bill somewhat weaker and the wing longer in the Rook Island form. Wing ♂ Talasea 74–75.5, once 76, ♀ 63, in one from the Gazelle Peninsula 65 mm.—The wings of the Rook ♂ 76–78, ♀ 65 mm. I therefore name the latter form

Myzomela cineracea rooki subsp. nov.

Type: ♂ ad. Rook Island 24. vii. 1913. No. 5810. A. S. Meek coll.

One is tempted, and it may perhaps be done in future, to make *M. cineracea* a subspecies of *M. obscura* Gould 1842, but at present it seems to me not advisable,

because the female of *M. obscura* and its subspecies is like the male, only smaller, not showing red on the chin.

66. *Myzomela erythromelas* Salvad.

Myzomela erythromelas Salvadori, *Atti R. Accad. Sc. Torino*, xvi, p. 624 (1881—New Britain, discovered by Th. Kleinschmidt): Reichenow, *Vög. d. Bismarckinseln*, p. 102.

Myzomela guentheri, Gadow, *Cat. B. Brit. Mus.* p. 129, pl. iii (1884).

Eichhorn sent 6 beautiful adult males, shot by the end of April on the "coastal flats"; he describes the female, but did not send any. It is a somewhat rare bird, and is only known from New Britain. "Iris dark brown. Bill black. Feet slaty blue." Wings 54–56.5 mm. Some are in moult (tail and back), one showing some olive feathers, proving that the juvenile plumage resembles that of the adult female.

67. *Philemon novaeguineae cockerelli* Sel.

Philemon cockerelli Sclater, *Proc. Zool. Soc. London*, 1877, p. 104 (New Britain) (not "U.S. Nat. Mus." as given *Nov. Zool.* xxi, 1914, p. 216!).

Eight shot in January, one in April. The January specimens have a rather dark upperside, being in perfectly fresh plumage, the April one is a shade paler, while others killed in July and October are much paler, more brown, on the upperside. "Iris dark brown, bill black, feet slaty blue." In one specimen the iris is marked as "grey." Eichhorn found them common. Wings ♂ 156–160, ♀ 155–160 mm.

In *Nov. Zool.*, 1914, p. 216, we have already stated that males from Rook Island have wings of 167–168, females of 159–163 mm. Also that they have rather powerful bills. They are therefore a larger race. We said that "we should not be astonished to find this confirmed by comparison with a larger series from New Britain." As this is now the case I name the subspecies from Rook Island:

Philemon novaeguineae umboi, subsp. nov.

"Umboi" being the native name of Rook Island.

Type: ♂ Rook Island, 21. vii. 1913. No. 5763. A. S. Meek coll., collected by A. F. Eichhorn, in the Tring Museum.

68. *Pachycephala pectoralis finschi* Rehw.

Cf. *Nov. Zool.* 1925, p. 132.

Eichhorn found this species common at Talasea and sent a series from January and February. Two of the females show faint cross-bars on the throat, thus reminding one superficially of the females of *P. p. dahl*i. The crown is darker (more rufous) brown, or somewhat paler, more olivaceous, in a younger specimen (with horn-brown bill) it is more greenish.

Wings ♂ 87–91, ♀ 85 mm.

69. *Megalurus macrurus interscapularis* Sel.

Cf. *Nov. Zool.* 1925, p. 134.

Half a dozen specimens were collected at Talasea on May 2 to 9, all in moult.

Eichhorn calls it somewhat rare and saw the nest, "a matted ball of grass in tussock of grass," but he had to leave before eggs were laid,

70. *Edolisoma morio heinrothi* Stres.

Edolisoma morio heinrothi Stresemann, *Orn. Monatsber.* 1922, p. 7 (Blanche Bay and Ralum in New Britain).

5 ♂, 4 ♀, Talasea, January to April. "Iris dark brown" in both sexes. Of the females only one is very old, it has a blue-grey crown, olive-brown back, edges to quills and upper wing-coverts chestnut, underside chestnut-rusty-buff with slaty-black wavy cross-bars to every feather, under tail-coverts uniform rusty. Of the others 3 have black bills and cannot, therefore, be exactly young, but they show a few juvenile wing-coverts and pointed lateral rectrices, which prove that they are only just out of the juvenile dress, and the crowns are still more or less brownish, the underside more or less paler than that of the very adult male. The adult males are very nearly exactly the same as the *E. m. remotum*, but in the series the crown is a shade darker, the bills slightly less powerful.

E. m. remotum, *rooki*, and *heinrothi* are closely allied, and may be characterised, as follows :

E. m. remotum.—♂, bill averaging slightly larger, wing 125–127 mm. ♀, underside unbarred! Sometimes indications of bars. Habitat: New Ireland, New Hanover, and Feni.

E. m. heinrothi.—♂, wing 125–130, bill averaging slightly smaller. ♀, underside heavily barred. Habitat: New Britain.

E. m. rooki.—♂, wing 121, 122; ♀, as heavily barred as that of *heinrothi*, but not so rufous (not darker, as Stresemann thought). Habitat: Rook Island.

71. *Graucalus lineatus sublineatus* Sel.

Cf. *Nov. Zool.* 1925, p. 132.

One female, 27.i.1925. "Iris bright yellow, bill and feet black." Wing 136 mm.

Eichhorn found it rare and says it "lives among the highest tree tops." This may be the reason why the native "boys" who do most of the collecting in these parts may find it difficult to shoot them, which may account for the great rarity in collections.

72. *Graucalus papuensis sclateri* Salvad.

Cf. *Nov. Zool.* 1925, p. 132.

Not rare at Talasea, series sent from January to March, many moulting wings, tail, body.

73. *Artamus insignis* Sel.

This species, originally described from New Ireland (*Nov. Zool.* 1925, p. 136), was common at Talasea. A series was collected in January and February. All specimens showed moult on body, wing, or tail.

74. *Aplonis metallica nitida* (Gray).

Eichhorn observed this starling very common in Talasea. He found it nesting in large trees, the nests often touching each other. The nesting has been well described by Friedrich Dahl and Otto Meyer. A series sent from January to

March, many moulting. This subspecies extends from St. Matthias Island and from Rook Island over the islands of the Bismarck archipelago to Nissan and Feni, and to the Solomon Islands. (On Vulcan and Dampier Islands *A. metallica metallica*.) Eats fruit.

75. *Aplonis cantoroides cantoroides* (Gray).

Common at Talasea, fruit-eating, in the coastal districts only. Nests, according to Eichhorn, at the base of the coconut leaves, and in all sorts of holes in trees. Two eggs in the clutch. Half a dozen were shot in April, one on May 8. The May specimen moults some rectrices, the others don't moult. A widespread form, from Mysol to the Bismarck Archipelago and Louisiades; on Nissan represented by *A. c. longipennis* Neum. Possibly western birds average a little longer in the wing.

76. *Dicrurus bracteatus laemostictus* ScL.

Dicrurus laemostictus Sclater, *Proc. Zool. Soc. London*, 1877, p. 101 (New Britain); *Nov. Zool.* 1914, p. 218 (Rook I.).

Eichhorn sent a series from January which is very valuable to us, being from the original locality, New Britain. Comparing them with the Rook Island specimens it is obvious that the Rook birds are finer-looking, the glossy feathers of the crown of the head and on the chest being a shade more purplish (more greenish in the New Britain ones), the back and abdomen appearing deeper black in the Rook ones. These differences, however, do not seem to be due to locality, as they are not quite constant, and moreover the Rook examples are in finer plumage, having been shot in August, ours from New Britain in January.

77. *Mino dumontii giliau* Str.

Mino dumontii giliau Stresemann, *Journ. f. Orn.* 1922, p. 406 (Ralum, New Britain).

Stresemann separated this subspecies on account of its smaller white alar speculum and shorter tail from *M. d. krefftii* (terra typica "Solomons Is.") from the Solomons, New Hanover, and New Ireland. The white alar speculum is indeed generally much smaller in *giliau*, though very variable indeed. I cannot appreciate the supposed shorter tail, as I find specimens with tails 102 and 103 mm., while according to Stresemann they measure only 86-98 mm.

Eichhorn found *Mino* common at Talasea and collected a series in January and February; all have the body plumage in moult, many also the rectrices. Some have the base of the feathers of the hindneck white, others grey, some have the plumage much more purplish, others more greenish. Such variation is not geographical (it mislead Berlepsch into describing "*Mino dumonti violaceus*"), and does not seem to be sexual (cf. *Nov. Zool.*, 1925, p. 135).

78. *Corvus coronoides insularis* Heinr.

Common. Series from January to March. A young bird from March 7. Some February specimens moult body plumage. The sexes differ in size, males having a more powerful bill and longer wings. Wings ♂ 310-319, ♀ 283-290 mm.

SOME NEW ANTHRIBIDAE IN THE BRITISH MUSEUM.

BY DR. KARL JORDAN.

The types of the new forms here described are in the British Museum, with the exception of that of No. 7.

1. *Acorynus wallacei* spec. nov.

♂. Robustus, brunneo-niger, luteo-griseo-pubescent, supra nigro-maculatus, elytris fascia transversa nigra postmediana ad latus abbreviata, ad suturam antrosum producta. Rostrum longitudine vix latius, quinque-carinatum, carina media multo minus quam secunda elevata, tertia utriusque lateris tenuissima. Antennarum segmenta 6.-8. aequalia, 10. quadratum. Pronotum absque sulco transverso antemediano, dimidio basali sparsim punctato. Segmentum anale ventrale truncatum (♂), macula mediana parum elevata villosa notatum. Tibia antica apice bidentata, media mucronata.

Long. (cap. excl.) 13 mm., lat. 5.7 mm.

Hab. Borneo: Sarawak (Wallace), 1 ♂ ex coll. W. W. Saunders.

Rostrum depressed in centre, median carina low, but distinct, its apical fourth broadened and flattened, second carina much higher, extending to about two-thirds, outside it and starting from before the end of the second a short third carina which does not reach apex, the lateral carina distinct only above antennal groove, converging with the cariniform edge of the groove. Frons narrower than apex of antennal segment 2; occiput brown in centre, impunctate. Antenna rufous, segment 2 shorter than 3, this as long as 4, 5 to 8 nearly equal in length, 8 one-sixth shorter than 3, 9 nearly half as long again as 3, 11 one-third longer than 9, about twice as long as 3, 10 less than half the length of 8. Pronotum one-fifth broader than long, half as broad again at carina as at apex, pubescence not well preserved, there are evidently the following brown markings on each side: dorsally a large apical spot, behind it two spots which unite at the carina and form a large patch behind the carina, at the side an angle-shaped spot, one arm running beneath the lateral carina and the other above it; carina dorsally somewhat concave, straightening close to side and then gradually curving forward-downward, transverse carinula halfway to centre as near to dorsal carina as to basal edge. Elytra not quite twice as long as broad (30:17), pubescence smooth, lines of punctures very distinct, shoulder, three spots at lateral margin and one at apex, a rounded spot on subbasal swelling, produced forward, an oblong dorsal spot behind shoulder, some lines before middle, a spot in middle from third to sixth interspaces with a short linear spot laterally attached to it, a transverse postmedian band between interspaces 7 produced forward and less strongly backward at suture and enclosing a small luteous sutural spot, the band somewhat sinuate, over 3 mm. broad at suture and about 1.3 laterally. Pygidium slightly incised in middle of apical margin, which is strongly rounded each side from this point.

Anterior half of side of prosternum impunctate, posterior half and centre

with some punctures. Abdomen (σ) not distinctly flattened. Hypopygidium divided by a deep, broad, rounded sinus into two horns, which are fringed with long hair.

Near *A. biguttatus* Jord. (1895) and allies; the bidentate foretibia and the peculiar shape of the hypopygidium together with the markings will render its recognition easy.

2. *Acorynus callistus* sp. nov.

σ ♀. Niger, griseo-pubescent, capite cum rostro et pronoto atque elytrorum apice cum pygidio ochraceis. Pronotum irregulariter nigro-quadrivittatum. Elytra a basi ad fasciam transversam postmedianam diffuse griseo- et nigro-striata, ante fasciam in utroque elytro macula grisea. Antennarum segmentum 10. sexto fere aequilongum.

Long. (cap. excl.) 11.5–13 mm., lat. 4.5–5 mm.

Hab. Perak (W. Doherty), 1 σ , type. Also from Gunong Tahan, Pahang, 2,500–3,000 ft. (H. C. Robinson), 1 ♀.

Rostrum not quite one-third (σ) or one-fifth (σ) broader than long, median carina extending to apex, but apical third more (σ) or less (σ) flattened, second carina curved at both ends towards middle, reaching to the postmedian depression, outside second carina on apical third of rostrum a cariniform swelling, lateral carina thin, converging with cariniform edge of antennal groove, this edge not continued as a carina to apex of rostrum. Antenna rufescent, segment 2 as long as 3, this a little shorter than 9, 6 to 8 almost alike, 10 a little shorter (σ) or longer (σ) than 8. Pronotum somewhat flattened, with transverse groove, markings nearly as in *A. biguttatus* Jord. (1895); at each side of middle a black irregular stripe partly enclosing an ochraceous spot behind the end of the transverse groove, laterally an elongate apical black patch which sends out backwards two lines, one above the lateral carina, the other across the end of the carina, at base a lateral black dot. Elytra flattened above, basal half diffusely striped and spotted with grey and blackish brown, in middle from third to sixth interspace a square grey spot which is obliquely prolonged forward to suture; behind this spot a broad black transverse band which extends forward at suture; on ochraceous apical area a black dot and indications of others. Pygidium completely rounded at apex, as long as broad in σ , a very little broader in ♀. Prosternum (like the lateral area of the pronotum) with few shallow punctures; abdomen on each side with a double row of brown spots; in σ apex of foretibia rounded-dilated on inner side, midtibia without mucro, abdominal segments 1–4 slightly flattened, last segment similar to that of ♀, but broader, shorter, and more evenly rounded.

Near *A. biguttatus*, but in colour close to *A. picturatus* Jord. (1895), described as *Litocerus* on account of segment 10 of antenna, though shorter than 9, being almost as long as 3.

3. *Acorynus alboguttatus velatus* subsp. nov.

σ ♀. Pronotum cinnamon, at each side of middle a black stripe from near apical margin to below centre, in front of carina a round black spot halfway between middle and side, three spots behind carina greyish white, this colouring often extending a little beyond the carina. Greyish-white spots of elytra smaller

than in *A. a. alboguttatus*, especially the dorsal (median) one. Underside blackish, with well-defined greyish-white spots.

Sumatra: Merang (W. Doherty), ex coll. Fry, a series.

4. *Acorynus peosinus* sp. nov.

♀. *A. anchis* Jord. (1912) dicto similis, sed pronoto tribus vittis completis ornato.

Long. (cap. excl.) 7.6 mm.

Hab. Siam (Mouhot); 1 ♀ ex coll. Fry ex coll. W. W. Saunders.

Frons very broad even for a ♀, broader than the interspace between the median and the second carina, with dispersed deep punctures as on occiput, proboscis, and pronotum. Rostrum rather deeply impressed before apex, the carinae stopping short at this depression. Median stripe of pronotum narrow at apex, somewhat constricted before middle and at carina, lateral vitta broader, not sharply defined laterally, invaded by brown from the side, in between the two vittae a triangular spot; lateral carina oblique, less curved frontad than in *A. anchis*. Elytra almost spotted as in *A. salvazai* Jord. (1923), subbasal callosity less prominent than in that species, around it some luteous spots, other small spots dispersed in between the larger ones, these large spots are: one behind shoulder, a smaller one dorsally behind middle, continued obliquely forward to lateral margin by two spots, a transverse band of three spots at the beginning of the apical declivity.

Underside uniformly silky grey, the dark derm shining through, there being no spots. Tibiae with a rather ill-defined brown patch from near base to beyond middle, extreme apex of tibiae also brown; upperside of tarsal segment 1 grey except at base, 2 grey at apex.

5. *Acorynus xanthurus dips* subsp. nov.

♂. Ab *A. x. xanthuro* differt maculis nigris dorsalibus pronoti multo minoribus, elytrorumque macula grisea dorsali mediana rotunda et majore.

Hab. Perak (W. Doherty), 3 ♂♂ ex coll. Fry.

The four dorsal brown spots of the pronotum are small, narrow, and correspond to the four sections of the large central area of *A. x. xanthurus*, the second spot of each side is long, extending across carina to basal margin.

In ♂ the midtibia mucronate and the abdomen flattened along centre.

6. *Acorynus retusus* sp. nov.

♂♀. Rufo-brunneus, subtus griseus, supra griseo-maculatus, carina dorsali pronoti in medio fortiter angulata.

Long. (cap. excl.) 4.6-6 mm.

Hab. Borneo: no special loc., 1 ♂, type; Martapoera (W. Doherty), 1 ♀. Perak (Doherty), 2 ♀♀. All in Mus. Brit.

Proboscis grey, one-fourth broader at apex than long, depressed before apex, the dorsal earinae stopping short at this depression, all five carinae well developed. Frons in ♂ nearly as broad as segment 2 of antenna, in ♀ somewhat broader. Segment 3 of antenna equals 4 in length, 8 a little shorter than 7, in ♂ a little longer than 10 and in ♀ as long as 10, 9 slightly longer than 3 and a little shorter

than 11. Pronotum impunctate, sides grey, separated from grey underside by a brown patch placed before the lateral carina and continued beneath it to base as a thin line; on disc a subapical elliptical median spot, a median spot from transverse groove to base, widened at carina, and at each end of transverse groove a transverse dot, all grey, forming a cross; transverse groove deep; dorsal carina with sharp median angle pointing backwards, laterally the carina flexed back and then in a wide curve forward, subbasal transverse carinula almost parallel with dorsal carina, the interspace being but little wider laterally than halfway to middle, longitudinal lateral carinula indicated. Subbasal swelling of elytrum dark brown, encircled by grey markings, namely, a large basal spot, a line each in sutural and fifth stripe of punctures, and three short lines behind, another ring of spots submedian, composed of a line each in stripes 2 to 6, one or two lateral spots and posteriorly a transverse, rather conspicuous bar from stripe 2 to beyond 5, a third ring at apex composed of five spots, three in front and two at apical margin, obliquely in front of this ring a largish spot at outer margin.

Derm of underside and legs pale rufous, apex of femora and tibiae usually more or less brown; upperside of segments 1 and 2 of tarsi sparsely pubescent grey. In ♂ tibiae simple, proximal abdominal segments slightly flattened, last segment neither flattened nor impressed.

7. *Acorynus bothrinus* sp. nov.

♂♀. *A. gitono* Jord. (1911) similis; minor, pronoto fortius punctato utrimque ochraceo-maculata, elytrorum maculis lateralibus prima et secunda confluis.

Long. (cap. excl.) 6·7 mm.

Hab. Perak (W. Doherty), 1 ♂ in Mus. Tring, type; Sumatra: Merang (W. Doherty), 2 ♂♂, 2 ♀♀ ex coll. Fry in Mus. Brit.

Pronotum more coarsely punctate than in *A. gitonus*, segment 8 of antenna at most as long as 10; in ♂ the rather high tubercle an anal sternite of *A. gitonus* replaced in the new species by a low short ridge, and the apex of the foretibia somewhat dilated.

There are usually 6 pale ochraceous spots each side on the pronotum. The pale ochraceous spots in front of the apical declivity of the elytra have the same position as in *A. gitonus*, the lateral one being the largest and placed a little farther forward than the others.

8. *Acorynus bothrinus molitor* subsp. nov.

♂♀. The light-coloured pubescence white, above and below; lateral spots of pronotum more or less confluent; white ring of tibiae narrow.

Hab. Java, 1 ♂, 2 ♀♀ ex coll. Bowring.

9. *Acorynus lineolatus coalitus* subsp. nov.

♂♀. The slaty grey markings more extended than in the specimens from Perak and Sumatra; on the pronotum the short intermediate stripe more strongly curved and broadly connected with the median vitta at the carina; on the elytra the grey lines merged together, isolating most of the black patches from one another. Median carina of rostrum not interrupted, higher than in *A. l. lineolatus* from base to two-thirds. Pronotum less coarsely punctate than in *A. l. lineolatus* from Perak.

Hab. Engano (W. Doherty), 3 ♂♂, 2 ♀♀, ex coll. Fry.

10. *Acorynus lineolatus siamensis* subsp. nov.

♂. Pronotum as coarsely punctate as in *A. l. lineolatus*, from Perak, with the same markings. Pubescence of elytra fawn-colour, more extended than in *A. l. lineolatus*, joined together as in *A. l. coalitus*, the black markings being nearly all isolated from one another. Median carina of rostrum as in *A. l. lineolatus* thin and low from base to two-thirds.

Hab. Siam (Mouhot), 1 ♂ ex coll. Fry ex coll. W. W. Saunders.

11. *Acorynus dohertyi* sp. nov.

♀. Statura *A. bimaculati* Kirsch (1877), sed pronotum fortiter punctatum. Niger, griseo-pubescent, brunneo-suffusus; pronoto sulco arcuato antemediano instructo; elytris singulis macula magna postmediana parum obliqua nigro-velutina ornatis.

Hab. Burma: Manipur (W. Doherty), 1 ♀ ex coll. Fry.

Pubescence dense. Proboscis thick, dorsal surface convex in lateral aspect, apical margin somewhat incurved, the three dorsal carinae strongly developed, parallel, the median one extending to apex, with an indication of an interruption at apical fourth, the second carinae reaching as far as this point, dorso-lateral carina thin, distant from antennal groove, oblique, being divergent with the dorsal carinae. Frons rather narrower than the interspace between median and second carinae. Antenna rather short, segment 3 a little broader than 4 as well as 2, 8 short, triangular, 9 not quite as long as 2 and 3 together, 10 as long as broad.

Pronotum regularly conical from carina, half as broad again as long, coarsely punctate, diffusely variegated with greyish cinnamon, brownish black and whitish grey, a broad, diffuse, median vitta whitish grey like head and proboscis, each side of disc blackish, with indefinite dots and spots, a subapical lateral greyish cinnamon spot larger and better defined, below it a subapical blackish spot, behind carina on each side of median vitta a broad blackish area; dorsal carina slightly angulate in centre, then slightly and gradually flexed forward, the lateral portion evenly curved, short, oblique. Elytra depressed along suture, subbasal swelling rather prominent, interspaces slightly uneven, with indications of grey and brown dots, shoulder-angle blackish, behind shoulder a diffuse grey spot, the velvety patch extending from second to eighth row of punctures diffusely bounded with grey. Pygidium grey, evenly rounded, nearly one-third broader than long. Segments 2 to 4 of abdomen each with two small linear brown spots on each side, prosternum and sides of metasternum with dispersed large deep punctures; apex of tibiae, segments 2 to 4 of tarsi and extreme base of 1 brownish black.

12. *Acorynus validus* sp. nov.

♂♀. *A. biguttato* Jord. (1895) similis; rostro longiore, carina mediana ad apicem continuata; elytris absque macula rotunda postmediana; fascia transversa nigra elytrorum angustiore, ad suturam et ad latus antrorsum producta.

Long. (cap. excl.) 12 mm.

Hab. Sumatra: Merang (W. Doherty), one pair ex coll. Fry.

Rostrum one-sixth broader than long, median carina continued to apex,

but apically flattened. Frons distinctly broader than in *A. biguttatus*, without brown spot, occiput likewise without. Transverse groove of pronotum less sharply marked than in *A. biguttatus*, subapical black dorsal spots narrower and much farther apart, as are also the posterior black spots. Black transverse band of elytra anteriorly sinuate between second and sixth lines of punctures, this sinus corresponding to the white spot of *A. biguttatus*, before the sinus a black dot and black square patch, shoulder, a rounded patch on subbasal swelling and several lines and spots in basal half and at apex black. Foretibia of ♂ distinctly rounded-dilated at apex on inner side, midtibia simple, abdomen very slightly flattened.

13. *Acorynus latens* sp. nov.

♂♀. *A. gitoni* vicinus; minor, fortius punctatus, rostro inter carinas minus depresso, segmento anali ventrali ♂ris leviter carinato, ♀nae tuberculo acuto parvo apicali mediano subcariniformi, hypopygidio (♂) emarginato, angulis productis.

Long. (cap. excl.) 5-6 mm.

Hab. Perak (W. Doherty), 1 ♂, 2 ♀♀ ex coll. Fry.

The lateral spots of the pronotum more or less confluent; lateral spot behind shoulder of elytra large, second lateral spot smaller, standing separate, in fourth interspace a conspicuous dot just behind middle, extending on to interspaces 3 and 5. Angles of hypopygidium (♂) produced, this projection narrow and short, its pointed apex curved downwards. The apical tubercle of the anal sternite of the ♀ extends on to the surface of the segment as a low carina. In the ♂ the frons is broader than in the ♀; it is nearly as broad as the interspace between the median and second carinae of the proboscis, being much wider than in the ♂♂ of the allied species, with the exception of *A. punctatus* Jord. (1894), in which the abdomen is flattened along middle and the hypopygidium truncate-emarginate with the angles broadly rounded.

14. *Litocerus glebula* sp. nov.

♂♀. *L. toroso* Pasc. (1860) similis, rostro subtilius rugato-punctato, pronoto et elytrorum dimidio apicali maculis minoribus, macula mediana ante carinam sita simplice, parva, pygidio longiore.

Hab. Siam (Mouhot), 2 ♂♂, 1 ♀.

In size and shape like *L. torosus*. The carinae of the rostrum less elevate, the median one quite thin and low except at base, and not extended to apex. The pronotum of *L. torosus* bears in front of the carina and joined to the round median basal spot a tripartite mark consisting of a median spot to which is joined on each side an oblique spot, these oblique spots absent in *L. glebula*, and the median one reduced, as are the other spots of the pronotum. The yellowish basal area of the elytra better defined than in *L. torosus*, enclosing a more or less rounded brown spot on the subbasal swelling, posteriorly in punctate stripe 2 the area is produced into a narrow tooth; on posterior half of elytra a conspicuous dot; some small variable spots at margin, apex, and suture. Pygidium in ♀ as long as broad, in ♂ a little longer. Abdomen of ♂ very slightly flattened, first segment apically with indication of a median carina, tibiae without mucro or tooth. The ♂-antenna thickened, flattened from segment 5, the seg-

ments not claviform, 3 to 5 gradually decreasing in length, 6 to 8 a very little longer than 5, 9 and 10 each slightly longer than 3, 11 one-half longer than 10.

15. *Litocerus alternus* sp. nov.

♂♀. Rufo-brunneus, griseo-pubesceus, pronoto vitta lata mediana nigra, carina lateribus rectangulata, clytris griseo- et brunneo-lineatis.

Long. (cap. excl.) 5 mm.

Hab. Perak (Doherty), 1 ♂, 3 ♀♀ ex coll. Fry, and Singapore, 1 ♀.

The long brown lines in the interspaces of the elytra recall *L. miles*,* but the brown sutural patch is absent and the lateral angle of the pronotal carina is rounded only at its apex, the lateral carina being straight, the angle being a little over 90°. The black-brown median stripe of the pronotum about as broad as the grey lateral area or somewhat narrower, more or less sinuous, well-defined and sharply contrasting; in grey lateral area two blackish dots, one postmedian, at about equal distances from the dorsal and lateral carinae, the other subapical and farther down the side; transverse discal groove not very sharply impressed. Scutellum brown. The extent of grey variable on the elytra, the brown lines here and there interrupted, no conspicuous brown spots. Pygidium grey, with broad brown diffuse stripe; as long as broad in ♀, slightly longer in ♂. Legs pale rufous like the shaft of the antennae, without definite grey rings, a brownish diffuse spot on widened portion of femora. In ♂ first abdominal segment with tubercle, last somewhat flattened; tibiae simple; shaft of antenna not flattened and widened, the segments of normal shape, 3 to 8 almost alike in size, 9 and 10 somewhat shorter.

16. *Litocerus fraternus* sp. nov.

♂♀. *L. humerali* Jord. (1894) similis; pronotum absque macula admedianam ante carinam, tarsorum segmentum primum basi haud densiter griseo-pubesceus, segmentum primum ventrale (♂) tuberculo instructum.

Hab. Borneo: Sarawak (Wallace), 3 ♂♂, 2 ♀♀ in Mus. Brit.; Kina Balu, 1 ♀ in Mus. Tring; type ♂.

In *L. humeralis* there is at each side of the basal median spot of the pronotum an oblique spot in front of the carina, this spot is missing in *fraternus*; the three grey spots at and before the transverse suleus widely separated from one another in *fraternus*, the posterior brown spot in the grey lateral area joined to the brown discal area.

In *L. humeralis* the first tarsal segment densely pubescent grey from base to about two-thirds, apex black; in *L. fraternus* the first and second segments sparsely grey, the base of the first rather less distinctly grey than the apex. First abdominal segment of *humeralis*-♂ without tubercle, in ♂ of *fraternus* a very distinct tubercle.

17. *Sympaector decorus* sp. nov.

♀. Pallide rufus, pronoto duabus vittis latis clytrisque serie sublaterali macularum conjunctarum brunneo-nigris, antennarum segmento 8^o septimo aequali.

Long. (cap. excl.) 7.7 mm.

Hab. Celebes: Menado (Wallace), 1 ♀ ex coll. Fry ex coll. W. W. Saunders.

*Cf. p. 163.

Similar in colour to *S. nigromaculatus* Jord. (1894), but paler, strongly flattened above, eye much more rounded, cheek (lateral aspect) much wider, pronotum shorter, the lateral carina less convex. Segment 8 of antenna very little shorter than 7, in *S. nigromaculatus* 7 nearly one-half longer than 8. Median carina on underside of rostrum very thin and low. Black vittae of pronotum of even breadth, converging, the yellowish median stripe posteriorly broader than the black vitta, but anteriorly less than half as broad. The seven dorsal and lateral spots of the elytra connected with one another, forming a longitudinal zigzag band beginning on the subbasal swelling and ending at a short distance from the apical margin, spots 3, 5, and 7 being marginal or nearly, behind subbasal swelling a small, inconspicuous spot near suture, sutural interspace brownish on apical declivity. Pygidium somewhat shorter than in *S. nigromaculatus*, with a very broad black-brown median stripe, which slightly narrows basally. On underside the gula and the centre of the anterior margin of the prosternum, a spot above forecoxa, another below carina, a lateral spot on metasternum, basal margin of first abdominal segment behind coxa, a basal spot in middle and another spot halfway to side-margin of segments 2 to 5 blackish brown or brown.

18. *Sympaector ludius* sp. nov.

♀. Pallide rufus, *S. nigromaculato* structura simillimus, brevior, elytris aliter nigro maculatis, absque macula rotunda suturali antemediana, macula antemediana magna a limbo ad striam tertiam extensa, pone hanc maculam gutta alba.

Long. (cap. excl.) 6.3 mm.

Hab. Singapore (Wallace), 1 ♀ ex coll. Fry ex coll. W. W. Saunders.

Black patch on pronotum each side of the diffuse greyish median stripe broadest behind carina, constricted before carina, extended a little beyond the transverse sulcus, the portion from the carina forward almost elliptical. Suture of elytra brownish, spot on subbasal swelling small and pale, a spot immediately behind shoulder a parallelogram (this spot absent from *S. nigromaculatus*), a little farther back a large spot extending from lateral margin obliquely dorsad to third stripe, curved, evidently the result of the fusion of two spots, in the bay behind this spot a whitish dot followed by a small longitudinal brown spot, halfway to apex a trapeziform spot from margin to third interspace, dorsally inclining basad. Prosternum with a blackish brown dot below apex of lateral carina.

19. *Mecocerina dux* spec. nov.

♂♀. Rufa, nigro-maculata, *M. rhanis* Jord. (1911) simillima, multo major, rostro longiore et magis porrecto, carinis dorsalibus magis elevatis, interspatio mediano angustiore et magis impresso, vittis brunneis pronoti rectis parallelis distantibus completis, elytrorum maculis brunneo-nigris minoribus, fascia anteapicali postice in utroque elythro concava, pedibus pallide rufis pube flavescente tectis.

Long. (cap. excl.) 9.5-10 mm.

Hab. Borneo: Sarawak (Wallace), one pair ex coll. Fry ex coll. W. W. Saunders.

The median, depressed, interspace between the high, curved, carinae of the proboscis is about as broad as the interspace between this carina and the sulcus accompanying the dorso-lateral carina, whereas in *M. rhanis* the median interspace is less impressed and nearly twice as wide as the dorso-lateral interspace between the carinae. The angle formed by the rostrum and gula is much more obtuse than in *M. rhanis*, the intercoxal process of the mesosternum more convex in centre of apex. Tibiae and first tarsal segment pale silky yellow. Apex of elytra slightly yellowish.

NEW EASTERN ANTHRIBIDAE IN THE TRING MUSEUM.

BY DR. KARL JORDAN.

1. *Acorynus mundellus* sp. nov.

♂. Statura *A. leptis* Jord. (1903). Rufo-brunneus, supra pallide ochraceo-notatus, pronoto utrinque vittato, elytris dispersim guttatis.

Rostrum longitudine latius, post medium fortiter impressum, quinque-carinatum, carinis abbreviatis. Antennarum segmentum 3^{ium} quarto triente longius, 9^{um} tertio et quarto simul sumptis paululo longius. Pronotum fortiter punctatum. Pygidium semicirculare. Tibia antica apice incrassata, media apice mucronata.

Long. (cap. excl.) 7 mm.

Hab. Sarawak: Lundu, October, 1 ♂.

In colouring not unlike *A. sporadis* Jord. (1903), but much smaller and different in structure. Rostrum coarsely punctate, one-third broader at apex than long, deeply and broadly depressed beyond middle, the carinae prominent, the second stopping short at the depression, the middle one continued into the depression, but here very low, not extending on to the convex apical margin. Frons about as wide as the second segment of antenna. Occiput punctate. Pronotum one-third broader than long, puncturation coarse, before centre a depression, but no transverse groove, carina very evenly curved downward at side; a twice interrupted median stripe much narrower than the lateral vitta, which is about as broad in middle as the antennal segment 5 is long, being broader and straighter than in *A. sporadis*. Elytra nearly spotted as in *A. sporadis*: the largest spot at shoulder-angle, a largish spot at margin before middle with a smaller spot obliquely above and behind it, another largish marginal spot behind middle and a third, somewhat smaller, at outer apical angle, before apical declivity a dot each on interspaces 3 and 5, behind middle a dot in 4, and between middle and base a number of small dots, a short line before sutural apical angle. Pygidium semicircular, grey at the sides.

Underside grey, not spotted, abdomen (♂) very slightly flattened proximally. Tibiae rufous, apex of mid- and hindtibiae brownish like tarsi, basal two-thirds of first tarsal segment rufous; upperside of tibiae diffusely grey beyond middle. Hypopygidium very narrow, truncate, the angles projecting laterad and each bearing above a pencil of hairs, medianly the segment divided by a deep broad channel.

2. *Acorynus triplaris* sp. nov.

♂♀. *A. sporadi* Jord. (1903) similis, pronoto tribus vittis completis ochraceis ornato.

Hab. Borneo: Doesonlanden (Wahnes), 1 ♂ (type) in Mus. Tring; Pengaron (W. Doherty), 1 ♂, 2 ♀♀ ex coll. Fry in Mus. Brit.

Markings of upperside ochraceous; median vitta of pronotum narrowing frontad, without indication of constriction; dots of elytra in the same position

as in *A. sporadis*, but slightly larger. Median carina of rostrum somewhat higher from base to the sharply marked postmedian interruption, without distinct short spur each side proximally of middle. Dorsal carina of pronotum slightly less concave in middle than in *A. sporadis*.

3. *Acorynus saxidius* sp. nov.

♀. *A. biguttati* Jord. (1895) vicinus, sed elytris absque macula rotunda post mediana alba.

Hab. Borneo: Kina Balu, 2,700 to 3,000 ft., iii. 1913, 1 ♀, type. Another ♀ from the Kina Balu (Whitehead) ex coll. Fry in Mus. Brit.

Frons without brown spot, and occiput with a small narrow median one. Markings of pronotum more diffuse and olivaceous than in *A. biguttatus*, as are also those in basal half and at apex of elytra; black postmedian band of elytra sinuous on both sides, produced forward at suture and very narrowly so in sixth line of punctures, posteriorly with a small sinus each on interspaces 2, 3, 5, 7; pygidium uniformly grey; tibiae with a grey subbasal and subapical ring.

4. *Acorynus bicornis* sp. nov.

♂♀. *A. bothrinus molitor* Jord. (1926) simillimus, maculis pronoti parvis valde separatis, elytris macula laterali posthumerali, gutta dorsali rotundata postmediana sat conspicua, caeteris maculis parvis. Pygidium breve; segmentum ventrale anale ♂ris tuberculo cariniformi acuto, ♀nae margine apicale sinu rotundo parvo sed profundo mediano.

Hab. Malay Pen.: type (♂) without more precise locality in Mus. Tring; also from Perak (W. Doherty), 2 ♂♂, 1 ♀ ex coll. Fry in Mus. Brit.

Proboscis and head as in *A. bothrinus*; segment 8 of antenna in ♂ distinctly longer than 10. Spots of pronotum small; the subbasal lateral spot on elytra as in *A. bothrinus*, but the second lateral patch replaced by small spots, and the spots before apical declivity also small. Pygidium in ♂ nearly one-half broader than long, in ♀ twice as broad as long. Abdomen of ♂ with indication of median carina on 2 to 4, 1 with a swelling each side ventrally, carina of 5 gradually elevate, ending abruptly, behind it a pencil of hair; in ♀ the apical margin excised, the sinus almost circular, i.e. the angles projecting a little over the sinus. Hypopygidium of ♂ with a broad, almost semicircular excision, the apical area being reduced to two narrow horns, which are curved towards each other.

5. *Acorynus apatenioides aemulus* subsp. nov.

♂♀. The black spots at each side of middle of pronotum merged together to a large patch which bears a small luteous spot. Subbasal lateral spot of elytra almost square, reaching up to seventh interspace.

Hab. Sumatra: Si-Rambé (Modigliani), one pair.

6. *Acorynus similis bacillosus* subsp. nov.

♂♀. Pronotum longer, with three grey vittae, the lateral one slightly curved, convex above, bounded below by a broad brown vitta which reaches subdorsally from apical margin to carina and ventrally to base. Elytra with numerous

whitish grey short lines which are nearly all separate from one another. Grey antemedian spot on upperside of tibiae small. Apex of tarsal segment 1 grey above like upperside of 2. In ♂ pygidium broader, incision of internal supra-anal tergite (hypopygidium) somewhat deeper.

Hab. Perak ; a series.

7. *Acorynus ypsilon* sp. nov.

♂♀. *A. cludo* Jord. (1895) affinis. Brunneo-niger, pronoto fortiter punctato, trivittato, elytris sparsim ochraceo-maculatis, linea suturali a medio ad apicem extensa antice divisa.

Long. (cap. excl.) 5.3–5.7 mm.

Hab. Sarawak : Kuching (J. Hewitt) and Matang Road, 2 ♂♂, 1 ♀.

Proboscis as long as apically broad, broadly but not very deeply impressed beyond middle, the depression extending farther apicad laterally than medianly, the apical median area convex, rounded, median carina very thin and low, second carina much higher, stopping short at the depression, lateral carina the longest, well marked, almost continuous with the apical lateral carina. Frons in ♂ as narrow as the fifth segment of the antenna is broad, in ♀ not quite so broad as the second segment. Occiput coarsely punctate. Segment 3 of antenna in ♂ as long as 4, in ♀ longer than 4, 8 in both sexes shorter than 10, 9 in ♀ as long as 3 and 4 together, in ♂ shorter.

Pronotum coarsely punctate ; carina dorsally straight, gradually curved obliquely downwards at sides, lateral portion quite short, not reaching meral suture ; three sharply defined ochraceous vittae, the middle one slightly broadening behind, but not forming a round antescutellar spot as is usual in this genus ; lateral vitta broad from base to before middle, enclosing a brown spot which is anteriorly connected with the brown lateral area. Pubescence of elytra thin, the minute granulation of the derm being very distinct ; around subbasal swelling some linear spots, a largish spot behind shoulder, not extending to margin, a smaller lateral one at two-thirds, a long line in sutural stripe of punctures from about middle to near apex anteriorly connected (or nearly so) with a short spot directed obliquely forward to third stripe of punctures, at the side of this spot, almost as a continuation of it, a small spot in fifth interspace ; besides these markings a few minute ochraceous dots and lines. Pygidium brown, in ♂ rounded-triangular, one-fifth broader than long, in ♀ twice as broad as long, evenly rounded.

Underside with a short silky pubescence ; sides of pro- and metasterna and middle of prosternum with large punctures. In ♂ the apex of foretibia, on inside, somewhat impressed longitudinally, the apical angles of the depression forming each a very short projection ; midtibia mucronate ; abdomen proximally flattened, apical sternite simple ; hypopygidium narrowed at apex, the apex truncate-emarginate, whereas in *A. cludus* the centre of the apical margin is somewhat produced.

8. *Acorynus lineolatus musivus* subsp. nov.

♂♀. Median carina of rostrum higher than in *A. l. lineolatus*, from Perak, continuous to apex, the apical third broader and higher than the basal two-

thirds. Pronotum less strongly punctate. Markings essentially as in *A. l. lineolatus*, consisting on the elytra of more or less isolated short lines.

Hab. Sumatra: Si-Rambe (Modigliani), a series.

9. *Acorynus cingalus* sp. nov.

♂. *A. ceylonico* Jord. (1894) affinis. Robustus, brunneo-niger, luteo pubescens; rostro tricarinato; antennarum segmento 8° decimo dimidio longiore, 10° subquadrata; pronoto sulco transverso instructo, lateribus sparsim punctatis, nigro-maculato; elytris sat longis pone basim gibbosis nigro-marmoratis, fascia transversa mediana nigra; pygidio nigro luteo-circumcincto.

Long. (cap. excl.) 8 mm., lat. 3.5 mm.

Hab. Ceylon: Kandy, vi.08 (G. E. Bryant), 1 ♂.

Rostrum one-third broader than long, with three broad carinae, apical fourth of the middle one flattened out into a but slightly elevate triangular area, the second carina, situated in a blackish stripe, extends to apex, but is more or less broken up by large punctures, especially in apical half, no carina between the second and the cariniform margin of the antennal groove, this margin continued as a carina to apex, apical margin of rostrum medianly somewhat depressed, appearing incurved. Frons half the width of the interspace between the central and second carinae. Segment 3 of antenna very little longer than 4, 8 a little longer and slightly broader than 7, 9 a little shorter than 3 and 4 together, and 11 a little longer.

Pronotum barely one-third broader than long, impunctate except for some scattered punctures in the lateral area, a median stripe slightly paler than the rest of the surface, at each side of this vitta a large patch from apex to transverse groove, almost square, behind the groove and in a line with the dorsal margin of the square patch an irregularly elongate-ovate spot, and from basal margin across carina a triangular patch in a line with the outer margin of the apical patch, all three black, laterally a row of three smaller black spots, one behind apex, the second elongate, at some distance from carina, and the third rounded and basal; carina straight dorsally, evenly flexed forward at side; transverse carinula strongly elevate, halfway to side much nearer to base than to dorsal carina. Elytra almost twice as long as broad, depressed at suture, particularly in basal half, the subbasal swelling being high, interspaces somewhat convex, bearing blackish lines of variable length, many diffuse, subbasal swelling posteriorly with a black half-circle, in middle a broadish black band from side to side, sinuous in front and behind, inclining backwards at side, widened frontad on third and fourth interspaces and backward at suture, on apical declivity of each elytrum a sinuous patch, shoulder-angle black, behind it a uniformly luteous patch. Pygidium one-tenth broader than long, evenly rounded, apical margin swollen in centre.

Prosternum and sides of metasternum with scattered large punctures; mesosternal process truncate, the angles rounded and somewhat elevate, metepisternum with two blackish dots; abdomen flattened along centre, last segment with large sublateral blackish patch; femora with a median patch and the apex, tibiae almost entirely or (hindtibia) at base and apex, and the entire tarsi blackish, slightly rufous; apex of foretibia not distinctly widened, midtibia mucronate.

10. *Acorynus mentawensis niasicus* subsp. nov.

♀. Markings of pronotum and elytra smaller than in *A. m. mentawensis*. Differs from *A. punctatus* Jord. (1894), especially in the pronotum being much less strongly punctate.

Hab. Nias : Hili Madjedje (Mitschke), 1 ♀.

11. *Acorynus subdolos* sp. nov.

♂. Niger, supra albo-maculatus ; rostro fortiter rugato-punctato, carinis abbreviatis ; antennarum segmento 3^o quarto longiore ; pronoto fortiter punctato, vitta dorso-laterali alba ornato ; tibia antica apice dilatata, media mucronata ; hypopygidio ante apicem constricto, parte apicali angustiore, apice emarginato, angulis productis bifurcatis.

Long. (cap. excl.) 7 mm.

Hab. Borneo : Pengaron, 1 ♂.

In colour and markings similar to *A. sporadis* ; pubescence greyish white ; puncturation coarse ; on pronotum a narrow median line at apex and at base, dorso-lateral vitta complete, straight, above lateral carina a diffuse spot ; the basal spot below shoulder-angle dilated upwards behind shoulder to seventh interspace, about 16 small spots on each elytrum, of which two at commencement of apical declivity, rounded, one in third interspace, the other in seventh ; under-side almost uniformly greyish white.

Proboscis shorter than in *A. sporadis*, median carina rather broad and high, from two-thirds widening out, forming a triangular, somewhat convex, coarsely punctate apical area, second carina also broad, irregular on account of the coarse puncturation, curved inward at base and less so beyond middle of rostrum, here joining an irregular rugate-punctate elevation which runs obliquely outward-apicad ; lateral dorsal carina higher than in *A. sporadis*. Frons as broad as first segment of antenna ; median carina extending on to the punctate occiput. Antennal segment 3 nearly half as long again as 4, 4 to 7 equal in lengths, 8 very slightly shorter, 10 as long as 8, 9 shorter than 11, and as long as 3 plus 4. Pronotum coarsely punctate, disc depressed before middle, but without transverse sulcus. Pygidium grey, except along middle, as long as broad. Pro- and mesosternum punctate inclusive of intercoxal process ; abdomen not flattened, last sternite simple ; hypopygidium very different from that of the allied species constricted near apex, the angle proximal of the constriction rounded, the portion divided off by the constriction narrower than the proximal portion, emarginate at apex, its dorsal surface broadly concave, the apical angles divided into a narrow dorsal process and a triangular ventral projection.

12. *Acorynus sinuatus* sp. nov.

♂♀. *A. trivittato* Jord. (1897) similis ; vitta mediana pronoti angustiore interrupta.

Long. (cap. excl.) 4.8–5.4 mm.

Hab. Sumatra : Medan (J. B. Corporaal), a pair.

On each side of the pronotum, at the end of the transverse groove, a luteous or grey spot joined to the lateral area, in this area a round brown spot a short

distance from the dorsal and lateral carinae ; the median stripe is very narrow from the transverse sulcus forward and does not reach apical margin, triangular behind sulcus, and constricted or interrupted halfway to carina. Luteous or grey markings of elytra smaller than in *A. trivittatus*. Hypopygidium of ♂ incurved at the sides, apical margin straight, the angles rounded, projecting sideways and a very little distad ; in *A. trivittatus* the sides are not incurved, the apex is emarginate and the angles broadly rounded. Possibly the Sumatran equivalent of *A. trivittatus*.

13. *Acorynus scitinus* sp. nov.

♂. *A. ligati* Jord. (1903) vicinus ; rostro fortius impresso, fronte multo angustiore, elytrorum fascia obliqua grisea lateribus haud apicem versus continuata. Long. (cap. excl.) 4.6 mm.

Hab. Sumatra, 1 ♂.

Segment 9 of antenna longer than 3 plus 4, pronotum with transverse sulcus. Postmedian impression of rostrum rather deep, extending obliquely apicad, almost forming a semicircle around the median convex portion of the apex, carinae abbreviated, median one somewhat dilated at depression, second converging with median carina distally. Frons barely as broad as second segment of antenna. Sides of pronotum marked with grey, invaded by brown, not with a sharply defined broad stripe of uniform width as in *A. ligatus*. Antemedian lateral spot of elytra small ; oblique band narrow, transverse from stripe 7 to margin, not continued sublaterally by a streak or spots, at the beginning of the apical declivity several grey linear spots and at apex other grey spots. Pygidium as long as broad. Hypopygidium narrower than in *A. ligatus*, sides somewhat incurved, apex emarginate.

14. *Acorynus neuricus* sp. nov.

♂♀. *A. brevis* Jord. (1911) vicinus, antennarum segmento quarto tertio aequilongo, pronoti maculis griseis lateralibus confluis, elytrorum dimidio basali griseo-striato.

Long. (cap. excl.) 4.5-5 mm.

Hab. East Sumatra : Deli, 1 ♂, type ; Medan (J. B. Corporaal), 3 ♀♀.

As in *A. brevis* Jord. (1911), *A. luzonicus* Jord. (1895) and a few others, the cariniform edge of the antennal groove is directed towards the side of the prosternum and not curved down to the underside of the rostrum. Segment 9 of antenna as long as 11. On pronotum a grey lateral patch from base across carina divided into two, forming an anteriorly open half-ring, in front of it a subapical patch, sometimes the whole lateral area luteous, bearing two brown spots. On elytra the basal half with grey lines in the stripes of punctures, the shoulder angle and the subbasal swelling remaining brown, a large lateral spot behind shoulder, a largish square postmedian spot between third and sixth rows of punctures, the anterior dorsal angle of this spot almost contiguous with the grey line in stripe 2, and the posterior lateral angle continuous with a grey line in stripe 6, a brown area before and behind the postmedian spot and at the sides of it ; before apical declivity a transverse band of grey lines, of which those in stripes 3 and 4 are short, whereas the lateral ones are merged together to form a patch, apical area

grey from apical margin about halfway up the declivity. Pygidium in ♂ one-fourth, in ♀ nearly one-half broader than long. Tarsi grey above, the pubescence not dense, segment 1 not contrasting in colour with 2 to 4. In ♂ midtibia with an apical projection on inside, abdomen flattened, hypopygidium broad, evenly rounded.

15. *Acorynus luzonicus nigrinus* subsp. nov.

♀. Niger, sparsissime griseo-pubescent, elytris griseo-guttulatis, absque maculis majoribus.

Long. (cap. excl.) 8.3 mm.

Hab. S. Celebes: Tjamba (W. Doherty), 1 ♀.

Sides of pronotum distinctly punctulate. The only conspicuous marking is the luteous elongate-triangular spot in front of the scutellum and the grey first tarsal segment. The discal spots of the pronotum smaller than in *A. l. luzonicus*, the lateral ones more or less separate and much obscured. Elytra with numerous grey dots; in oblique aspect some black markings appear which correspond to the non-dotted dark-brown patches of *A. l. luzonicus*. Grey pubescence of underside sparse, somewhat condensed on metepimerum; grey antemedian ring of tibiae inconspicuous; base of first tarsal segment more extended black than in *A. l. luzonicus*.

16. *Acorynus luteago* sp. nov.

♂♀. *A. luzonico* Jord. (1895) structure similis; rostro fortius carinato, pronoto lateribus evidenter punctato, maculis luteis multo magis extensis.

Hab. S. Celebes: Tjamba (W. Doherty), 3 ♂♂; without locality 1 ♀.

The markings of pronotum as in *A. luzonicus*, but larger; elytra pubescent-luteous, with the following brown markings: a round spot on subbasal callosity, a double spot on shoulder, a transverse, narrow, zigzag band from suture to margin, dividing at eighth stripe, the two branches enclosing a luteous marginal spot, a transverse median band from suture to interspace 6, almost intercepted in row 2, from its lateral posterior angle an oblique zigzag band to margin, before apical declivity a zigzag band from suture to margin, the dorsal portion broader, but the lateral portion widened backwards at margin, on apical declivity a transverse row of three spots, separated or more or less connected, the one nearest suture the largest, between it and postmedian band a sutural streak, at apical angle of suture a smaller spot; all these markings variable in size. Pygidium luteous grey, diffusely brown along middle and basally at sides. Metasternite with three brown lateral patches. Segments 1 and 2 of tarsi grey above.

17. *Acorynus vergens* sp. nov.

♀. Structura *A. luzonici*; rostri carina secunda medium versus inclinans; pronotum utrinque vitta obliqua luteo-grisea trans occiput prolongata notatum.

Hab. Luzon: Prov. Zambales, 1 ♀.

The second dorsal carinae straight, basally nearly twice as far apart as distally. The dorso-lateral stripe of the pronotum also straight, strongly oblique, well-defined, of even width except in front of carina, where it is dilated laterad, median stripe vestigial. Elytra dotted with luteous grey, the dots partly merged

together, forming short lines as in *A. luzonicus luzonicus*, in middle a grey dorsal spot, another farther back close to lateral margin, and a third, less distinct, behind shoulder, almost as in *luzonicus*. Underside as in *A. luzonicus*; grey pubescence of tibiae much more restricted, first segment of tarsi less densely pubescent grey, second also with some grey pubescence and therefore not so much contrasting with first as in *A. luzonicus*.

Recalls *A. discoïdalis* Jord. (1894), but segment 9 of antenna much shorter than 3 and 4 together and the cariniform edge of the antennal groove directed backwards as in *A. luzonicus*.

18. *Acorynus anacis* sp. nov.

♂. *A. passerino* Pasc. (1860) et *A. labido* Jord. (1924) subsimilis, pronoto fortiter punctato facile distinguendus.

Long. (cap. excl.) 4.8 mm.

Hab. Assam: Khasia Hills, 1 ♂.

Rufous brown, base of antenna, basal half of femora and the derm under the grey markings rufous. Rostrum nearly as broad at base as at apex, being but little dilated at apex, lateral carina straight, joining the cariniform edge of the antennal groove, forming a projecting angle above the groove and then continuing straight to apex; median carina reaching to postmedian depression, very thin at base. Eyes less rounded than in *A. labidus*, not quite so close together, the triangular area from occiput forward broader and somewhat depressed. Antenna as in *A. passerinus*, a little longer than in *A. labidus*, segment 8 distinctly longer than 9, this a little longer than apically broad, 9 to 11 together not quite so long as 3 plus 4. Pronotum broader than in *A. passerinus*, coarsely punctate except the area from depression of disc to apical margin; anterior half of prosternum similarly punctate; grey lateral markings of pronotum smaller than in *A. passerinus*, the median stripe broader behind carina and in front of and behind the discal depression. Elytra more square than in *A. passerinus*, striped with grey and brown, the angle-shaped brown subbasal mark of *A. passerinus* replaced by a brown patch, apical half of elytra more extended grey. Pygidium shorter than in ♂ of *A. passerinus*, more rounded, not curved up at apex; hypopygidium broad, rounded, middle of apex produced as a short obtuse lobe. Abdomen flattened from segment 1 to 4, 5 much shorter than in *A. passerinus*, convex in middle and here the pubescence silky as in *A. passerinus*. Apical two-fifths of foretibia somewhat incrassate on inner side, without tooth, midtibia without mucro.

19. *Acorynus cordiger zonatus* subsp. nov.

♀. Fascia elytrorum postmediana brunneo-nigra multo angustior, antice bene definita, postice ad suturam sinuata.

Hab. Perak (W. Doherty), 2 ♀♀, a third in Mus. Brit.

The black-brown spots of the pronotum and elytra deeper in colour than in Java specimens. The anterior boundary of the transverse band of the elytra is diffuse in *A. c. cordiger* and sharply defined in *A. c. zonatus*.

The median carina of the proboscis is broadly interrupted in all three specimens.

20. *Acorynus stramineus* sp. nov.

♀. Speciei *A. caffer* Jord. (1911) dicto simillimus, griseo-ochraceo-variegatus, carina dorsali pronoti medio haud angulata.

Hab. Tanganyika Territory: Magila (Legros), 1 ♀, type; also Nyasa, 1 ♀ ex coll. Fry in Mus. Brit.

Median carina of proboscis abbreviated as in *A. caffer*. Markings as in that species, but more ochraceous.

Note.—*Acorynus silvanus* Jord., Nov. Zool. xxxiii, p. 290, No. 2 (1925), is the ♀ of *Cedus valens* Jord., l.c. p. 239, No. 3 (1925); the species is best placed in *Cedus*.

21. *Litocerus miles* sp. nov.

♂♀. *L. histrionis* vicinus; rostro brevior, antennis maris multo tenuioribus, elytris griseis brunneo-lineatis macula mediana suturali sat magna suberuciformi notatis.

Hab. Perak (rec. from Standinger, probably collected by Waterstradt), type, and Perak (W. Doherty), also from Sumatra and Borneo; a series.

Frons a little broader than in *L. histrio* Gylh. (1833). The pronotum bears anteriorly four brown spots, the upper ones larger, apical, the lateral ones subapical, before the carina six spots, the two lateral ones connected with the anterior spots, whereas the two upper ones are isolated, behind the carina four brown spots, pubescence in between the brown marking luteous grey. Elytra luteous grey, the interspaces for the greater part brown, forming long lines, but the grey pubescence partially confluent, particularly dorsally in basal half, in middle of suture a brown elliptical patch usually extending sideways to fourth, fifth, or sixth row of punctures, widened anteriorly and posteriorly at the suture, somewhat resembling the cross of a medal; a triangular apical space luteous grey, in front of it a brown patch. ♂-antenna flattened from segment 5, 5 to 8 somewhat narrower than 9, none dilated at apex, 9 as long as 3, a little longer than 10, 10 as long as 11.

22. *Litocerus leucomelas* sp. nov.

♀. Brunneo-niger, subtus albo-pubescentis, supra albo-maculatus; pronoto lato macula magna basali laterali, altera parva laterali apicali, atque gutta minuta ad apicem sulci transversi; elytris macula basali fere semicirculari sat magna dorsali, altera parva supra humerum, tertia elliptica suturali antemediana atque parvis maculis dispersis modice numerosis; angulo carinae prothoracis fortissime rotundato.

Long. (cap. excl.) 6.8 mm., lat. 3 mm.

Hab. Borneo: Matang Road, Sarawak, 1 ♀.

Carinae of proboscis low, reaching about to middle, the middle one continued to apex by an elevation which is distinct only on account of the surface of the rostrum being depressed at each side of it, side of rostrum not cariniform between antenna and mandible. Frons a very little broader than segment 2 of antenna. Segment 3 of antenna as long as 9, 9 = 11, one-third longer than 10, 8 a little over one-half of 9. Check white. Pronotum very feebly punctate

at the sides, not quite twice as broad as long (19 : 11), strongly rounded, widest in middle, carina almost straight dorsally, nearly evenly curved forward at sides, the lateral longitudinal carinula forming an acute angle with it. Scutellum brown-black. Elytra broadest at base, posteriorly rather strongly depressed at suture, the elliptical sutural spot reaches to the middle of second interspace, at the beginning of apical declivity an inverted white comma in third interspace. Pygidium as long as broad, with a small basal lateral spot. Upperside of tibiae except base black, as is also the base of segment 1 of tarsi, rest of 1 and the whole of 2 white above.

23. *Litocerus figuratus chorispilus* subsp. nov.

♂♀. Vitta mediana pronoti angusta, late interrupta.

Hab. Sumatra : Sibolangit (Corporaal), type, and Si-Rambé (Modigliani) a series.

In *L. f. figuratus* the median stripe of the pronotum is broad, complete, while in *chorispilus* it is broken up into two or three spots.

24. *Litocerus stichoderes* sp. nov.

♂♀. *L. dorsalis* Jord. (1894) simillimus, pronoto atque lateribus pro- et meso- sterni sat fortiter punctatis distinguendus.

Hab. S. Celebes : Tjamba and Macassar (Doherty), a series.

The transverse sulcus of the pronotum is very distinct, being deeper than in *L. dorsalis* and better defined. The constriction of the luteous grey area of the elytra extends to the first line of punctures, sometimes to the suture, in which case the area is divided into an anterior and a posterior patch.

25. *Sympaector tenus* sp. nov.

♀. Rufus, nigro-signatus, capite, tarsis atque tibiarum apice nigro-brunneis, pronoto duabus vittis latis rectis nigris notato, antennis ante rostri medium insertis, segmentis 7^o et 8^o aequilongis, pygidio longitudine fere dimidio latiore.

Long. (cap. excl.) 5.8 mm.

Hab. S.E. Borneo : Pengaron (W. Doherty), 1 ♀.

The short pygidium distinguishes this species sharply from the other rufous *Sympaector* with black spots. In structure nearest to *S. pagis* Jord. (1911) and allies.

Antenna inserted at two-fifths from apex. Cheek bounded by a deep groove. The median stripe of pronotum about half as wide as a blackish stripe, narrowed at apical margin, lateral carina slightly concave above, basal longitudinal carinula oblique, curved down posteriorly. Elytra much less flattened and less narrowing anad than in *S. nigromaculatus*, subcylindrical, with the following black-brown markings : a small dot on subbasal swelling, another a little further back in sixth line of punctures, a third behind subbasal swelling on second interspace, a fourth at margin behind shoulder, a larger spot at one-fourth of margin extending up to interspace 8, a still larger one before middle, subrotundate, from interspaces 3 to 7, incised behind in seventh stripe, a small marginal spot in middle, a broad subapical band, anteriorly rounded at the sides and less so at the

suture on each elytrum, separated from pygidium on each elytrum by a circular yellowish grey spot about as large as the largish antemedian lateral spot, the band dorsally about as wide as the space separating it from the antemedian dorsal spot. Pygidium slightly brownish, pale at apex.

26. *Hucus pallidus* sp. nov.

♂♀. *H. striati* affinis, pallide rufus, pube griseo-flava tectus; pronoto macula apicali magna et altera basali nigris divisis, duabus maculis minoribus lateralibus subapicalibus separatis aut coniunctis eodem colore; elytris nigro-brunneis lineis pallidis striatis, sutura, basi atque macula communi transversa postmediana pallidis.

Long. (cap. excl.) 3.3–4.3 mm.

Hab. Java: 1 ♂ without more precise locality in Mus. Tring (type); Lembang, ix. 1924 (L. G. E. Kalshoven), 2 ♀♀ in Mus. Buitenzorg.

A very pale species with cream-coloured pubescence. The blackish apical basal median patches of pronotum square or oblong, divided by a more or less complete cream-coloured median line; the extent of the light colouring of the elytra somewhat variable, a patch on subbasal swelling, a median patch not reaching suture, a transverse area or a band at the beginning of the apical declivity, and the limbal area blackish brown and more or less broken up by pale lines; apex of tibiae and tarsi and base of hindtibia (in type also apex of hindfemur) blackish; a diffuse lateral spot on prosternum and usually a spot on metepisternum brownish. Rostrum with 5 distinct carinae. Frons about as wide as the interspace between central and second carinae. Antenna: in ♂ reaching beyond middle of elytra, segment 1 not nearly extending to eye, 3 as long 1 + 2 and one-fourth longer than 8, this one-third longer than 9, club rather narrow, but quite distinct, 10 twice as long as broad, 11 a little longer than 9; in ♀ 3 one-third longer than 4, one-half longer than 8, 9 very little shorter than 8, one-fourth shorter than 11, and nearly one-third longer than 10. Angle of carina less than 90°, the lateral carina somewhat convex. Pygidium one-fifth broader than long in ♂.

27. *Hucus sulcicollis* sp. nov.

♂. Rufo-brunneus, pronoto luteo-griseo maculis brunneis variegato, elytris dorso plus minus luteo-griseis, lateribus brunneis griseo-lineolatis; dimidio basali rostri leviter tricarinato; pronoto sulco lineari transverso antemediano instructo, angulo carinae acuto; antenna longitudine corporis, segmento 9° tribus primis simul sumptis paululo longiore.

Long. (cap. excl.) 4.7 mm.

Hab. Banguay I. (J. Waterstradt), 1 ♂.

Marking of pronotum diffuse: median vitta grey, disc on each side of it cinnamon, sides grey, on each side six blackish brown markings, one extending from the sulcus forward, a second being placed at the end of the sulcus, the third obliquely above the end of the lateral carina and three before the dorsal carina, of which the one in the angle is the largest; elytra grey shaded with cinnamon, sides and apex brown with short grey linear spots, in middle of suture a small cinnamon spot.

Dilated apical portion of rostrum as long as narrow basal portion, intermediate carina absent, median and lateral ones present, but not very prominent, in front of eye laterally a groove bounding the grey cheek. Antenna very pale rufous like the legs, darker distally, segment 1 not nearly reaching to eye, 3 little longer than 1, 4 to 8 equal in lengths, slightly shorter than 3, 9 a very little longer than 1 to 3 together, 10 about three times as long as broad (11 missing). Frons a little broader than the second segment of antenna. Pronotum with some large shallow punctures laterally, transverse sulcus sharply marked, almost interrupted in centre, dorsal carina convex, angle acute, but its apex rounded off, lateral carina reaching to middle, very slightly flexuose, lateral longitudinal carinula oblique. Sutural area of elytra somewhat flattened. Tip of tibiae and apical half of tarsi brownish. Underside of body grey.

28. *Hucus argutus* sp. nov.

♀. Compactus, nigro-brunneus, infra griseus, supra griseo-guttatus, pronoti vitta mediana et elytrorum fascia transversa mediana griseo-luteis. Rostrum gradatim dilatatum, fere sine carinis. Pronotum conicum, angulo carinae acuto retrorsum producto, carina laterali obsolescente.

Long. (cap. excl.) 4 mm., lat. 2 mm.

Hab. Philippines: Calapan, Mindoro, 1 ♀.

Median stripe of pronotum narrowed at apex, in depression of disc and at the carina, on each side of disc a spot in depression and laterally a series of three, connected with the grey underside, in front of lateral carina the usual brown ventral spot, sides of pronotum punctate, dorsal carina slightly convex, laterally more strongly convex, the angle of the pronotum, and with it the angle of the carina, produced backwards, acute, the carina here almost touching the margin of the elytrum, the lateral carina extending to meral suture, but very feeble, almost obsolete. Suture and alternate interspaces of elytra dotted with grey, base of suture extended grey, in middle a yellowish grey band from second to sixth interspace, the dots near sutural interspace behind this band yellowish and partly confluent.

Proboscis almost gradually widened, but the upper margin of the antennal groove distinctly widened, projecting, centre of proboscis somewhat depressed, carinae slightly indicated, only the lateral one distinct, but very short. Frons broader than the third segment of the antenna is long. Pubescence not denser on cheeks than on rostrum. Antenna reaching to base of pronotum, segment 1 a little longer than 2, 3 scarcely longer than 2, 3 to 7 equal in length, 8 shorter, club a little longer than 3 to 6 together, 9 half as long again as 10 and about as long as 11. Pygidium brown, with a slight indication of grey at apical margin.

Near *H. crassus* Jord. (1897) and *H. inclinans* Jord. (1895), both described as *Litocerus*; easily distinguished by the dorsal carinae of the rostrum and the lateral one of the prothorax being obsolete or nearly.

29. *Hucus dives* sp. nov.

♀. Praecedenti similis, pronoti carina lateralis haud obsolescente, clytris seriatim guttatis.

Hab. Borneo: Kuching (J. Hewitt), 1 ♀.

The second carina of the rostrum a little more distinct than in *H. argutus*

curved sideways at both ends, median carina traceable at base, middle of rostrum impressed. Frons a little narrower than in *H. argutus*. Antenna as short as in that species, but segment 3 to 5 slightly decreasing in length, 6 = 7 shorter than 5, 8 less than half 3, club nearly as long as 3 to 8 together, 9 one-half longer than 10, a very little longer than 11. Markings of upperside yellowish, pubescence of rostrum and cheek grey, not condensed on cheek. Basal angle of prothorax and carina as acute as in *H. argutus*, the median vitta of pronotum narrower and the lateral spots smaller than in that species; lateral carina distinct, somewhat flexuose. Elytra as in *H. argutus* not depressed at suture from near base to beyond middle; sutural and alternate interspaces almost regularly dotted with yellowish grey, the dots along suture partly confluent. Sides of sterna for the greater part rufous brown, abdomen with diffuse lateral patches of the same colour.

30. *Hucus cherulus* sp. nov.

♂. Speciei praecedenti structura persimilis, rostro longiore, elytrorum striis punctatis luteis.

Hab. Sumatra: Lau Rakit, East Coast, 29.viii.1921, 300 m. (J. B. Corporaal), 1 ♂.

Spots on pronotum smaller than in *H. dives*, the median vitta broken up into three spots; suture and alternate interspaces of elytra dotted with ochraceous and all the stripes of punctures also ochraceous. Rostrum one-fourth longer than broad (in *H. dives* as long as broad), sides rather strongly angulate above antennal groove, carinae as in *H. dives*. Antenna essentially as in that species, but segment 8 only a little shorter than 7, and 9 as long as 11. Lateral carina of pronotum straight, not flexuose.

The short antenna point to a ♀, but on opening the last abdominal segment I found the specimen to be a ♂.

31. *Basitropis euris* sp. nov.

♂♀. Statura et color *B. rotundatae* Jord. (1903), antennarum elava triarticulata multo tenuiore, pronoti lateribus minus rotundatis; ♂ tibiis anticis mediisque modice hamatis, posticis intus a medio ad apicem planato-impressis atque villosis.

Long. (cap. excl.) 4.3–5.7 mm.

Hab. Menado, Celebes, vi.1924 (Leefmans), several examples in Mus. Tring and Mus. Buitenzorg.

A short species, $2\frac{1}{2}$ times as long as broad; tibiae and abdomen immaculate. Rostrum shorter than in *B. rotundata*, three times as broad as long, in middle slightly depressed basally and subcarinate apically. Frons less than half as broad as the rostrum. Club of antenna narrower than in any other known species, consisting of three segments in both sexes, broader in ♀ than in ♂, in ♂ 9 and 10 conical, 9 a little longer than broad, 10 as long as broad, in ♀ 9 as long as broad, 10 about one-third broader than long. Sides of pronotum straight in posterior half. Abdominal segments 1 to 4 punctate centrally from base to apex, laterally at base only, segment 1 with a few punctures laterally halfway between base and apex. In ♂ fore- and midtibiae somewhat curved, slightly dilated at apex on inside, midtibia with distinct tooth; hindtibia, on underside

from middle to apex, flattened and somewhat impressed, this area villose and bounded on outside by an obtuse carina, which ends at apex with a small tooth.

32. *Basitropis suavis* sp. nov.

♂. Supra sat dense ochraceo-pubesceus, nigro-maculata, capite cum rostro et pronoto fortiter punctatis; antennarum clava triarticulata; pronoto evidenter inaequali, tibiis anticis et mediis simplicibus, posticis mucronatis.

Long. (cap. excl.) 6 mm., lat. 2.4 mm.

Hab. Borneo: Kinabalu, 1 ♂.

On pronotum four apical and two larger basal spots, on each elytrum a roundish lateral spot before middle and an irregular dorsal one in middle, as well as traces of other spots black. Rostrum rounded at sides, appearing constricted at base, not quite twice as broad as long, apical sinus triangular, base slightly depressed, no distinct median carina at apex. Frons as broad as the rostrum is long (measured from the eye straight to apex). Club of antenna broadish, segment 9 a little broader than long, 10 one-half broader than long, 7 and 8 slightly broadened, with some long hairs beneath.

Surface of pronotum somewhat uneven, depressed at the base, basal angle sharper than usual, sides incurved basally and gradually rounded medianly; puncturation much coarser than for instance in *B. nitidicutis*.

Pubescence on underside of femora and on coxa somewhat longer; bases of tibiae brown; apex of fore- and midtibiae simple, of hindtibiae armed with a sharp tooth which stands at right angles to the tibia; first segment of foretarsus with a strong spike-like tooth on underside, projecting distad, second segment dorsally very short, not being longer in the median line than the claw-segment is broad near its base. Abdomen medianly with dispersed small punctures, laterally without punctures, except segment 1, which bears some punctures in the basal groove, and segment 5, which is coarsely punctured all over, 5 not impressed, convex.

Nearest to *B. maculata* Jord. (1903), from Java, of which only the ♀ is known.

33. *Basitropis concolor* sp. nov.

♂. Lata; rostro carina mediana ad apicem continuata instructo; antennarum clava quadriarticulata; pronoto laeviter punctato, lateribus fere impunctatis, maculis luteo-griseis parvis; elytris fascia basali et altera anteapicali irregularibus luteo-griseis ornatis; tibiis macula mediana magna brunnea notatis, anticis apice intus obtuse dilatatis, intermediis et posticis simplicibus.

Long. (cap. excl.) 10 mm., lat. 4 mm.

Hab. Adonara (W. Doherty), 1 ♂.

Proboscis and antenna almost as in *B. hamata* Jord. (1903); apical sinus of the former small, sharp. Pronotum rounded at sides, incurved before base, punctures shallow and dispersed, absent from lateral area; yellowish grey markings small: at apex a thin median line, behind it an antemedian double spot, this spot and two spots behind it on each side form a circle, in between the two posterior spots of this circle some small dots which connect them with an indefinite posterior median stripe, outside the circle 4 or 5 spots. Basal band of elytra rather well-defined, enclosing an irregular sutural patch, a sharply marked,

oblong, basal spot halfway to side, and a triangular shoulder spot ; at beginning of apical declivity a much more irregular band, much invaded by the brown ground, produced forward in fifth interspace, interrupted at suture ; between the two bands a small number of dots, other dots, more or less confluent, at apex. Prosternum swollen before each coxa, anterior intercoxal process pointed, a little curved up (i.e. ventrad), posterior process forming a transverse ridge behind the coxae which is longer than in any of the allied species and highest behind each coxa. Abdominal segment 1-4 almost impunctate, anal segment with dispersed shallow punctures, its apical margin broadly convex in middle. Apex of foretibia dilated on inner side, the dilatation short, broad, quite rounded off. The extreme base and the middle of the tibiae brown, the median patch occupying from one-third to one-half of the tibia.

34. *Basitropis tersa* sp. nov.

♂. Parva, *B. lutoso* colore simillima ; rostro medio fortiter carinato, antennarum clava sat tenui triarticulata, pygidio convexo, segmento anali ventrali et tibiis simplicibus.

Long. (cap. excl.) 4 mm.

Hab. Philippines : Imugan, Luzon (Boettcher), 1 ♂.

Upperside pubescent yellowish grey, variegated with brown, four brown patches on pronotum particularly conspicuous, two each side, one subapical, diffuse, the other larger, oblong, before the carina.

Proboscis a little over twice as broad as long, with strong median carina, which extends far on to frons, apical sinus very shallow and broad, evenly concave, not anguliform. Segment 3 of antenna longer than 4, 8 as long as 7 and not appreciably broader, the club consisting of three segments, being similar to the club of *B. lutosus* Jord. (1895), lengths of the three segments : 9, 7, 11, breadths 7.5, 8, 8. Prothorax shorter than in *B. lutosus*, one-fourth broader than long, more rounded, but not so much as in *B. rotundata*, puncturation somewhat coarser than in *B. lutosus*. Pygidium convex, scarcely one-fourth broader than long. Abdominal segments 1 to 4 with a few large punctures at the base, 5 simply convex, not impressed as in *B. lutosus*, with very few large shallow punctures. All the tibiae simple, without the long hairs present in the ♂ of *B. lutosus*, and the foretibia without hook at apex.

35. *Basitropis illustris* spec. nov.

♂. Caput cum pronoto luteo-griseo-trivittatum ; elytrum linea luteo-grisea a basi supra humerum ad medium suturae et rotundatim ad limbum continuata atque deinde in forma laequei ad basin recurrente ornatum. Antennae a segmento 5° gradatim dilatatae. Pygidium valde convexum. Tibiae simplices.

Long. (cap. excl.) 9 mm., lat. 3.7 mm.

Hab. Philippines : Surigão, Mindanao (Boettcher), 2 ♂♂.

In markings unlike any other species of the genus. The median stripe of the pronotum sharply defined, about as broad as a tibia, slightly widened at the base, lateral stripe interrupted or irregular, a few luteous speckles above and below it. The luteous line of each elytrum forms a tear-shaped loop, round behind (in front of apical declivity) and pointed basally, forming a small blotch at base, basal margin and the area immediately behind it more or less luteous,

apex of elytra also marked with luteous. Underside luteous, abdomen with lateral marginal brown spots.

Proboscis coarsely punctate as usual, with a fairly distinct median carina. Antenna long-hairy beneath from segment 4, gradually increasing in width, 8 a little broader than long, larger than 7, 9 almost one-half broader than long, 10 twice as broad as long, 11 subovate, a little longer than broad. Pronotum coarsely but not densely punctate, very slightly shorter than broad, sides almost straight in posterior half, angle of carina obtuse and rounded off. Pygidium very strongly convex near apex, tuberculiform, brown at base. Coxae with a tuft of longer pubescence. Anal sternite simple, with dispersed large punctures. Tibiae simple.

ON THE BIRDS OF THE FRENCH ISLANDS, NORTH OF NEW BRITAIN.

BY ERNST HARTERT.

THE group of French or Witu Islands lies north of the western part of New Britain, about 80 km. from the latter. It consists of two larger and some smaller islands forming a northern group, and a southern island called Unia or Mérite Island. The group was discovered by D'Entrecasteaux, during his last voyage, on which he contracted the illness of which he died at sea, in 1793. He called the group Iles Françaises; hence they are called French Islands and Französische Inseln. Eichhorn collected on the largest of the northern group, called at first by D'Entrecasteaux Iles des Lacs, now Garowe or Witu Island, from Witu Harbour on its western side, and also visited Unia, the southern island. The highest point on Garowe Island is 300 m., that of Unia 587 m. The German New Guinea Company had on Witu a trading station and a plantation of over 40,000 coconut palms. Copra and cocoa are exported. There is said to be more rain than on the Gazelle Peninsula, New Britain.

Eichhorn writes: "The highest point of Witu is about 1,100 feet; the island is planted with much coconut and cocoa (cacao). The soil seems to be extraordinarily rich, hence the great output of copra and cocoa. There is a good deal of secondary growth, but a very small proportion of virgin scrub; there is very little flat ground and fresh water is scarce, some villages using only coconut in place of water. Insect life seems to be very scarce. I have a representative of all birds seen or heard, except the osprey (*Pandion haliaetus leucocephalus*) and the sea-eagle (*Cuncuma leucogaster*); there was no sign of any night bird. I spent four days on Unia Island, which is some 1,900 feet high; it was hardly time to make a representative collection, but it seems that quite a number of birds and insects occur there that are not found on Witu, and vice versa."

The ornithology of the French Islands is that of New Britain, but *Ptilinopus solomonensis meyeri* and *Halcyon chloris stresemanni* are peculiar to the Witu group. The ornithology is poor compared with that of the larger islands, as is always the case.

Specimens from the French Islands have reached the collections in Berlin and Munich, but no good collection has ever been made there, according to my knowledge, and no list of their birds has been published.

1. *Megapodius duperreysi* eremita Hartl.

Eichhorn found this species common on Witu, but did not see any nest mounds.

2. *Anous stolidus*.

A worn and faded specimen was taken on May 30th. These birds are often seen out at sea, but, according to Father Meyer, only ill and tired-out specimens are found on shore. There is evidently no breeding-place anywhere near New Britain.

The specimen sent is insufficient to determine the subspecies to which it may belong, but I am inclined to think that only one form inhabits these seas, which should be called *A. stolidus pileatus*.

3. *Tringa hypoleucos* L.

It is interesting to find these birds already common in July; one was shot July 8th, one 17th, one 18th, and by the end of the month it was common. Father Meyer also says that it arrives on Vuatom in July.

4. *Hypotaenidia philippensis lesouefi* (Math.) (?).

Eulabeornis philippensis lesouefi Mathews, *B. Australia*, i, p. 198 ("New Hanover," also New Britain).

Eichhorn found this bird not rare on Witu Island, and sent a series of eight adults, three young, and two eggs, which were found in a nest on the ground on July 20th, 1925. The eggs are typical ralline eggs; they are glossless rich-cream colour with reddish-chestnut and deeper lying greyish-mauve spots, largest and more frequent on the thick end. They are rather roundish and measure 37×28.7 and 36×28.2 mm.

The naming of the subspecies of Witu Island is not so simple. Comparing a series from New Hanover with that from Witu Island, one is struck by the different appearance of the two lots. Those from New Hanover appear more blackish on the back, the white markings on the lower hind-neck and upper part of the back are more distinct bars, the olive-brown edges to the scapulars and rump less developed, the white spots more frequent and extending over the rump to the tail.

The Witu specimens, on the other hand, have the white markings behind the chestnut nuchal band more in the shape of spots, the olivaceous-brown edges to the feathers of the upperside very wide and obvious, and there are, as a rule, no, or very few, white spots on the lower back, rump, tail-coverts, and rectrices.

Nevertheless, I do not propose to separate the Witu form, for the following reasons: These rails vary a good deal individually, and are not quite so constant, as Mathews' statements in vol. i of the *Birds of Australia* might make one believe. Two of our Witu birds are quite like one of our New Hanover specimens. Two specimens from Eastern New Guinea seem to agree well with the New Hanover ones, while one in moult from the south of Geelvink Bay (Pratt Bros. coll.) seems to agree with the Australian form (there may be only one subspecies in Australia), which is supposed to visit New Guinea on migration. Our examples from New Hanover are from February to April, those from Witu from June and July.

5. *Gallinula (Amauornis) olivacea nigrifrons* subsp. nov.

Differs from its allies, *G. (A.) olivacea moluccana* (Moluccas, New Guinea) and *G. (A.) olivacea ruficrissa* (Australia), by the absence of the orange-coloured small frontal shield, this shield being less developed, with a ridge in the middle, and of black or olivaceous-black colour. The upperside is darker, more brownish olive, and the vent and under tail-coverts a shade darker. Wings ♂ 140-145, ♀ 133-135 mm., culmen from end of feathering on forehead ♂ about 36-38, ♀ 34-35, tarsus 57-59 mm.

Habitat : Witu Islands, New Britain, Duke of York Islands, New Hanover, and probably also New Ireland, also Solomon Islands. Type : ♂ ad. Witu I., 24.vi.1925. Eichhorn leg., No. 10,328.

This Gallinule was found fairly common on Witu Island by Eichhorn. A nest was found in the grass on the ground on July 8th, with one egg. It resembles the eggs of *Hypotaenidia philippensis lesouefi*, but is a little more glossy, the surface has numerous fine dots, and looks less clean ; the markings are all over the egg. Measures : 38×27.7 mm.

The subspecies of this rail have been considered by Mathews and by Stresemann. Mathews calls the species *moluccanus*, but we must follow Stresemann, who recognized that *moluccana* is a subspecies of *olivacea* (Philippine Is.). Stresemann united the Papuan and Bismarck Archipelago specimens with *moluccana*, but they differ widely. Schlegel (*Notes Leyden Museum*, i, p. 163, 1879) described a single immature specimen as "*Gallinula Frankii*." It was brought to Holland by a missionary stationed on the Berau Peninsula. Though the exact village or place whence it came is not known, it is quite certain that it cannot have come from New Britain, as was once suggested by Mathews. The name can therefore under no circumstances be used for the New Britain form. Our specimens are slate-grey underneath, and the throat paler just towards the bill, but in one female from Witu the whole throat is whitish.

6. *Ptilinopus solomonensis meyeri* subsp. nov.

Subspeciei *P. solomonensis neumanni* dictae simillimus, sed rostro longiore, gutture virescentiore distinguendus.

Though very closely allied to *P. solomonensis neumanni* from Nissan Island (cf. Nov. Zool. 1926, p. 42), the birds from Witu have longer bills, and the throat is green, only lighter than the crop, but without the greyish tinge which is more or less obvious in both sexes of *P. s. neumanni*. Culmen ♂ 17-18.5, against 15-16 mm. in *P. s. neumanni*. Wings ♂ ad. 122-128 mm. Type : ♂ ad. No. 10.263, Witu Island, 11.vi.1925. A. F. Eichhorn coll.

The occurrence of a yellow-chested form of *P. solomonensis* on the Witu group is of great interest. Until I described *P. s. neumanni* from Nissan, we only knew a yellow-chested form on Manus (Admiralty Is.), St. Matthias, Storm Island, and New Hanover, except that Father Otto Meyer had, in 1906, stated that he found "*P. johannis*" on Vuatom, and that P. Schumm had also found it on New Britain! This shows once more that New Britain is not so well known as one is inclined to think, since so many collectors and even ornithologists have been there. I have the pleasure to name the Witu race in honour of Father Otto Meyer, who wrote the interesting article, full of biological notes, on the birds of Vuatom. Of course it is not at all certain that the Vuatom birds are exactly the same as the Witu ones, but they are yellow-chested *solomonensis*.

In the Witu form the chest-band is deep yellow.

Possibly the colour of the iris is different ; in the specimens from Nissan (*P. s. neumanni*) Eichhorn marked the iris as "yellow," in one case "deep yellow," and in all the Witu ones as "dull greenish yellow" or "pale greenish yellow," and Father Meyer said of the Vuatom birds that the iris was "grüngelb."

Eichhorn found this Pigeon common on Witu.

7. *Ducula pistrinaria van-wyckii* (Cass.).

Carpophaga van-wyckii Cassin, *Proc. Philadelphia Acad.* 1862, p. 320 (New Ireland).

Cf. *Nov. Zool.* 1926, p. 35.

One male was obtained on Witu July 1st, 1925. "Iris dark red, bill lead blue, feet plum-red." Eichhorn says he found it "rare on this island."

Lord Rothschild called my attention to the fact that the best distinguishing character of this form seems to be the pale, whitish throat with hardly any pinkish tinge, and the greyer breast, and in fact entire underside, the breast being quite vinaceous pink in *D. p. pistrinaria*.

8. *Gallicolumba beccarii johannae* (Sel.).

Cf. *Nov. Zool.* 1926, p.

This little Pigeon was also found on Witu Island, but Eichhorn calls it "comparatively rare." A quite young bird was shot July 14th. I have already stated that "*G. b. nodifica*" is a synonym, the coloration of the chest varying to a certain degree.

9. *Macropygia rufa rufocastanea* Rams.

Common, series from June and July.

10. *Chalcophaps stephani stephani* Rehb.

Also common on Witu.

11. *Caloenas nicobarica nicobarica* (L.).

Eichhorn says it is rare on Unia, from where he sent one ♂ shot 4. viii. 1925. It was not noticed on the great Witu Islands.

12. *Dupetor flavicollis gouldi* (Bp.).

Cf. *Nov. Zool.* 1908, p. 354.

In my recent articles on the birds of islands in the Bismarek Archipelago, I have called this heron *Dupetor flavicollis nesophilus*, but I now revert to our idea of 1908, that only one subspecies should be recognised from Australia to New Guinea, the Aru Islands and Moluccas, and the Bismarek Archipelago. The form from the Solomon Islands is *D. f. woodfordi* with a very different female. Sharpe placed it in a separate genus, *Erythrophox*, because the tarsus is distinctly longer, but this is a good specific or subspecific, not a generic, character (cf. *Nov. Zool.* 1908, p. 353). The male of *D. f. woodfordi* is not separable in colour from most of the adult males from the islands of the Bismarek Archipelago, etc., the differences which we stated i.e. not being constant. It is true that Bismarek Archipelago birds are generally very deeply coloured and rather bluish black on the head, but then ours are very fresh and freshly moulted, beautiful clean skins, while in all the number from Australia before me there is not one really beautiful skin.

It is also remarkable that the uniform slaty black variety is not, as far as

I know, found in Australia,¹ while it occurs on the Moluccas and Aru Islands, and is not at all rare in the Bismarck Archipelago, in fact all adult males we received from Witu are slate-black; it is of course certain that "*D. melas*" (*Ardetta melaeana*, Salvadori, 1878) is not a different species, as we still thought in 1908; it is a melanism, or "mutation," as it is now usual to call it.

There appears to be only one form in Australia. Mathews named three supposed subspecies in 1912, but in 1913 already reduced them to one, which, it seems to me, is also synonymous with *gouldi*, first described from Australia.

Dupetor flavicollis gouldi is evidently common on Witu, as Eichhorn sent ten specimens. The young of the black form is already blackish brown underneath, brownish black above, with pale brownish fringes to the feathers. The iris of adults and young is brownish yellow to dark brownish golden yellow. The bill in the black form is quite black, in the others the under mandible is more or less light horn colour. The females are underneath more brownish, the upperside brown, but sometimes rather slaty and then very little different from adult males; Mathews was wrong in saying, in his book on the *Birds of Australia*, that the female is like the male.

It has often been queried if "*Dupetor melas*" was really a different species (cf., among others, Otto Meyer in *Natur und Offenbarung*, 1906, p. 649), but Stresemann (*Orn. Monatsber.* 1926, p. 118) clearly said that it was a melanistic form, and this is undoubtedly correct, and he also called attention to Meyer's discovery of an albinistic specimen on New Britain.

13. *Demigretta sacra*.

Was found rare on Garowe (Witu); one shot on the last day could not be packed, so it did not yet reach Tring.

14. *Geoffroyus heteroclitus* (Hombr. & Jacq.).

Rare, one female sent.

15. *Lorius roratus goodsoni* Hart.

Common on Witu, but much persecuted by the planters, on account of the damage they do, chiefly to the cocoa pods.

Also common on Unia Island.

16. *Domicella hypinochroa devittata* (Hart.).

Eichhorn found this parrot rather rare. A nest was seen in a huge tree, but could not be reached. Some of the skins moult primaries.

17. *Trichoglossus haematodes aberrans* Rehw.

Cf. *Nov. Zool.* 1925, p. 123.

Found moderately common on Witu.

¹ It is true that Diggles, in the *Transactions of the Philosophical Society of Queensland*, 1874, article 2, p. 6, described an *Ardetta nigra*, which is probably what Sharpe called *Dupetor melas*; this is said to have come from about thirty miles from Cape York, and had been collected (or sent) by Cockerell. Mathews says "presumably" this blackish heron, which apparently was Sharpe's *Dupetor melas*, came from the Aru Islands, but of course it might really be from the Cape York Peninsula, though known to have been shot on Aru, and not in Australia. We only know of Diggles' article through Mathews, *Austral Avian Record*, i, pp. 68-72, and ii, pp. 144-153, where the dates of publication are also discussed.

18. *Charmosynopsis placentis pallidior* R. & H.

"Common on Witu. Nesting in growth of crows-nest fern." A series from June shows no moult. Two eggs were found in a nest on July 27th. One egg sent is quite brownish, evidently stained from the nest. It is without gloss and measures 19×16.5 mm.

19. *Micropsitta pusio pusio* (Sel.).

Anted., p. 129.

Eichhorn found this little parrot rare on Witu and a little commoner on Unia Island. He sent two skins from each of the two islands. One of the Witu specimens is as highly coloured as the one from the Kotoi district in the Owen Stanley Mountains mentioned p. 130, so that the latter obviously does not belong to a separable mountain form; the yellow superciliary stripe is of course clearly visible in the Kotoi district specimen (*salvadorii*), but not in the *pusio* from Witu.

20. *Halcyon albicilla saurophaga* Gould.

Cf. Nov. Zool. 1924, p. 277; 1926, p. 38.

Found somewhat rare on Witu. Five adults sent. Specimens from June 11th and 26th and July 27th are in moult (twice wings, all tail and body plumage).

21. *Halcyon chloris stresemanni* Laubm.

Halcyon chloris stresemanni Laubmann, *Verh. Orn. Ges. Bayern*, xv, p. 391 (1923—French Islands); *antea*, p. 133.

This interesting form was found common on Witu in June and July. About half the specimens sent are in moult. Iris dark brown. Bill black and white. "Feet blackish."

In the article on "Talasea" in *New Britain* I have described the differences of this subspecies, which is only known, so far, from Witu and Rook Islands.

22. *Halcyon sancta sancta* Vig. & Horsf.

Common on Witu in June and July. All showed tail and body moult, but very few on the wings, which are mostly freshly moulted.

23. *Chalcites lucidus lucidus* (Gm.).

Cf. Nov. Zool. 1925, p. 159.

A female from Witu Island shot 23.vii.1925 and a male shot on Unia Island 4.viii.1925 seem to belong to the true *lucidus*, which is a winter visitor from New Zealand.

These birds seem to be true *lucidus*, though the Unia Island one has distinctly some rufous on the second rectrix; this, however, is sometimes seen in *lucidus*, though, curious to say, in our series mostly in specimens from Australia! As a rule *lucidus* has a narrower bill than *plagosus*, but this character is also not absolutely constant, though obvious in series.

24. *Chalcites lucidus plagosus* (Lath.).

Cf. *Nov. Zool.* 1925, p. 159.

Two females were shot on Unia Island August 3rd and 4th. These birds are obviously *C. l. plagosus*. Both forms of *Chalcites* were rare during Eichhorn's stay; he remarks that they are migrants and that they seldom if ever call.

25. *Eurystomus orientalis crassirostris* Scl.

Cf. *Nov. Zool.* 1926, p. 000.

Four from Witu and two from Unia, where Eichhorn thought they were more numerous than on Witu. Four show moult.

26. *Eurystomus orientalis pacificus* (Lath.).

Cf. *Nov. Zool.* 1914, p. 213.

A single male of this Australian form, which winters in New Guinea and adjacent islands, was shot on Unia Island 1. viii. 1925.

27. *Merops ornatus* Lath.

A few were found on Witu in July, while it was common on Unia Island in August. All show some moulting feathers in various places, only a male from July 1st is in badly worn plumage and does not yet moult.

There is evidently only one form in Australia.

28. *Collocalia esculenta esculenta* (L.).

Cf. *Nov. Zool.* 1924, p. 206; 1925, p. 128.

Common on Witu Island in June and July. One June 24th moulting wings, tail, body.

29. *Monarcha alecto chalybeocephalus* (Garnot).

Eichhorn sent 3 ♂ and 3 ♀ shot August 1st and 2nd on Unia Island, and says that they were common, but did not occur on Witu Island.

30. *Monarcha cinerascens impediens* Hart.

Monarcha cinerascens impediens Hartert, *Nov. Zool.* 1926, p. 40 (Feni and Nissan Is.).

Common on Witu Island. A series of ten quite agree with the Feni and Nissan birds. The darker colour of the abdomen is not constant. Wings ♂ 82-86, ♀ 87-89 mm.

Seems to be common on all the lesser islands, but to be absent from the large islands of the Bismarck Archipelago. On Vuatom it was found frequently by O. Meyer.

31. *Rhipidura tricolor melaleuca* (Quoy et Gaim.).

Common on Witu Island.

32. *Graucalus novaehollandiae melanops* (Lath.).

Corvus melanops Latham, *Index Orn. Suppl.* p. xxiv (1801—Australia! Mathews concludes that the type came from N.S. Wales).

A female was shot on Witu Island June 4th, 1925. Eichhorn noticed that it was migratory and rare. In New Britain (Talasea) it arrived in April, when

he was leaving. It is not at all numerous in the Bismarck Archipelago. Reichenow only mentioned it from Duke of York Island and Ralum.

33. *Myzomela sclateri* Forbes.

Myzomela sclateri Forbes, *Proc. Zool. Soc. London*, 1879, p. 265, pl. xxv, 2 (Palakuru, Credner Islands); *Nov. Zool.* 1915, p. 35.

Eichhorn found this beautiful *Myzomela* very common on Witu Island, and sent a fine series. He also says that it is rare on Unia Island, but sent no specimens from there. The female has the throat dark grey, irregularly striped or spotted with pale yellow. Wings ♂ ad. 63-67, ♀ ad. 59-62 mm.

This, like *Pachycephala pectoralis dahli*, is a bird of the small islands: Credner group (or southern Duke of York group), Dampier Island (*Nov. Zool.* 1915, p. 35), Vuatom, and Witu. Nanuka or Nanuk is also one of the Credner Islands. The freshly moulted adult male has the throat brilliant red and is a very beautiful bird.

Nest, eggs, and habits have only been described by Father Otto Meyer.

34. *Cinnyris jugularis flavigastra* (Gould).

♂♀ ad. Unia Island, August 4th, 1925.

Eichhorn says it was not rare on Unia, but does not occur on Witu Islands.

35. *Cinnyris sericea corinna* (Salvad.).

Eichhorn found it fairly common on Unia Island, but says that it does not occur on Witu Island.

36. *Pachycephala pectoralis dahli* Rehw.

Cf. *Nov. Zool.* 1926, p. 46.

Common on Witu Island. It is remarkable to find *dahli* again on Witu, as well as on Credner, Nissan, Palikuru, while *finshi* is the form of the larger islands: New Britain, New Ireland, New Hanover.

37. *Aplonis metallica nitida* (Gray).

Very common on Witu Island.

38. *Aplonis cantoroides cantoroides* (Gray).

Also common on Witu Island. "Iris bright yellowish red."

39. *Corvus coronoides insularis* Heinr.

Eichhorn found it common on Witu and says that it does not occur on Unia Island.

40. *Pandion haliaetos leucocephalus*.

Observed by Eichhorn, *in litt.*

41. *Cuncuma leucogaster*.

Observed by Eichhorn, *in litt.*

NEW GEOMETRIDAE IN THE TRING MUSEUM.

By LOUIS B. PROUT, F.E.S.

SUBFAM. OENOCHROMINAE.

1. *Eumelea rosalia ditona* subsp.n.

♂♀. When I dealt with the genus *Eumelea* in Seitz' "Macrolepidoptera" (xii. 30-34), I had to write: "From the Solomon Islands I have seen too few examples [of *rosalia* Cram.] to be able to discuss the variation. As a matter of fact, the Tring Museum only contained 3 ♂♂ from Arawa, Bougainville, and 1 ♂ from Florida Island. A. F. Eiehorn has since sent 3 ♂♂ and 2 ♀♀ from Nissan Island, which fully confirm the suggestion given by the Arawa examples of a separable race. Both wings at base almost clear yellow, thence as far as the rosy border very heavily irrorated with yellow, the apex of the forewing again mixed with yellow; borders about 4-6 m. broad, more sharply defined than in the other races.

Type: a ♂ from Arawa, Bougainville, December 1907 (A. S. Meek).

The single example from Florida is still more extreme and may possibly indicate another race. Specimens from the Bismarck Archipelago are somewhat intermediate between *r. attenuata* Warr. and *r. ditona*, and stray aberrations from quite remote localities (notably a ♂ from Sula Besi in coll. Tring Mus.) can closely approach the latter. It should be added that *marginata* Prout (1920), from Sula Mangoli, seems to be a distinct species or a race of *semirosea* Warr., as it shows no trace of the dense hairy clothing of the ♂ hindtibia which—though in rather variable degree—characterises all the races of *rosalia*.

2. *Brachytrita cervinaria amara* subsp.n.

♂, 41 mm. The "red-fawn colour" (properly cinnamon to sayal-brown) of *c. cervinaria* Swinh. (1904) replaced by a dull fawn-colour, verging on avellaneous or wood-brown, with almost the entire areas outside the oblique line suffused with cinnamon-drab to benzo-brown. Underside similarly very much less "ochreous" than in *c. cervinaria*, the line of the hindwing obtusely angled at R² (in *c. cervinaria* scarcely bent, in W. African examples evenly curved). The additional markings described in Bastelberger's excellent supplementary account of *c. cervinaria* (*Jahrb. Nass. Ver. Nat.* ix. 82-83) traceable, but weaker than in the continental forms; the hindmarginal area of forewing beneath whitish, without the "sulphur-yellow" tone. In addition, the termen of the hindwing is somewhat fuller in the middle.

E. Madagascar: Imerimandrosa, Lake Aloatra.

SUBFAM. LARENTIINAE.

3. *Eois nigricosta* sp.n.

♂♀, 24-28 mm. Larger than *costalaria* Schaus (*Tr. Amer. Ent. Soc.* xxvii. 262). Vertex more extended yellow, only with a very narrow white fillet in

front. Abdomen with some black dorsal dots. *Forewing* with costal border more broadly and deeply black, crossing SC, the yellow spots almost invisible, being reduced to very minute dots; longitudinal black streak of outer area likewise thickened.—*Hindwing* with postmedian line angled outward in middle instead of regularly curved.

Peru: Carabaya, S.E. Peru, the type ♂ and 3 others from Oconeque, 7,000 feet, July 1904 (G. Ockenden); E. Peru, 2 ♂♂ from Cushi and 4 from Huanca-bamba, Cerro del Pasco. E. Ecuador: La Victoria, Rio Pastaza, 1 ♂ in coll. Joicey.

The only 2 known ♀♀ (Santo Domingo, Carabaya, coll. Tring Mus., coll. Joicey) are rather small (24 mm.) and a little lighter than the ♂♂. Two ♂♂, at least as small and almost as light, from Chulumani, Bolivia, possibly represent a local modification, but this is scarcely probable. They were collected in December and January (wet season), the Santo Domingo ♀ at the end of the wet season (April), the Oconeque ♂♂ in the dry season.

4. *Eupithecia niveivena* sp.n.

Tephroclystia atrisignis ab. *niveivena* Warr., MS.

♀, 18-20 mm. Head concolorous with wings. Palpus 1 $\frac{3}{4}$, stout, at extreme base and on the small terminal joint predominantly white. Antenna minutely ciliated. Thorax above chocolate-drab in front, largely white in middle and on tegulae. Abdomen above concolorous with wings, on sides with black spots, beneath whitish. Foreleg darkened above, with white rings at ends of tarsal joints.

Forewing with costa gently arched in distal half, termen slightly curved; areole single; chocolate-drab, very finely irrorated with white and more sparingly with blackish fuscous; subcostal vein partly whitened; cell-mark deep black, slightly raised, almost as long as DC²⁺³, slightly widened in middle, edged proximally by a very fine, slightly curved whitish line; the dark transverse lines subobsolete, the postmedian least indistinct, somewhat thickened at costal margin at $\frac{2}{3}$, indented subcostally, excurved radially; proximal to it a characteristic line or bar of whitish, touching the cell-spot at its anterior and posterior extremities, bending sharply out away from it between, posteriorly broadened and indistinctly bisected, reaching the junction of M with M¹, then becoming obsolete or nearly so; subterminal line whitish, rather fine, but distinct, more or less dentate inward on the veins and outward between, most sharply so anteriorly (where it recedes a little from termen), least so about R²-R³, a little thickened behind M², then running to tornus; terminal line not intense, interrupted by white dots at vein-ends; fringe a little paler than ground-colour, broadly but weakly dark-spotted in proximal half opposite the veins.—*Hindwing* almost concolorous, very slightly greyer; rather uniform, only with traces of slightly darker markings at abdominal margin (a subbasal patch, tornal spot and beginnings of postmedian lines) and of whitish subterminal—with its subtornal spot more distinct, though small; termen and fringe as on forewing.

Forewing beneath slightly paler and smoother; cell-mark moderately strong; indications of transverse markings, especially a postmedian band. *Hindwing* still a trifle paler, with elongate, oblique cell-mark (faintly discernible above when looked for) and shadowy postmedian band just beyond.

Ceylon: Pundaloya, March 1899 (E. E. Green), type and another in coll. Tring Mus., one from the same source in coll. Brit. Mus., found among the very mixed series of "*rajata* Guen." (!); Haputale in February, Petipola in March-April Maskeliya in May, a few in coll. Joicey ex coll. G. C. Alston.

5. *Asthenotricha tripogonias* sp.n.

♂, 34 mm. Antenna simple. Head and body brown mixed with red; abdomen irrorated with black; a white dorsal mark at end of each segment.

Forewing with termen slightly waved; long dense masses of suberect red hair from costa, overhanging cell above and beneath; pale wood-brown, beyond the postmedian scarcely, proximally thereto densely, irrorated with red; postmedian at about $\frac{3}{5}$, crenulate, gently curved, rather less oblique than termen; distal area with minute grey dashes on veins; terminal line red; fringe dark grey, with a pale line at base.—*Hindwing* with termen subcrenulate; the hair-pencil rather large, red; postmedian line nearly central, darker grey posteriorly; the red flush chiefly behind cell, but continued appreciably to termen; distal area and fringes as on forewing.

Underside, excepting posterior part of forewing, densely irrorated with black, the proximal area more heavily than the distal.

Reunion, May 28, 1922 (G. F. Leigh), 1 ♂.

A most striking species, on account of the additional hair-tufts. 3 ♀♀ which probably belong to it (April 25, April 30, and May 28, 1922, G. F. Leigh) are darker and more uniformly rufous, with black irroration, more conspicuous black cell-dots above and beneath, a bent antemedian line, faint traces of other lines proximally, the postmedian triple, the veins distally more strongly light- and dark-dotted than in the ♂.

SUBFAM. GEOMETRINAE.

6. *Nartheclusa perplexata ugandensis* subsp.n.

♂♀, 44-52 mm. On an average larger than *p. perplexata* Walk. (1862), from West Africa. Ground-colour lighter, but at the same time rather brighter yellowish (less buff); irroration coarser, generally more extended; cell-dots and especially (on forewing) costal spots larger; the subternal black spots which are generally present or at least indicated on the forewing of *p. perplexata* seem never developed, but on the contrary some aberrations show an amorphous spot on R^3 of that wing just outside the postmedian.

Uganda, apparently common, the type from Toro, January 1902 (F. J. Jackson).

Walker's genera *Neqla* and *Nartheclusa* were published simultaneously and were first merged by Butler (*Tr. Ent. Soc. Lond.* 1882, p. 390), who selected the name of *Nartheclusa* and must unfortunately be followed as the "first reviser."

7. *Aspilatopsis somereni* sp.n.

♂, 34 mm. Near *rufaria* Warr. (Nov. Zool. xvi. 120, Angola), possibly a race. Both wings slightly less broad, hindwing with costal margin relatively longer, termen rather more sinuous. Colour purple-red instead of orange-red. Forewing with black irroration rather stronger, inclining to form additional

fragmentary lines in median area; antemedian line more blurred, less oblique inward posteriorly, apparently with an angle outward at fold; postmedian slightly less straight, being very faintly incurved between R^2 and hindmargin; apex more whitened, especially beneath.

Kenya Colony: Nairobi, August 2, 1918 (Dr. van Someren), type. Also a slightly larger, slightly darker ♂ from the Kikuyu Escarpment, 6,500–9,000 feet, March–April 1901 (W. Doherty) in coll. Tring Mus. and a ♂ from Lumbwa, April 17, 1923 (G. W. Jeffery) in coll. Brit. Mus.

8. *Xylopteryx sima* sp.n.

“*Scotopteryx emunctaria* (Guen.)” Warr., *Nor. Zool.* ix. 526 (1902) (ex err.; nec *Boarmia emunctaria* Guen., *Spec. Gén. Léop.* ix. 244).

♂♀, 41–45 mm. Recognizable from Warren’s differential notes under the above heading and on the following page under [“*S.*”] *Xylopteryx versicolor* (Warr.).

Forewing with the postmedian line more strongly projecting at the radials than in *versicolor*, the blackish proximal-subterminal shade more strongly developed, more dentate, in both these respects more resembling the true *X. emunctaria* (= *interposita* Warr., *Nov. Zool.* ix. 526), though rather more extreme; antemedian, on the other hand, though slightly more oblique than in *versicolor*, without the acute outward angle at fold which in *emunctaria* is almost as strongly developed as in *prasinaria* Hmps. (1909).—*Hindwing* variable in the amount of brown suffusion, but always whiter—especially anteriorly—than in the two allies.

Kenya Colony: Kikuyu Escarpment, 9 ♂♂, 6 ♀♀.

The species which is evidently the true *emunctaria* is represented in Tring Museum by 2 ♂♂ and 3 ♀♀ from Eritrea, the ♂♂ agreeing with Warren’s *interposita* (1902), the ♀♀ with Guenée’s type ♀ as figured by Oberthür, *Et. Léop.* ix (1) 28, t. cexxxiv, f. 1906.

9. *Xylopteryx aucilla* sp.n.

♂, 27–28 mm.; ♀, 32 mm. Smaller than *arcuata* Walk. (1862). Face whitish. Antenna of ♂ with the joints more triangularly projecting. Thorax with the posterior crest very strong; abdominal crests, on the other hand, vestigial.

Wings rather narrower than in *arcuata*.—*Forewing* with costal margin less arched; antemedian lines approximated and parallel, merely obliquely curved; postmedian with the prong at R^2 less long and acute than in *arcuata*; dark area proximally to the subterminal more restricted and incomplete; area distally to the subterminal mostly pale, with dark patches at R^{1-2} and at tornus. —*Hindwing* with cell-spot rather strong, subterminal band in the ♂♂ narrower than in average *arcuata*.

Both wings beneath with dark subterminal shades correspondingly reduced.

A fine aberration, to which belong one of the ♂♂ and the only ♀, has the median area of the forewing much darkened, against the two lines and in a central shade deep black, the proximal and distal areas mostly whitish.

Kenya Colony: Kibwezi, April 23, 1919, type ♂, May 9, 1918, ♂ ab., July 28,

1917, ♀ (W. Feather); also a ♂ from Masongoleni, June 21, 1911, ex coll. Fawcett, determined by h m as *arcuata*.

10. *Cleora athola* sp.n.

♂♀, 43–45 mm. Close to *rufomarginata* Moore (1867), but larger, slightly broader winged.—*Forewing* much more uniformly coloured, the median area scarcely lightened except in the radial lobe of the postmedian and at hindmargin between median and postmedian, the black cloudings proximally and distally to this area wanting or extremely weak; antemedian line less regularly curved, having a proximal indentation at C; median area less narrowed; subterminal line and shades chiefly developed from costa to middle of cellule 6 and again near tornus, the pale midterminal patch weakly differentiated from the ground-colour, consequently quite inconspicuous.—*Hindwing* whitish, with more or less dense black-grey irroration, but with very little of the yellow or reddish suffusions of *semiclarata* Walk. and *rufomarginata*.

Underside much paler and less variegated than in *rufomarginata*.

Sikkim, 4,000–7,000 feet, 5 ♂♂, 1 ♀, the type from Darjiling, February 25, 1889 (Pfleger).

In addition, a dwarfed ♂ from a higher altitude (Tonglo, 10,000 feet, July 1886, H. J. Elwes), which is no larger than *rufomarginata*, but otherwise a perfectly typical *athola*.

11. *Cleora tora* sp.n.

♂, 21–28 mm.; ♀, 31 mm. Nearest to *proëmia* Prout (1917), agreeing therewith in some details of structure which were not brought out in the original description: palpus with the same close scaling, tongue rudimentary, antenna of ♀ bipectinate. Antennal pectinations of ♂ slightly longer still.—*Forewing* with stalk of SC^{1-2} connected with C; coloration variable, but nearly always of a brighter (more yellowish or reddish) brown than that of *proëmia*, always more sharply black-marked, with a strong tendency to develop longitudinal clouding about R^2 , sometimes also with most of proximal and median areas blackened posteriorly; postmedian line better expressed than in *proëmia*, much more sharply angled outward at R^2 .—*Hindwing* with proximal line sharply black, usually thick; postmedian finer but rather sharp, not obsolete at costa.

Madagascar: Diego Suarez, March–September (G. Melou), 19 ♂♂, 1 ♀.

12. *Cleora atriclava* sp.n.

♂♀, 34–40 mm. Face dull dark brown, overhung with fringe of pale buff and with the pointed cone of lower extremity mixed with the same colour. Palpus $1\frac{1}{2}$; dark brown, tipped with whitish buff. Tongue fully developed. Antenna in ♂ bipectinate to about $\frac{5}{8}$, the branches very long, decreasing very rapidly, on the 28th joint rudimentary, thence minutely ciliated and with short fine bristles; in ♀ shortly ciliated. Vertex dark brown, occiput paler. Thorax and abdomen not very robust; concolorous with wings. (Abdomen not hairy beneath.) Fore- and midleg infuscated on upper- and inner side, the tips of the joints remaining pale. Hindtibia of ♂ dilated with pencil; abdominal spine long.

Forewing fairly broad, termen moderately oblique, faintly waved, gently curved behind middle; fovea strong; base of SC^1 nearly always obsolete, leaving

it to arise out of C, vestiges in a few examples showing it short-stalked with SC²; pale brown, predominantly of an ochreous tone, which becomes brighter just proximally to the antemedian and distally to the postmedian line; very heavy, though slightly irregular fuscous and blackish irroration or strigulation; cell-spot moderate, generally with minute pale pupil; lines blackish, strongest at costa and hindmargin, often obscured in middle of wing by the heavy irroration; antemedian sinuous, markedly outbent in cell, somewhat angled outward at fold, vertical to hindmargin; median shade weak, excurved outside the cell-spot, posteriorly near the postmedian; postmedian dentate, inbent between SC⁵ and R¹; slightly incurved in posterior half, intensified from fold to hindmargin; a broad longitudinal black mark, 2 or 3 mm. in length, running from the postmedian outward at R²-M¹; subterminal more or less interrupted at the veins, anteriorly macular, posteriorly finer and more lunulate, between R² and M¹ intensified, in places (especially between the radials) filled in with dark spots proximally; terminal line more or less interrupted, with distincter inter-neural spots; fringe with pale line at base and pale spots at veins.—*Hindwing* with termen rounded, weakly subcrenulate; as forewing, excepting the antemedian; the black mark outside the postmedian shorter, sometimes rather less prominent.

Both wings beneath rather more ochreous, though rather pale, to beyond the postmedian line, thence infuscated, especially on forewing, where there is formed an almost solid, though not sharply defined, dark border, containing a pale spot between R³ and M¹; markings much as above, but without the median shade and with the subterminal vestigial.

Madagascar: Diego Suarez, March-September 1917 (G. Melou), 14 ♂♂, 9 ♀♀.

Related to the group of *brunneata* Warr. (Nov. Zool. ix. 523), but not closely; palpus less long, forewing broader, hindwing less crenate, etc. Perhaps also related, in spite of the long pectinations, to the "*Racotis*" *squalida* (Butl.) group.

13. *Boarmia renimacula* sp.n.

♀, 24-27 mm. Closely like *octomaculata* Wlgrn. (1872), perhaps a subspecies. Forewing with cell appreciably shorter, the cell-spot consequently central; this spot on both wings more black-grey, less round, more oval or reniform; postmedian line on forewing less sharply outbent at R¹, on hindwing farther from cell-spot; both wings beneath with a more strongly developed blackish border, about 1 mm. in width, little wider anteriorly than posteriorly, reaching hindmargins.

Senegal: Sédhiou, January and March 1917 (H. Castell), 3 ♀♀, including the type; Thiès, February and December 1907 (Riggenbach), 2 ♀♀. Gambia: Bathurst, 1 ♀. Also a considerably larger ♀ (? race) from Ganale River, April 17, 1901 (C. von Erlanger).

14. *Paralcidia colpochlaena* sp.n.

♂, 32 mm.; ♀, 35 mm. Face with rather sharp cone of scales below. Palpus in ♂ 1½, in ♀ slightly larger; pale buff, dark-mixed on outside. Vertex, front of thorax and wing-tegulae predominantly dark brown; middle and underside of thorax, with abdomen, paler.

Forewing slightly more elongate than in *errabunda* Warr. and *marginata* Warr. (1906), but scarcely so narrow as in *subvinosa* Prout (1916); costal edge vinaceous buff, dotted with blackish; ground-colour pretty uniform, glossy brown from base to postmedian, only with the lens resolvable into a more fawn and a more olive-brown blend; antemedian line faintly traceable by some pale scaling, somewhat sinuous, oblique outward from $\frac{1}{3}$ costa to an acute angle close to end of cell, then very oblique inward and lost, reappearing as a white, distally dark-edged dot at about $\frac{1}{3}$ hindmargin; a fine whitish postmedian from $\frac{3}{4}$ costa, or beyond to hindmargin near tornus, incurved between the radials, and more slightly at fold, gently excurved about SM^2 , very oblique inward to hindmargin; distal area pale grey to whitish, with some cinnamon-buff admixture, especially on the veins; terminal dots small, fuscous; fringe proximally light brown, inclining to buff, distally more dark-mixed.—*Hindwing* greyish at and towards the postmedian line, becoming paler basewards; an ill-defined grey cell-spot; postmedian line crenulate, incurved between the radials; area beyond pale, with a slight vinaceous tinge; terminal dots elongate, very weak, brownish; fringe tinged with buff.

Both wings beneath predominantly pale, the forewing with slight greyish suffusion as far as the postmedian, hindwing with dark irroration; postmedian on forewing anteriorly, on hindwing throughout, sharply fuscous; hindwing with cell-spot fuscous.

Dutch New Guinea: Mt. Goliath, 5,000–7,000 feet, February 1911 (A. S. Meek), 1 ♂, 1 ♀.

Perhaps nearest to *marginata* Warr., but larger, much less dark, the distal borders less narrow, differently shaped, etc.

15. *Geolyces jocata* sp.n.

♂, 44–52 mm. Generally smaller than *attesaria* Walk. (*List Lep. Ins.* xx. 249). Termen of forewing less strongly protuberant at R^1 , that of hindwing scarcely bent at R^2 ; colour much warmer, ochreous instead of pale buff; forewing with the oblique outer line always strong, tawny-ochraceous or mixed with grey, subapical white mark narrowed, median line beneath at hindmargin rather more divergent from postmedian (oblique rather than vertical), strong to M^2 or just across it, then obsolete.

Ivory Coast: Bingerville, December 1913, June and August 1915 (G. Melou), 9 ♂♂, including the type. Gold Coast: Sekondi, 1 ♂. Nigeria: 2 ♂♂ (1 Degama, April 23, 1902, Anson). Gaboon: Lake Asebbe, Fernan Vaz, February 1908 (Anson), 1 ♂.

As I can find no structural difference except in shape, I should have regarded this as a race of *attesaria* (Congo to S. Nigeria) but for the overlapping of their range. The Tring Museum has a ♂ *attesaria* taken at Degama on May 24, 1902, only a month after the *jocata*.

16. *Mesothisa ozola* sp.n.

♂, 26–28 mm.; ♀, 32 mm. Head and body whitish, clouded in places with light brown. Face light brown, except at edges. Palpus over $1\frac{1}{2}$, second joint rather stout, with compact scaling, third joint moderate, distinct. Antennal pectinations very long, especially in the ♂; only a few joints at apex not pectinate.

Forewing markedly narrower than in typical *Mesothisa*, the termen with a rounded prominence in middle in place of the small but definite tooth at R^3 , in shape recalling a rather broad *Ozola*, the colouring and markings accentuating the suggestion; ♂ with a well-developed circular fovea; cell over $\frac{1}{2}$; subcostal venation variable in detail, the long stalk of $CS^{1,2}$ either connate with $SC^{3,5}$ or stalked, often long-stalked, the stalk generally anastomosing with C, but sometimes connected; whitish, irrorated with light brown; a light brown, distally fuscous-mixed cloud between R^3 and M^2 from their base to well beyond the postmedian; a weaker cloud at terminal concavity, accompanied proximally by a more or less developed pair of small spots between the radials; antemedian line straightish, oblique inward; median shade generally rather strong, slightly excurved about the cell-mark, more or less coalescing with it, slightly incurved just behind middle; postmedian moderately excurved anteriorly, very faintly incurved between this and hindmargin; fringe rather darker and with still darker dots at vein-ends.—*Hindwing* correspondingly narrowed, the tooth at R^3 short; concolorous with forewing; first line wanting; median and postmedian continued, more proximal, straighter, the postmedian with a second (often weaker) line distally, arising with it at costa, gradually diverging, bent at R^2 , thence approximately parallel with it, the interspace clouded with brown; a sinuous subterminal line, dark-marked at radial fold; ill-defined terminal clouding.

Underside similarly marked, generally rather more ochreous, with less pronounced cloudings; hindwing with the outer postmedian line stronger than the inner.

Madagascar: Diego Suarez, June, 1 ♂, July–September, many ♂♂ and 2 ♀♀ (G. Melou).

As Warren indicates (Nov. Zool. xii. 404), there is no defined fovea in his type species, but *gracililinea* Warr. (*loc. cit.*) shows a rudimentary one.

17. *Tephрина triseriata* sp.n.

♂, 27–32 mm.; ♀, 33 mm. Face rather smooth; brown, narrowly whitish on lower edge. Palpus $1\frac{1}{2}$; light brown, mixed on outside with fuscous. Fillet whitish; crown brown. Antennal shaft moderately stout, pale brown; pectinations scarcely over 1. Thorax and abdomen concolorous with wings, the thorax above with the violet-grey shade preponderating. Hindtibia in ♂ rather stout, with all the spurs more or less long; apparently without hair-pencil. No abdominal spine.

Forewing moderately broad, apex rather rounded, termen faintly sinuous, little oblique anteriorly, more so behind the faintly prominent curve about R^3 ; $SC^{1,2}$ coincident; mottled pale violet-grey and whitish buff, with sparse brown irroration; cell-dot slightly elongate, black mixed with brown; lines light brown, rather bright; antemedian very oblique outward from costa, sharply outbent in cell, slightly incurved between M and SM^2 ; median right-angled before R^3 a little beyond cell-dot, then straightish to about middle of hindmargin; postmedian subparallel, rather more bluntly bent before R^1 , becoming thinner and weaker, but marked with elongate black spots across R^3 , M^1 , M^2 , and SM^2 ; a second series of black spots outside these, cut by pale buff veins; a third series beyond these latter, interneural, mixed with pale-buff; termen with interneural black dots or dashes.—*Hindwing* with termen rather full,

appreciably (though very slightly) bent in middle, making a transition to the section *Peridela* Warr.; cell-mark rounder than on forewing, first line wanting; median weak at costa, then rather thick, straightish, crossing or touching the cell-spot; outer markings as on forewing.

Underside pale, very densely suffused with partly confluent dark-grey strigulation; veins, and on forewing costal margin, more buff or ochreous; cell-spot on both wings round; median and postmedian lines generally traceable, at least on hindwing, where they are separated by an ill-defined paler area; terminal line ochreous-brown.

Tanganyika Territory: Lindi, 11 ♂♂, 1 ♀.

Nearly all the specimens are rubbed and were apparently badly handled in collecting, as very few legs remain. But the species is very distinct and is recognizable at once by the postmedian and succeeding markings.

18. *Tephрина perviaria delostina* subsp.n.

♂♀, 28–31 mm. Generally larger than *p. perviaria* Led. (= *albofascia* Swinh.), rather fuller-winged, the apex of the forewing appreciably more rounded. Coloration darker and more uniform, the proximal area of both wings being so strongly irrorated as to be often scarcely differentiable from the median shade and the distal area; median shade heavy, on forewing not appreciably broader posteriorly than anteriorly; cell-ring of forewing not or scarcely pale-centred, generally much obscured by the median shade on which it stands; white band between median and postmedian always sharply expressed; subterminal spot between R³ and M¹ on both wings more or less reduced.

Sumba, below 2,000 feet, February 1896 (W. Doherty), 10 ♂♂, 4 ♀♀. 4 ♂♂ collected on the same island in October 1891 (W. Doherty), the altitude not indicated, show some local or seasonal differentiation from the above, being smaller (24–27 mm.) and in all respects less extreme—intermediate towards the Indian forms, but still distinguishable by their darker coloration. The February series is very constant.

The ascertained range of this species is very extraordinary—Syria and Palestine, India and Ceylon, Sumba—and there must surely be many localities in which it has hitherto been overlooked. The Indian form (*albofascia* Swinh.) is very variable and has not yet been distinguished racially from the Syrian; but I have only seen 1 ♂ and 1 ♀ of the latter.

19. *Discalma subcurvaria araps* subsp.n.

Forewing with the brown shades rather deeper than in *s. subcurvaria* Mab. (*Ann. Soc. Ent. Fr.* lxi. 228, Upper Congo to E. Africa); median black shade essentially different, forming a half-moon from hindmargin to hind angle of cell, its strongly rounded proximal side almost touching the antemedian, its distal side almost straight, very faintly curved in the same direction as its proximal; postmedian rather thick, slightly more curved than in *s. subcurvaria*.

S. Arabia (G. W. Bury), type ♀ in coll. Tring Mus. S. W. Arabia: El Kabar, Amiri Country (G. W. Bury), 1 ♀ in coll. Brit. Mus. A very similar but slightly intermediate form (? race) from Ketchiba, Arussi, Abyssinia, September 26, 1905 (Ph. C. Zaphiro, Lake Rudolph Expedition), 1 ♀, is also in coll. Brit. Mus.

20. *Heterodisca flammea chionosticta* subsp.n.

♂♀, 37–40 mm. On an average larger than the *f. flammea* Warr. (1907).¹ Wings slightly narrower.—*Forewing* with antemedian line straight, its snowy proximal dot on SM² enlarged.—*Hindwing*, especially in the ♂, much paler than in *f. flammea*, the cell-dot much reduced, the postmedian line on the upperside slight, subpunctiform, on the underside also slenderer than in the name-typical race.

Dutch New Guinea : Mt. Goliath, 5,000–7,000 feet, January and February 1911 (A. S. Meek), 9 ♂♂, 1 ♀. Two of the ♂♂ are of an aberration (also known in *f. flammea*, 1 ♂, Biagi) with a conspicuous snowy line outside the postmedian of the forewing instead of the usual minute vein-dots.

21. *Casbia isogramma* sp.n.

♂♀, 26–29 mm. Face with rough projecting scales, which lengthen below ; brown. Palpus more buff, at least proximally. Crown grey. Antennal pectinations of ♂ long. Thorax and abdomen above violet-grey, more or less mixed with bright brown ; beneath more buff.

Forewing with SC¹ anastomosing with C ; pale grey, with a slight tinge of blue or violet ; some scattered black strigulae, in part rather long ; lines bright tawny ochraceous, almost straight and equidistant, obsolete at costa, the median and postmedian broadened into bands, the postmedian slightly curved inward anteriorly ; a broader subterminal band of the same colour, with irregular projections on its distal side, at SC³–R² rather pronounced ; a slender, irregular terminal band, widening a little at apex ; terminal line double, the proximal whitish, the distal deep black, both fine ; fringe pinkish brown, with a very fine white line at base.—*Hindwing* with the markings continued, except the antemedian.

Underside buff, with fuscous cell-dots, postmedian (slightly curved) band and broader terminal band, on forewing not reaching hindmargin.

New Hanover, February 1923, 2 ♂♂, 3 ♀♀, loc. typ. New Ireland, December 1923, 1 ♀ (A. F. Eichhorn).

¹ Mr. Warren chose the only large ♂ and ♀ for his types, and even these do not measure "40 mm." but 38–39.



27 OCT 1926
PURCHASED



Fig. 1.
CORVUS TRISTIS.
♂ Dorey, British Museum.



Fig. 2.
CORVUS HAWAIENSIS.
♀ From a specimen in the
British Museum.



Fig. 3.
CORVUS FUSCICAPILLUS.
♂ From a specimen in the
British Museum.





Fig. 4.
CORVUS VALIDUS.
♂ ? *Batckian*.
B.M. Reg. No. 76.1.7.100



Fig. 5.
CORVUS ENCA PUSILLUS.
♂ *Mindoro*.
B.M. Reg. No. 96.6.6.15.



Fig. 6.
CORVUS ENCA COMPILATOR.
♂ *From a specimen in the
British Museum.*





Fig. 7.
CORVUS TYPICUS.
♀ *Macassar*.
B.M. Reg. No. 73.5.12.2000.



Fig. 8.
CORVUS UNICOLOR.
♂ ? *Sula Islands*.
Tring Museum.



Fig. 9.
CORVUS FLORENSIS.
♀ *Flores*. *Tring Museum.*



Fig. 10.
CORVUS KUBARYI.
♀ *Guam*.
B.M. Reg. No. 98.4.29.26.





Fig. 11.
CORVUS MEEKI.
♂ *Bougainville*.
B.M. Reg. No. 1909.2.18.8.



Fig. 12.
CORVUS W. WOODFORDI.
♀ *Guadalcanar*.
B.M. Reg. No. 88.2.7.47.



Fig. 13.
CORVUS MONEDULOIDES.
♂ *New Caledonia*.
B.M. Reg. No. 97.6.1.73.





Fig. 14.
CORVUS MONEDULA SPERMOLOGUS.
♂ Arran, Scotland.
B.M. Reg. No. 1912.1.7.1.



Fig. 15.
CORVUS CORONOIDES JAPONENSIS.
♂ Nagasaki, Japan.
B.M. Reg. No. 87.11.20.78.



Fig. 16.
CORVUS CORONOIDES INTERMEDIUS.
♀ Sindh, Himalayas.
B.M. Reg. No. 86.3.1.314.



Fig. 17.
CORVUS MEXICANUS OSSIFRAGUS.
♀ Washington, U.S.A.
B.M. Reg. No. 88.10.10.637.





Fig. 18.

CORVUS B. BRACHYRHYNCHOS.
♂ *Nova Scotia*.
B.M. Reg. No. 86.9.15.411.



Fig. 19.

CORVUS BRACHYRHYNCHOS CAURINUS.
♂ *Vancouver Island*.
B.M. Reg. No. 87.3.9.5.



Fig. 20.

CORVUS BRACHYRHYNCHOS PALMARUM.
♀ *San Domingo*.
B.M. Reg. No. 1923.10.24.1.



Fig. 21.

CORVUS C. CAPENSIS.
♂ *Klipfontein, Cape Colony*.
B.M. Reg. No. 1905.12.29.550.





Fig. 22
CORVUS F. FRUGILEGUS.
♂ Rome, Italy
B.M. Reg. No. 1905.6.23.872



Fig. 23.
CORVUS F. PASTINATOR.
♂ ? Irkutsk, Siberia.
B.M. Reg. No. 75.3.15.4.



Fig. 24.
CORVUS LUCOGNAPHALUS.
♂ Porto Rico.
B.M. Reg. No. 1905.6.28.873



Fig. 25.
CORVUS NASICUS
♀ Cuba
Meyertzhagen Coll.





Fig. 26.

CORVUS JAMAICENSIS.

♂ *Jamaica.*

B.M. Reg. No. 12.19.29.48.



Fig. 27.

CORVUS RHIPIDURUS.

♂ *Erkowit, Suakin.*

B.M. Reg. No. 1915.12.24.520



Fig. 28.

CORVUS CRASSIROSTRIS.

♂ *Abyssinia.*

B.M. Reg. No. 61.5.8.55.





Fig. 29.
CORVUS ALBICOLLIS.
? Orange River Colony.
B.M. Reg. No. 1904.4.1.2.



Fig. 30.
CORVUS CRYPTOLEUCUS.
? Mexico.
B.M. Reg. No. 90.5.30.11.



Fig. 31.
CORVUS CORAX CORAX.
? Trebizond, Asia Minor.
B.M. Reg. No. 1909.11.18.31.





Fig. 32.
CORVUS CORAX TINGITANUS.
♀ *Tanjur.*
B.M. Reg. No. 1905.6.28.857.



Fig. 33.
CORVUS CORAX LAURENCI.
♂ *Sambhur, Rajputana.*
B.M. Reg. No. 86.3.1.63



Fig. 34.
CORVUS CORAX RUFICOLLIS.
♂ *Jerusalem.*
B.M. Reg. No. 1905.6.28.860.





Fig. 35.
CORVUS CORAX EDITHAE.
♂ Sheek, Somaliland
B.M. Reg. No. 1918.6.6.20.



Fig. 36.
CORVUS SPLENDENS SPLENDENS
♂ Rajputana, India.
Meinertzhagen Coll.



Fig. 37
CORVUS CORNIX CORNIX.
♂ Suffolk, England.
B.M. Reg. No. 1916.9.20.99





Fig. 38.

CORVUS CORONE ORIENTALIS.
♂ *Kurram Valley, N.W. India.*
B.M. Reg. No. 1908.11.10.24.



Fig. 39.

CORVUS TORQUATUS.
♀ *Foochow, China.*
B.M. Reg. No. 1902.8.5.72.



Fig. 40.

CORVUS ALBUS.
♀ *Manda Island, Kenya Colony.*
B.M. Reg. No. 87.11.3.16.



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ON THE AVIFAUNA OF YUNNAN, WITH CRITICAL NOTES.

BY LORD ROTHSCHILD, F.R.S.

THIS is my fifth and concluding article on Yunnan birds, and I include in it not only the list of Forrest's 1925 collection, but also all the records I have been able to find in the literature and the unlisted specimens in the British Museum. The records from the literature have been taken from the following books and periodicals :

(1) *Anatomical and Zoological Researches, comprising the results of the two expeditions to Western Yunnan, 1868 and 1875* (published 1878), by Dr. John Anderson.

(2) "Note sur les Oiseaux recueillis dans le Yunnan par le Prince Henri d'Orleans," par M. E. Oustalet, in *Bulletin du Muséum d'Histoire Naturelle*, vol. ii, 1896, Paris.

(3) "Description de deux espèces nouvelles d'Oiseaux du Yunnan," par M. E. Oustalet, in *Bulletin du Muséum d'Histoire Naturelle*, vol. iii, 1897, Paris.

(4) "Notes sur quelques Oiseaux de la Chine occidentale," par M. E. Oustalet, in *Bulletin du Muséum d'Histoire Naturelle*, vol. iv, 1898, Paris.

(5) "Revision de quelques Espèces d'Oiseaux de la Chine Occidentale et Meridionale," par M. E. Oustalet, in *Nouvelles Archives du Muséum d'Histoire Naturelle*, Quatrième Série, Tome Troisième, 1901, Paris.

(6) "On the Birds collected by Captain A. W. S. Wingate in South China," by W. R. Ogilvie-Grant, in the *Ibis*, vol. vi, seventh series, 1900.

(7) "The Birds of Yunnan," by Collingwood Ingram, in *NOVITATES ZOOLOGICAE*, vol. xix, 1912.

(8) "Notes on a collection of Birds from Yunnan," by Outram Bangs and John C. Phillips, in *Bulletin of the Museum of Comparative Zoology, Harvard College*, vol. lviii, 1914, Cambridge, Mass., U.S.A.

(9) "Some New Additions to the Avifauna of Yunnan," by Seinosuké Uchida and Nagamichi Kuroda, in *Annotationes Zoologicae Japonensis*, vol. ix, pt. ii, 1916.

(10) "A collection of Birds from Tonkin," by Nagamichi Kuroda, in *Annotationes Zoologicae Japonensis*, vol. ix, pt. iii, 1917.

(11) "Etude d'une collection d'Oiseaux recueilli par M. Albert Pichon au Yunnan Occidental," par A. Menegaux & R. Didier, in *Revue Française d'Ornithologie*, vol. iii, 1913 and 1914.

(12) "Etude d'une collection d'Oiseaux montés et en peau faite par

M. & Mme. Comby au Yunnan," par MM. A. Menegaux & R. Didier, in *Bulletin du Muséum National d'Histoire Naturelle*, vol. xix, 1913.

(13) "On a collection of Birds from West-Central and North-Western Yunnan," by Lord Rothschild, in *NOVITATES ZOOLOGICAE*, vol. xxviii, 1921.

(14) "On a second collection of Birds sent by Mr. George Forrest from N.W. Yunnan," by Lord Rothschild, in *NOVITATES ZOOLOGICAE*, vol. xxx, 1923.

(15) "On a third collection of Birds made by Mr. George Forrest in N.W. Yunnan," by Lord Rothschild, in *NOVITATES ZOOLOGICAE*, vol. xxx, 1923.

(16) "The Birds of the American Museum of Natural History's Asiatic Zoological Expedition of 1916-1917," by Outram Bangs, in *Bulletin of the American Museum of Natural History*, vol. xlv, 1921.

(17) "On the Birds of South-East Yunnan, S.W. China," by J. D. La Touche, in the *Ibis*, vols. v and vi of the 11th series, 1923 and 1924.

(18) "On a fourth collection made by Mr. George Forrest in N.W. Yunnan," by Lord Rothschild, in *NOVITATES ZOOLOGICAE*, vol. xxxii, 1925.

In addition to these special articles, a number of records have been extracted from *A Monograph of the Pheasants*, by William Beebe, *The Bulletin of the British Ornithologists Club*, and other ornithological works. The Avifauna of Yunnan is a decided mixture of palæarctic and tropical forms, and the tropical forms again consist of a mixture of Chinese, Himalayan, and Indo-Malayan species. This was to be expected, for Yunnan lies in the direct line of migration of those birds from Siberia, Turkestan, and N. China, which winter in the Indo-Chinese and Indo-Malayan Region; on the other hand there is such a varied range of country and climate in our area that in the high mountains of the North-West we encounter a mixture of breeding birds consisting both of Himalayan forms and some of a more decided Palæarctic character. Among the tropical residents we find Indian, Chinese, Burmese, and Malayan forms, while it is certain that the mountain-breeding species wander in winter into the lower valleys and plains. In the open plains or lower hilly areas of South-East Yunnan there are a large number of forms, both resident and migratory, which are not found in the West and N.W. of Yunnan, and vice versa. As a rule, where more than two subspecies of one species occur together in Yunnan, it is mostly in the Eastern portion, the Tengyueh-Lichiang area only having one subspecies. In the West we again find a number of forms closely allied to, or identical with, species occurring in Burma and Indo-China, but taking Yunnan as a whole, after eliminating the migrants, the avifauna is much more decidedly Himalayan in its character than Burmese or Indo-Malayan. In many cases, where one form only of a bird with several geographical races occurs in Yunnan, it is the Himalayan and not the Burmese or Indo-Malayan form we find, viz. in the case of *Ianthocincla leucolophus* we have in Yunnan the Himalayan *leucolophus leucolophus*, NOT the Burmese *leucolophus belangeri* or the Shan States-Malayan *leucolophus diardi*. Again, we find of the little yellow Babbler-Shrikes *Pteruthius melanotis* and *aenobarbus* that *melanotis melanotis* of the Himalayas occurs in Yunnan, and NOT either *melanotis tahanensis* of the Malay Peninsula or *aenobarbus intermedius* of the Shan States. A large part of Central and N.E. Yunnan is quite unexplored, and I believe a good many more birds remain to be found, but those from the N.E. are more likely to be purely Chinese forms, while those from Central Yunnan will most likely be either Tonkinese or else the same as those of S. East Yunnan.

I have been unable in several instances to give the full number of species and specimens because the authors have not recorded them; the following are the principal omissions: Oustalet gives the number of species collected in Yunnan by Prince Henri d'Orleans as 121, but only enumerates the 90 not recorded by Anderson. Again, Uchida & Kuroda state that the collection they examined contained 146 species, but only enumerate 46 which had not been recorded by Ingram. Lastly, Riley has described 2 birds (8 specimens) out of a collection of many hundreds (the collector's label number of the type of *Ithaginis rocki* is 1351), made by Dr. J. F. Rock in North-West Yunnan.

At the end of my list I am adding a list of 17 species and subspecies recorded by Kuroda, from Lao-kay in Tonkin, on the banks of Red River, only separated from Hokow Yunnan by the breadth of the river, and which must sooner or later be found in Yunnan proper.

The two collections from Mengtshz, Loukouchai, etc., enumerated respectively by Bangs & Phillips, and Uchida & Kuroda, formed part of one large collection with those enumerated by Collingwood Ingram, made by a Japanese collector for the late Alan Owston of Yokohama.

Here follow the lists of the species and subspecies added to the Yunnan avifauna by the principal explorers.

Dr. John Anderson obtained the following birds :

- Psittacula cyanocephala* (Linn.).
- Falco subbuteo streichi* Hart. & Neum.
- Falco tinnunculus interstinctus* (McClell.).
- Elanus caeruleus caeruleus* (Desf.).
- Circus melanoleucus* (Forst.).
- Milvus migrans govinda* Sykes.
- Bubo bubo jarlandi* La Touche.
- Alcedo atthis bengalensis* Gm.
- Coracias indicus affinis* McClell.
- Merops orientalis orientalis* Lath.
- Cyanops asiatica asiatica* (Lath.).
- Picus canus sordidior* (Ripp.).
- Picus vittatus myrmecophoneus* Stresem.
- Dryobates semicoronatus obscurus* La Touche.
- Cuculus canorus telephonus* Heine.
- Cacomantis merulinus querulus* Heine.
- Surniculus lugubris dicruroides* (Hodgs.).
- Caprimulgus indicus jotaka* Temm. & Schleg.
- Corvus macrorhynchus levaillanti* Less.
- Pica pica serica* Gould.
- Urocissa erythrorhyncha magnirostris* Blyth.
- Aethiopsar grandis* (Moore).
- Gracupica nigricollis* (Payk.).
- Sturnia malabarica* (Gm.).
- Munia atricapilla atricapilla* (Vieill.).
- Munia punctulata topela* Swinh.
- Sporaeginthus amandava flaviventris* (Wall.).
- Passer montanus montanus* (Linn.).

- Passer rutilans intensior* Rothsch.
Emberiza fucata arcuata Sharpe.
Emberiza pusilla Pall.
Melophus melanicterus (Gm.).
Alauda arvensis coelivox Swinh.
Anthus richardi richardi Vieill.
Anthus richardi rufulus Vieill.
Anthus hodgsoni yunnanensis Uch. & Kur.
Motacilla flava thunbergi Billb.
Motacilla alba maderaspatensis Gm.
Copsychus saularis saularis (Linn.).
Luscinia pectoralis pectoralis (Gould).
Oreicola ferrea haringtoni Hart.
Saxicola caprata caprata (Linn.).
Saxicola torquata indica (Blyth).
Muscicapa saphira (Blyth).
Muscicapa banyumas dialilaema (Salvad.).
Muscicapa tickelliae whitei (Har.).
Muscicapa strophciata (Hodgs.).
Muscicapa thalassina thalassina (Swains.).
Turdinulus brevicaudatus brevicaudatus (Blyth).
Phylloscopus fuscatus (Blyth).
Phylloscopus affinis (Tiek.).
Phylloscopus inornatus inornatus (Blyth).
Phylloscopus lugubris (Blyth).
Phylloscopus trochiloides trochiloides (Sundev.).
Abrornis superciliaris Tick.
Ianthocincla sannio (Swinh.).
Ixops nipalensis nipalensis (Hodgs.).
Actinodura egertoni ripponi O.-Grant.
Pteruthius aeralatus ricketti O.-Grant.
Leiothrix luteus yunnanensis Rothsch.
Mesia argenteauris Hodgs.
Siva cyanuroptera wingatei O.-Grant.
Erpornis xantholeuca xantholeuca Hodgs.
Zosterops palpebrosa elwesi Baker.
Zosterops simplex simplex Swinh.
Parus major commixtus Swinh.
Sitta frontalis corallina (Hodgs.).
Pomatorhinus ruficollis similis Rothsch.
Pomatorhinus erythrogeus ferrugilatus Hodgs.
Stachyris nigriceps nigriceps Hodgs.
Stachyris chrysaea Hodgs.
Paradoxornis ruficeps atrosuperciliosus Godw.-Aust.
Paradoxornis brunnea (Anders.).
Prinia inornata exater Thay. & Bangs.
Franklinia gracilis (Frankl.).
Cisticola exilis tytleri Blyth.
Suya crinigera yunnanensis Har.

- Suya superciliaris* Anders.
Lanius nigriceps nigriceps (Frankl.).
Lanius cristatus cristatus Linn.
Hemipus picatus capitalis (McClell.).
Pericrocotus elegans (McClell.).
Pericrocotus brevirostris affinis (McClell.).
Pericrocotus roseus (Vicill.).
Hirundo rustica tytleri Jerd.
Bhringa remifer (Temm.).
Chaptia aenea (Vicill.).
Dicrurus ater cathaecus Swinh.
Dicrurus leucophaeus longicaudatus A. Hay.
Rhipidura albifrontata Frankl.
Rhipidura albicollis albicollis (Vicill.).
Microscelis leucocephala form. dimorph. *yunnanensis* (Anders.).
Hemixus flavala Hodgs.
Otocompsa emeria emeria (Linn.).
Motpastes nigripileus (Blyth).
Pycnonotus xanthoroux xanthoroux Anders.
Xanthixus flavescens (Blyth).
Aethopyga dabryi dabryi (Verr.).
Streptopelia chinensis forresti Rothsch.
Streptopelia orientalis orientalis (Lath.).
Streptopelia orientalis agricola (Tieck.).
Gallus gallus robinsoni Rothsch.
Thaumalea amherstiae (Leadb.).
Phasianus colchicus elegans Elliot.
Bambusicola fytchii fytchii Anders.
Turnix pugnax taigoor Sykes.
Hoplopterus ventralis (Wagl.).
Charadrius dubius dubius Scop.
Rostratula benghalensis benghalensis (Linn.).
Ixobrychus cinnamomeus (Gm.).
Bubulcus ibis coromandus (Bodd.).
Porzana fusca erythrothorax (Temm. & Schleg.).
Hypotaenidia striata jouyi Stejn.
Gallinula chloropus parvifrons Blyth.
Antigone antigone antigone (Linn.).
Sterna melanogaster Temm.
Phalacrocorax javanicus Steph.
Podiceps ruficollis poggei (Reichw.).

From this it is seen that Dr. Anderson, who made the first ornithological collections in Yunnan, obtained 120 species and subspecies.

The following were added to the Yunnan list by Professor Oustalet from the collections of Prince Henri d'Orleans and M. Bonvalot :

- Psittacula derbyana* (Fraser).
Accipiter nisus melanoschistus Hume.
Falco tinnunculus japonicus (Temm. & Schleg.).

- Glaucidium brodiei* (Burton).
Cyanops asiatica davisoni (Hume).
Picus canus guerini (Malh.).
Dryobates hyperythrus hyperythrus (Vig.).
Lynx torquilla japonica (Temm. & Schleg.).
Cuculus poliocephalus poliocephalus Lath.
Upupa epops orientalis Baker.
Aethopyga siparaja viridicauda Rothsch.
Dicaeum ignipectus ignipectus (Blyth).
Chloropsis aurifrons (Temm.).
Turdus castaneus gouldi (Verr.).
Turdus ruficollis ruficollis Pall.
Turdus pallidus (Gm.).
Monticola solitarius pundoo (Sykes).
Phoenicurus auroreus leucopterus Blyth.
Phoenicurus frontalis frontalis Vig.
Chaimarrornis fuliginosa fuliginosa Vig.
Tarsiger rufilatus practicus Bangs & Phill.
Orthotomus sutorius longicaudus (Gm.).
Heteroxenicus cruralis cruralis (Blyth).
Notodela leucura leucura (Hodgs.).
Franklinia gracilis (Frankl.).
Phylloscopus lugubris (Blyth).
Phylloscopus proregulus forresti (Rothsch.).
Abrornis albogularis fulvifascies Swinh.
Myophonus temmincki eugeniae Hume.
Ianthocincla albogularis albogularis Gould.
Ianthocincla pectoralis pectoralis Gould.
Ianthocincla lanceolata lanceolata (Verr.).
Ianthocincla ellioti ellioti (Verr.).
Ianthocincla squamata Gould.
Pomatorhinus maclellandi odicus Bangs & Phill.
Conostoma aemodium bambuseti Stresem.
Otocompsa flaviventris flaviventris (Tick.).
Criniger gularis henrici Oust.
Leioptila pulchella coeruleotincta Rothsch.
Leioptila desgodinsi (Dav. & Oust.).
Pycotrkis siuensis sinensis (Gm.).
Mixornis rubricapilla rubricapilla (Tick.).
Yuhina flavicollis rouxi (Oust.).
Yuhina diademata ampelina Ripp.
Yuhina gularis griscotincta Rothsch.
Staphidia torqucola (Swinh.).
Fulvetta vinipectus bieti (Oust.).
Alcippe poiocephala phayrei Blyth.
Siva strigula yunnanensis Rothsch.
Leiothrix luteus yunnanensis Rothsch.
Cutia nipalensis nipalensis Hodgs.
Troglodytes troglodytes tulifuensis Sharpe.

Sitta europaea nebulosa La Touche.
Sitta canadensis villosa Verr.
Certhia himalayensis yunnanensis Sharpe.
Parus major commixtus Swinh.
Parus monticolus yunnanensis La Touche.
Parus dichrous wellsii Baker.
Parus ater aemodius Hodgs.
Parus rex (Dav.).
Aegithaliscus concinnus talifuensis Ripp.
Aegithaliscus bonvaloti (Oust.).
Pteruthius rufiventris Blyth.
Oriolus trailli (Vig.).
Graucalus macei siamensis Baker.
Muscicapa latirostris (Raffl.).
Muscicapa blythi blythi Rothsch.
Chelidorynx hypoxantha (Blyth).
Culicicapa ceylonensis (Swains.).
Cryptolopha burkei tephrocephalus (Anders.).
Niltava sundara sundara Hodgs.
Motacilla alba hodgsoni Blyth.
Microcichla scouleri (Vig.).
Emberiza spodocephala spodocephala Pall.
Perissospiza icteroides affinis (Blyth).
Carduelis ambiguus (Oust.).
Passer rutilans intensior Rothsch.
Munia striata acuticauda Hodgs.
Dendrocitta formosae himalayensis Blyth.
Columba leuconota Vig.
Columba hodgsoni Vig.
Sphenocercus sphenurus yunnanensis La Touche.
Ithaginis cruentus kuseri Beebe.
Tragopan temmincki (Gray).
Pucrasia meyeri Mad.
Gennaeus andersoni Elliot.
Amaurornis phoenicura chinensis (Bodd.).
Tringa hypoleucus Linn.
Charadrius dominicus fulvus (Gm.).

Of these 90 species and subspecies Professor Oustalet described the following three for the first time :

Criniger tephrogenys henrici Oust.
Yuhina flavicollis rouxi (Oust.).
Carduelis ambiguus (Oust.).

Oustalet added besides this list the following 3 species to the Yunnan avifauna, from the collections of the Rev. Father Soulie :

Spelaeornis souliei Oust.
Ianthocinclu cineracea styani Oust.
Ianthocinclu bicti Oust.

Actinodura souliei Oust.
Fulvetta genestieri Oust.
Yuhina nigrimentum intermedia Rothsch.
Parus palustris dejeani Oust.
Cephalopyrus flamiceps olivaceus Rothsch.

The first 7 of these were described for the first time by Professor Oustalet.

Captain Wingate's collection, which was made in 1899 on his journey from Shanghai to Bhâmo, and was described by Mr. Ogilvie-Grant in the *Ibis* for 1900, contained 110 specimens collected in Yunnan, of 87 species, of which the following 46 species were new to the Yunnan list :

Chibia hottentotta hottentotta (Linn.).
Dicrurus leucophaeus nigrescens Oates.
Acridotheres tristis (Linn.).
Oriolus indicus tenuirostris Blyth.
Sporacginthus amandava (Linn.).
Eophona migratoria harterti La Touche.
Emberiza elegans Temm.
Melaphus melanicterus (Gm.).
Motacilla boarula melanope Pall.
Sitta yunnanensis O.-Grant.
Sitta magna Wardl.-Rams.
Aethopyga sanguinipectus Wald.
Parus major minor Temm. & Schleg.
Lanius schach tephronotus (Vig.).
Lanius collyrioides siamensis Gyldenst.
Megalurus palustris andrewsi Thay. & Bangs.
Franklinia gracilis (Frankl.).
Monticola solitarius pandoo (Sykes).
Enicurus sinensis Gould.
Ianthocincla leucolophus leucolophus (Hardw.).
Paradoxornis webbiana styani Ripp.
Fulvetta virepectus bieti (Oust.).
Siva strigula yunnanensis (Rothsch.).
Chloropsis hardwickii Jard. & Selby.
Molpastes atricapillus (Vieill.).
Muscicapa blythi blythi Rothsch.
Riparia rupestris (Scop.).
Dryobates major stresemanni Rensch
Dryobates atratus (Blyth).
Chalcococcyx maculatus Gm.
Centropus sinensis sinensis (Steph.).
Melittophagus leschenaulti swinhoii (Hume).
Psittacula fasciata (P. L. S. Müll.).
Circus cyaneus (Linn.).
Buteo plumipes (Hodgs.).
Falco tinnunculus interstinctus (McClell.).
Grauphcephalus darisoni (Hume).
Ciconia nigra (Linn.).

Megalornis grus (Linn.).
Megalornis nigricollis (Prjev.).
Ardeola bacchus (Bp.).
Microsarcops cinereus (Blyth).
Capella gallinago gallinago (Linn.).
Ducula badia (Raffl.).
Francolinus pintadeanus playrei Blyth.
Gennaeus nycthemerus nycthemerus (Linn.).

Mr. Ogilvie-Grant described the form of *Siva cyanuroptera* from Yunnan as new out of Captain Wingate's collection as *Siva wingatei*, and it must stand as *Siva cyanuroptera wingatei* O.-Grant, but Captain Wingate was not the first to collect *Siva cyanuroptera* in Yunnan.

Colonel Rippon, among his large collections, had the following 65 species new to the Yunnan list :

Porzana bicolor Wald.
Larus gelastes Thienem.
Sarcogrammus indicus atronuchalis (Blyth).
Tringa ochropus Linn.
Capella solitaria (Hodgs.).
Anas platyrhyncha platyrhyncha Linn.
Mergus merganser merganser Linn.
Glaucidium brodiei (Burton).
Eudynamis scolopaceus malayana Cab. & Heine.
 **Picus canus sordidior* (Ripp.).
Dryobates pernyi pernyi (Verr.).
Muscicapa tricolor tricolor Hodgs.
Culicicapa ceylonensis (Swains.).
 **Abrornis schisticeps ripponi* Sharpe.
Ianthocincla affinis oustaleti Hart.
Ianthocincla maxima (Verr.).
Alci ppe nipalensis yunnanensis Har.
 **Fulvetta ruficapillus sordidior* (Ripp.).
Stachyridopsis ruficeps bhamoensis Har.
 **Yuhina gularis yangpiensis* Sharpe.
Pteruthius xanthochloris pallidus Dav.
 **Suthora webbiana styani* (Ripp.).
Cinclus pallasi souliei Oust.
Turdus mollissimus mollissimus Blyth.
Turdus dauma aureus Hol.
Turdus euonius Temm.
Monticola erythrogaster (Vig.).
Iole macclellandi similis Rothseh.
Prunella immaculata (Hodgs.).
 **Prunella collaris ripponi* Hart.
Prunella strophciata multistriata (Dav.).
Chaimarrornis leucocephala (Vig.).
Phoenicurus ochrurus rufiventris (Vicill.)
Phoenicurus aureus leucopterus (Blyth).

- Phoenicurus hodgsoni* (Moore).
Phoenicurus schisticeps (Gray).
Tarsiger cyanurus (Pall.).
Herbivocula schwarzi (Radde).
Phylloscopus pulcher Blyth.
Phylloscopus maculipennis debilis (Thay. & Bangs).
 **Parus rufonuchalis poecilopsis* Sharpe.
Aegithalus caudatus glaucogularis Gould.
 **Regulus regulus yunnanensis* (Ripp.).
 **Certhia familiaris khamensis* Sharpe.
Tichodroma muraria (Linn.).
Zosterops erythropleura erythropleura Swinh.
Aethopyga ignicauda erultans Baker.
Motacilla alba leucopsis Gould.
Atauda arvensis japonica Temm. & Schleg.
Mycerobas carnipes (Hodgs.).
Erythrina pulcherrima (Moore).
 **Erythrina ripponi* (Sharpe).
Erythrina vinacea (Verr.).
Erythrina erythrina rosceatus (Hodgs.).
 **Erythrina thura feminima* (Ripp.).
Pyrrhula erithaca altera Ripp.
Propyrrhula subhimachala intensior Rothsch.
Emberiza fucata arcuata Sharpe.
 **Emberiza cia yunnanensis* Sharpe.
Coloeus dauricus Pall. (form. dimorph. *neglectus* (Schleg.)).
 **Nucifraga caryocatactes yunnanensis* Ingr.
Urocissa erythrorynchu occipitalis (Blyth).
Garrulus bispecularis sinensis Swinh.
Pyrrhocorax graculus (Linn.).

Of the above 64 species and subspecies the 13 marked with an * were described from Colonel Rippon's collections for the first time by him, Dr. Sharpe, Dr. Hartert, and Mr. C. Ingram.

Mr. Collingwood Ingram records the following 31 species and subspecies for the first time for the Yunnan avifauna :

- Onopopelia tranquebarica humilis* (Temm.).
Turtur chinensis vacillans Hart.
Porzana pusilla auricularis (Reichw.).
Tringa erythropus (Pall.).
Butorides striatus javanica (Horsf.).
Ixobrychus sinensis (Gm.).
Otus bakhamoena glabripes (Swinh.).
Upupa epops saturata Lönnb.
Caprimulgus monticola Frankl.
Micropus affinis subfurcatus (Blyth).
Cuculus optatus Gould.
Picumnus innominatus chinensis (Hargitt.).
Hirundo rustica gutturalis Scop.

Muscicapa narcissina xanthopygia (Hay).
Terpsiphone paradisi affinis (Blyth).
Lalage melaschistos arvensis (Blyth).
Spizixus canifrons Blyth.
Ianthocincla canora namiensis La Touche.
Turdus dissimilis yunnanensis La Touche.
Turdus merula mandarinus (Bp.).
Copsychus saularis saularis (Linn.).
Phragmaticola aedon (Pall.).
Phylloscopus borealis borealis (Blas.).
Phyllergates coronatus (Jerd. & Blyth).
Dendronanthus indicus (Gm.).
Alauda arvensis coelivox Swinh.
Emberiza aurcola Pall.
Sturnia nemoricola Jerd.
Aethiopsar cristatellus (Gm.).
Oriolus indicus indicus Jerd.

Dr. Hartert subsequently described the *Streptopelia chinensis* recorded by Ingram as *S. c. vacillans*.

Messrs. Outram Bangs & J. C. Phillips gave an account of the larger portion of the collection, of which the smallest part was worked out by Ingram, and they add to the Yunnan list as follows :

**Arbor ophila rufogularis euroa* Bangs & Phillips.
Hydrochelidon leucopareia swinhoii Math.
Tringa nebularia (Gunn).
Charadrius dubius jerdoni (Legge).
Terekia cinerea (Güld.).
Erolia subminuta (Midd.).
Limosa limosa melanuroides Gould.
Capella gallinago raddei (But.).
Capella strenua (Bp.).
Glarcola maldirarum (Forst.).
Ibis melanocephalus (Lath.).
Pseudotantalus leucocephalus (Gm.).
Nycticorax nycticorax nycticorax (Linn.).
Circus aeruginosus aeruginosus (Linn.).
Circus spilonotus Kaup.
Accipiter trivirgatus rufitinctus (McClell.).
Otus malayana (Hay).
Ninox scutulata burmanica Hume.
Anas crecca crecca (Linn.).
Eurystomus orientalis calonyx Sharpe.
Halcyon pileatus (Bodd.).
Caprimulgus macrurus ambiguus Hart.
Cuculus sparverioides Vig.
Cuculus canorus bakcri Hart.
Cyanops franklini (Blyth).
Sasia ochracea Hodgs.

- Hirundo daurica striolata*.
Muscicapa rubeculoides glaucicomans Thay. & Bangs.
Niltava davidi La Touche.
 **Niltava sundara denotata* Bangs & Phill.
Muscicapa mutui Lay.
Muscicapa cyanomelaena cyanomelaena Temm.
Muscicapa parva albicilla (Pall.).
Muscicapa mugimaki Temm.
Muscicapa cyanomelaena cyanomelaena Temm.
Hypothemis azurca styani (Hartl.).
Terpsiphone incei (Gould).
Phylloscopus trivirgata ricketti Slat.
 **Pericrocotus brevirostris ethelodus* Bangs & Phill.
Pericrocotus cantonensis Swinh.
Alcurus striatus Blyth.
Spizixos semitorques Swinh.
Ianthocincla milnei sharpei (Ripp.).
Alcippe nipalensis schaefferi La Touche.
Myiophoneus coeruleus coeruleus (Scop.).
Heteroxenicus cruralis sinensis (Rick.).
 **Actinodura ramsayi yunnanensis* Bangs & Phill.
Pteruthius melanotis melanotis Hodgs.
Minla ignotincta mariae La Touche.
Paradoxornis guttaticollis Dav.
Paradoxornis webbiana webbiana (Gray).
Pnoepyga pusilla pusilla Hodgs.
Turdus obscurus Gm.
Acrocephalus arundinaceus orientalis Temm. & Schleg.
Enicurus schistaceus Hodgs.
Enicurus maculatus guttatus Gould.
Luscinia calliope calliope (Pall.).
Cisticola cisticola tintinnabulans (Swinh.).
Phylloscopus coronata (Temm.).
Horeites cantans canturians Swinh.
Horeites fortipes davidianus (Verr.).
Lanius schach schach (Linn.).
Lanius fuscatus Less.
Lanius cristatus superciliosus Lath.
Dicaeum minullum olivaceum Wald.
Arachnothera magna magna (Hodgs.).
Motacilla alba ocularis Swinh.
Motacilla citreola citreoloides Gould.
Oreocorys sylvanus Hodgs.
Loxia curvirostra himalayensis Blyth.
Emberiza rutila Pall.
Sturnia sericea (Gm.).
Dicrurus leucogenys leucogenys Wald.
Lalage melaschistos melaschistos (Hodgs.).

Those marked with an * are described for the first time ; total additions, 74.

Messrs. Uchida & Kuroda have expanded the Yunnan list by the following forms :

- Anthus cervinus* (Pall.).
Anthus striolatus Blyth.
Ianthocincla phoenicea wellsii La Touche.
Paradoxornis alphonsiana yunnanensis La Touche.
Criniger gularis pallidus Swinh.
Phylloscopus subviridis (Brooks).
Saya atrigularis Hodgs.
Hirundo daurica striolata (Temm. & Schleg.).

The total of Uchida & Kuroda's additions is 8.

Andrews & Heller contributed the following species and subspecies for the first time :

- Gennaeus nychthemerus ripponi* Sharpe.
Pavo muticus Linn.
Arborophila brunneipectus brunneipectus (Tick.).
Arborophila torqueola (Valenc.).
Turnix pugnax rostrata Swinh.
Spilornis cheela ricketti Selat.
Glaucidium cuculoides cuculoides Gould.
Rhopodytes tristis (Less.).
Centropus sinensis intermedius (Hume).
Dryocopus javensis feddeni (Blanf.).
Chrysocolaptes gutticristatus sultaneus Hodgs.
Serilophus lunatus elizabethae La Touche.
Pyrotrogon erythrocephalus erythrocephalus Gould.
Oreicola jerdoni Blyth.
Saxicola torquata prjevalskii (Pleske).
Turdus dissimilis Blyth.
 **Turdus mupinensis conquisitus* Bangs.
Ianthocincla chinensis chinensis (Scop.).
Ianthocincla erythrocephala woodi (Baker).
Yuhina occipitalis obscurior Rothsch.
Alcippe phacocephala magnirostris Wald.
Pellorneum ruficeps minus Hume.
Leioptila annectens annectens Blyth.
Staphidia striata Blyth.
Muscicapa banyumas whitei Har.
Pericrocotus speciosus speciosus (Lath.).
Pericrocotus yvettae Bangs.
Aegithina tiphia tiphia (Linn.).
Chloropsis icterocephala chlorocephala (Wald.).
Certhia discolor manipurensis Hume.
Aethopyga ignicauda exultans Baker.
Aethopyga nipalensis (Hodgs.).
Erythrina edwardsi edwardsi Verr.
Garrulus leucotis leucotis Hume.
Corvus splendens insolens Hume.

The total of this list is 35 ; the subspecies with an * is described for the first time.

M. Pichon increased the Yunnan list with the following 15 species :

Micropternus fokiensis Swinh.
Merops orientalis birmanus Neum.
Ardea cinerea jouyi Clark.
Pernis ellioti Jerd.
Milvus migrans govinda Sykes.
Accipiter badius poliopsis (Hume).
Aquila chrysaetus daphanca (Menzb.).
Torgos calvus (Scop.).
Falco naumanni (Fleisch.).
Glaucidium cuculoides whiteleyi (Blyth).
Asio flammeus flammeus (Pontopp.).
Hirundo daurica nipalensis Hodgs.
Myiophoneus coeruleus temmincki Vig.
Criniger gularis griseiceps Hume.
Anthocephalus pendulinus consobrinus Swinh.
Aethiopsar albocinctus Godw.-Aust. & Wald.

M. and Mme. Comby added 3 species to the Avifauna of Yunnan :

Lanius collurio kobylini (Buturl.).
Sitta europaea sinensis Verr.
Sturnia sinensis (Gm.).

Mr. William Beebe was the first to record for Yunnan :

Lophophorus sclateri Jerd. and
Ithaginis cruentus kuseri Beebe.

George Forrest has added to the Yunnan list in the collections made during 1918-1924, the following species and subspecies :

Crossoptilon crossoptilon crossoptilon (Hodgs.).
 **Ithaginis geoffroyi clarkei* Rothsch.
Tetraophasis szechenyi Mad.
Himantopus himantopus himantopus (Linn.).
Charadrius placidus Gray.
Phalacrocorax carbo sinensis Shaw & Nodd.
Nyroca fuligula (Linn.).
Butorides striatus amurensis Shrenck.
Pernis apivorus orientalis Tacz.
Accipiter gentilis schvedowi (Menzb.).
Accipiter gentilis khamensis (Bianchi).
Buteo buteo japonicus Temm. & Schleg.
Aquila nipalensis nipalensis Hodgs.
Strix aluco nivicola Blyth.
Centropus bengalensis bengalensis (Gm.).
Cuculus intermedius intermedius Vahl.
 **Dryocopus forresti* Rothsch.
Dryocopus martius khamensis (Butur.).
 **Dryobates semicoronatus omissus* Rothsch.
Dryobates darjellensis desmursi Verr.

- **Dryobates obscurior* Rothsch.
Ceryle rudis leucomelanura Reichenb.
Ceryle lugubris guttulata Stejn.
Psittacula schisticeps finschi (Hume).
Lyncornis cerviniceps Gould.
Collocalia fucifuga brevirostris (McClell.).
Pitta (Hydroornis) nipalensis (Hodgs.).
Tesia cyaniventer Hodgs.
Oligura castaneo-coronata (Burton).
Spelaornis kauriensis (Har.).
 **Pnoepyga squamata magnirostris* Rothsch.
Hodgsonius phoeniceuroides (Gray).
Luscinia brunnea (Hodgs.).
Luscinia davidi (Oust.).
Tarsiger chrysaeus Hodgs.
 **Tarsiger indicus yunnanensis* Rothsch.
Dendrobiastes hyperethra hyperethra (Blyth).
Monticola solitaria philippensis (P. L. S. Müll.).
Turdus naumanni Temm.
Turdus dauma dauma Lath.
Cochoa purpurea Hodgs.
Pomatorhinus erythrognis imberbis Salvad.
 **Ianthocincla subunicolor griseata* Rothsch.
 **Ianthocincla forresti* Rothsch.
 **Ianthocincla ocellata similis* Rothsch.
Stactocichla merulina merulina (Blyth).
 **Fulvetta chrysotis forresti* Rothsch.
 **Moupinia pocillotis sordidior* Rothsch.
Pseudominla castaneiceps castaneiceps (Hodgs.).
Suya parvirostris La Touche.
Luscinola thoracica (Blyth).
Horeites flavolivacea intricatus Hart.
Horeites acanthizoides acanthizoides (Verr.).
Horeites brunneifrons (Hodgs.).
Horeites major Moore.
Phylloscopus armandii (Milne-Edw.).
Phylloscopus occipitalis coronatus Temm. & Schleg.
Phylloscopus magnirostris (Blyth).
Cryptolopha castaneiceps castaneiceps (Gray).
Leioptila gracilis (McClell.).
 **Irops waldeni saturator* Rothsch.
Franklinia rufescens rufescens Blyth.
Muscicapa hodgsonii (Verr.).
Muscicapa vivida oatesi Salvad.
Muscicapa cinereiceps (Sharpe).
Niltava grandis grandis (Blyth).
Pericrocotus solaris solaris (Blyth).
Paradoxornis poliotis poliotis Blyth.
 **Paradoxornis webbiana ricketti* Rothsch.

Paradoxornis unicolor canaster Thay. & Bangs.
Parus spilonotus subviridis (Tick.).
Parus rufonuchalis beaveni (Jerd.).
Parus major tibetanus Hart.
Sitta himalayensis Jard. & Selby.
Pachyglossa melanozantha Blyth.
Aethopyga saturata Hodgs.
Motacilla alba baicalensis Swinh.
Motacilla flava simillima Hart.
Alauda arvensis intermedia Swinh.
Emberiza fucata fucata Pall.
Montifringilla nemoricola nemoricola (Hodgs.).
Fringilla montifringilla Linn.
Procarduelis nipalensis intensicolor Baker.
 **Procarduelis rubescens saturatior* Rothsch.
Haematospiza sipahi (Hodgs.).
Erythrina trifasciata (Verr.).
Erythrina rubicilloides Przew.
Pyrhula nipalensis ricketti La Touche.
Pyrhoptectes epauletta (Hodgs.).
Uragus sibiricus lepidus Dav. & Oust.
Carduelis tibetanus (Hume).
Mycerobas melanozanthus (Hodgs.).
Pyrhocorax pyrhocorax (Linn.).
Corvus coronoides intermedius Adams.

Considering all the previous collecting in Yunnan the addition by Forrest of the above 94 new forms is a very fine achievement. Those marked with an * were described for the first time. Mr. La Touche has increased the Yunnan list by the following :

Turnix maculatus maculatus Vieill.
Megalornis japonensis (Müll.).
Charadrius dubius curonicus Gm.
Pelecanus philippensis Gm.
Phalacrocorax capillatus Temm.
Anas acuta acuta Linn.
Anas formosa Georg.
Pandion haliaëtus haliaëtus (Linn.).
Ketupa zeylonensis (Gm.).
 **Picus canus yunnanensis* La Touche.
Pitta cucullata Hartl.
Luscinia cyane (Pall.).
Saxicola caprata burmanica Baker.
Saxicola torquata stejnegeri (Parrot).
 **Horeites pallipes laurentei* La Touche.
Phylloscopus yunnanensis La Touche.
 **Phylloscopus trochiloides disturbans* (La Touche).
Phylloscopus tenellipes (Swinh.).
 **Cryptolopha burkii distincta* La Touche.

- **Cryptolopha burkii intermedia* La Touche.
 **Cryptolopha castaneiceps laurentei* La Touche.
Orthotomus sutoria maculicollis Moore.
Turdus boulboul (Lath.).
Turdus cardis lateus Thay. & Bangs.
Turdus citrina innotata Blyth.
 **Pomatorhinus ruficollis laurentii* La Touche.
 **Ianthocincla chinensis lowei* (La Touche).
Timelia pileata intermedia Kinn.
 **Pellorneum mandellii vividum* La Touche.
 **Hemixenicus johannae* La Touche.
 **Hemixenicus cruralis laurentei* La Touche.
 **Stachyridopsis ruficeps bangsi* La Touche.
Mixornis rubricapilla minor Gyldenst.
Muscicapa hyperythrus Blyth.
Muscicapa pallidipes hainana O.-Grant.
Muscicapa ferruginea (Hodgs.).
 **Niltava grandis griseiventris* La Touche.
Niltava macgrigoriae Burton.
 **Pericrocotus speciosus bakeri* La Touche.
Pericrocotus cinereus Lafresn.
 **Pericrocotus montpelieri* La Touche.
Paradoxornis webbiana elizabethae La Touche.
 **Zosterops erythropleura melanorhyncha* La Touche.
 **Zosterops palpebrosa joannae* La Touche.
 **Aethopyga siparaja tonkinensis* Hart.
 **Arachnothera longirostris sordida* La Touche.
Emberiza tristrami Swinh.
 **Corvus corone yunnanensis* La Touche.

The total added by Mr. La Touche to the Yunnan Avifauna is 48, of which 20 marked with an * were described for the first time.

Forrest's 1925 collection, besides several not sent in former collections, contains the following 8 species new to Yunnan :

- Hoplopterus ventralis* (Wagl).
 **Xiphorhynchus superciliaris forresti* Rothsch.
 **Ianthocincla coerulata latirostris* Rothsch.
Megalaema virens Hume.
 **Dryobates cathpharius tenebrosus* Rothsch.
Anas querquedula Linn.
Porphyrio poliocephalus poliocephalus (Lath.).
Urocissa flavirostris flavirostris (Blyth).

The 3 marked with an * are new to science.

Mr. H. C. Riley has added to our list :

- Ithaginis cruentus rocki* Riley.

My readers will doubtless find a number of discrepancies between the foregoing lists and the complete list of Yunnan birds which follows. This is

due to the fact that the names in the foregoing lists have not everywhere been revised, whereas the list which follows here has been carefully revised and brought up to date.

1. *Gallus gallus robinsoni* nom. nov.

Gallus gallus O. Grant (nec Linn.), *Cat. Birds Brit. Mus.*, vol. xxii, p. 344 (1893) (ex Raffl., *Trans. Linn. Soc.*, xiii, p. 319 (1822) (Sumatra).

The first scientific name was bestowed on the Red Jungle Fowl by Linné in 1758; considering the enormous literature it has provoked, it has had very few names bestowed upon it, and, owing to the fact that its three races (sub-species) were mostly mixed up till 1917, the only name of the older ones which refers to a wild bird which can stand is *bankiva* Temm., which applies to the Java race. The Indian race must bear the name of *mürghi* Robinson & Kloss. There remains the question of the Chinese race; this has hitherto been united with the Indian one under the name either of *gallus* Linn. or *ferrugineus* Gm. until Messrs. Robinson & Kloss in 1920 separated it off as *ferrugineus ferrugineus*. In 1917 Mr. Stuart Baker had, it is true, separated it from the Indian race, but had united it with the Java race as *Gallus bankiva bankiva*, while he called the Indian race *bankiva ferrugineus*, a nomenclature wholly inadmissible, as his specific name dates from 1813, while his subspecific name dates from 1788. Now two questions arise in the nomenclature of the Red Jungle Fowl: first as to the specific name applicable to the three races, and secondly as to the subspecific name of the Chino-Burmese-Malayan race. If we follow the course of the mammalogists, who maintain that the Wild Horse of Kobdo must stand as *Equus caballus przewalskyi* because, although Linnaeus' name *caballus* applied only to the domestic horse, the wild horse is the same species; then we must employ Linnaeus' name *gallus* (1758) for the Red Jungle Fowl, and its domestic descendants. If, however, we consider that the origin of any domestic race or races is too problematical, then another name must be used for the "Formenkreis" of the Red Jungle Fowl. What this must be, depends on the name to be used for the Chino-Burmese-Malayan race. This further depends on the question of the validity or otherwise of the name *ferrugineus* Gm. Gmelin founded his *Tetrao ferrugineus* on a combination of Sonnerat's "Grande Caille de la Chine" and Latham's "Haeckled Partridge." Now apparently no one seems to have carefully read Sonnerat's description, for if they had it would have at once been evident that a bird having upper tail-coverts longer than the tail, a whitish line above the eye, and black spotted wings could NOT POSSIBLY be a Jungle Fowl; and this description evidently referred to some species of Francolin or Partridge. Latham's figure of his "Haeckled Partridge" is certainly that of a ♀ Jungle Fowl; but in view of the fact that Gmelin places Sonnerat's "Grand Caille de la Chine" first, the name *ferrugineus* must apply to that bird and cannot be used for a "Jungle Fowl."

Therefore those who object to using the name *gallus* Linn. as having been given to a domestic bird must use the name *bankiva* Temm. as the name for the "Formenkreis" of the Red Jungle Fowl. We next come to the name for our particular Eastern race; the name *ferrugineus* being inadmissible, it appears that this, the oldest known of the three races of the Red Jungle Fowl, is without a name. I myself here propose to follow the nomenclature adopted

by the mammalogists, and name the Eastern race after the senior of the two latest revisors, calling *Gallus gallus robinsoni* Rothsch. But those who refuse to recognize names applied to domestic races must call this form *Gallus bankiva robinsoni* Rothsch. The first to record this bird from Yunnan was Anderson, who mentions one ♂ from Pensee and says that Blyth already noticed that the Eastern examples of the Red Jungle Fowl were darker than Indian ones. Captain A. W. S. Wingate was the next to collect this bird in our district; he records an adult ♂ from Wei-Yüan, South Yunnan, 1899. Mr. Styan obtained a ♂ at Yuan Chang (29.iii.1903) (British Museum). Outram Bangs is the next to list the Eastern Red Jungle Fowl from Yunnan, Andrews and Heller having obtained it on the Salwin and Namtung Rivers.

Lastly, Mr. La Touche says in his "Birds of S.E. Yunnan" in the *Ibis* that "Jungle Fowl are common at Hokow." Forrest did not send this bird.

2. *Phasianus colchicus decollatus* Swinh.

Phasianus decollatus Swinhoe, *Proc. Zool. Soc. London*, 1870, p. 135 (Market Tschungking, Szetschuan)

Messrs. Menegaux & Didier, in their list of M. Albert Pichon's birds collected at Tengyueh-ting, S.W. Yunnan, record one specimen and remark that this fine pheasant was "special au Yunnan, où il est assez abondant." This can hardly be the case, as M. Pichon's example is the only one from Yunnan on record, and the bird is not once mentioned elsewhere from Yunnan between the years 1868 and 1925, during which all the collecting in Yunnan has gone on. As, however, the locality is the same as that given by Anderson for *P. c. elegans*, it is quite possible that M. Pichon's bird is a very worn example of Stone's Pheasant; in which case the statement quoted in parenthesis would be correct. Anderson, however, quotes a ♀ obtained by him, which from the description might be the ♀ of *P. c. decollatus*.

3. *Phasianus colchicus elegans* Ell.

Phasianus elegans Elliot, *Ann. Mag. Nat. Hist.* (4), vi, p. 312 (1870) (Yun-ling Mts., W. Szetschuan).

Phasianus sladeni Elliot, *Proc. Zool. Soc. London*, 1870, pp. 404, 408 (nom. nud.) (ex And. MS.) (border of Yunnan).

Phasianus colchicus rothschildi La Touche, *Bull. B.O.C.* vol. xlii, p. 54 (1921) (Mengtshz).

The first to record Stone's Pheasant from Yunnan was Anderson, who obtained 2 ♂♂, 2 ♀♀ at Momien, S.W. Yunnan, 5,000 feet. Bangs & Phillips quote 1 ♂ from Mengtshz as being identical with Zappey's Szetchuan birds. Bangs, in recording 3 ♂♂ of Andrews & Heller from Lichiang-Fu, says that he has compared 4 adult Yunnan ♂♂ with 4 adult ♂♂ from Szetchuan, and that there is no constant difference. Mr. La Touche described his *P. c. rothschildi* from Mengtshz from 11 ♂♂ obtained between March 20 and April 13, when the feathers of the hindneck, interscapulum, and flanks are exceedingly worn, whereas Forrest's specimens are winter birds with fresh feathers. An example from Szetchuan from Dr. Weigold (Stoetzner Expedition) collected in April, is exactly intermediate, owing to the feathers being less worn than those of the Mengtshz birds. Lastly I have at Tring a bird collected by the late Colonel H. H. Harington in Ta-Shin-Tang State, E. Salwin (6,000 feet), which is dated in his own handwriting "April/99." This bird, however, is in absolutely freshly moulted plumage identical with Forrest's December bird; I am therefore quite sure that the date

of Colonel Harington's bird is wrong ; probably labelled in England from manuscript notes and NOT in the FIELD.

Forrest got on his first expedition only a chick in down ; in his second collection there were 2 ♂♂, 1 ♀ from the Liehiang Range, and in the third lot 1 ♂, 2 ♀♀ and 5 eggs, also from the Liehiang Range. In the British Museum are the following examples : 2 ♂♂ Yungehang, Salwin River Road, April 1906, 1 ♂ E. of Mekong-Chutung-Yungehang Road, April 1906, 1 ♂ Shayang (Shar-jang ?), 1 ♂ Shayang-Chutung Road, March 1902, Colonel Rippon, 1 ♂ Yunnan Styau collection, 1 ♂ Mung-lang, W. Yunnan, W. A. Watts Jones.

In Forrest's 1925 collection there is 1 ♂ ad., hills round Tengyueh, 6,000 feet, September 1925. Open meadows. Bill, base of upper mandible brownish, rest yellowish grey ; iris pale yellow ; legs and feet dull fleshy brown.

4. *Syrmaticus humiae burmanicus* (Oates).

Calophasis burmanicus Oates, *Ibis*, 1898, pp. 124-125 (Ruby Mines and S. Shan States).

Colonel Rippon obtained a ♀ of this pheasant on the Chutung-Yangpi Road March 21, 1902, which was erroneously identified by Dr. Sharpe as ♀ *elliotti*. An adult ♂, curiously enough, was obtained by Forrest in almost the identical locality, viz. the Yungping-Yangpi Divide in 1921 at 7,000-8,000 feet. Andrews and Heller obtained a ♀ at Tengyueh-Ting.

5. *Chrysolophus amherstiae* (Leadb.).

Phasianus amherstiae Leadbeater, *Trans. Linn. Soc. Lond.* xvi, p. 129, pl. xv (1828) (said to have been from the Mts. of Cochinchina).

The first to obtain this magnificent pheasant in Yunnan was Anderson, near Momien. Captain Wingate collected an adult ♀ at Ching-tung, Yunnan, March 1899.

The next examples were obtained in 1917 by Andrews & Heller at Wantien, Pei-ti-Ping, and Li-chiang-Fu (4 adult ♂♂). Forrest collected a marvellous series of this bird ; he sent in his second, third, and fourth collections, altogether 10 adult ♂♂, 7 ♂♂ juv., 7 adult ♀♀, 3 ♀♀ juv., 1 ♀ fledgling, and 2 chicks in down from the Liehiang Range ; Mekong-Salwin Divide ; Mekong Valley ; and the hills N.W. of Tengyueh.

There are in the British Museum of the Lady Amherst's Pheasant the following examples from Yunnan unrecorded : 1 ♂ Youngpi-Cantung Road, 1 ♂ Yangpi Valley, 1 ♂ Talifi-Yang Road, Salwin-Shweli Divide, April and May 1906, 4 ♀♀ Giji-dzin-Shan, E. of Talifu, March and April 1902, Colonel Rippon ; 1 ♂ Tengyueh, E. B. Howell ; 1 ♂, 1 ♀ Yanpi-Chutung-Road, 1 ♀ Yuan Chang Yunnan, March 1906, Styau collection ; 1 ♂ Shil-kub nr. Liehiang, 1 ♂ Mahlung-Chon, E. Yunnan, W. A. Watts Jones.

In Forrest's 1925 collection there are 2 ♂♂ juv. Shweli-Salwin Divide, September 1925. Forests, 10,000 feet. Bill, upper mandible dark, under mandible light brown ; feet and legs dark fleshy brown ; iris pale yellow.

6. *Pucrasia meyeri* Mad.

Pucrasia meyeri Madarasz, *Ibis*, 1886, p. 145 (Central Thibet).

The first record we have of this species for Yunnan is by Oustalet, who enumerates some specimens collected by Prince Henri d'Orleans & Monsieur Bonvalot.

The only other collector who obtained this bird was Forrest, who sent home 13 ♂♂ ad., 4 ♀♀ ad., and 2 ♂♂ juv., all from the Lichiang Range. In the British Museum is 1 ♀ Yunnan, Styan collection. (Original label, "*Pucrasia meyeri*, Property of S.W. Styan"; and a printed label 2356, "R. P. Soulié, Tsekou C.G., 1896 N.")

In Forrest's 1925 collection there is 1 ♂ juv., Shweli-Salwin Divide, 12,000 feet; Campfer Forests, September 1925.

In the British Museum there is a ♀ from the Styan collection labelled R. P. Soulié, Tsekou, C.G. 1896, No. 2356," in print.

7. *Gennaeus nycthemerus nycthemerus* (Linn.).

Phasianus nycthemerus Linnaeus, *Syst. Nat.* edit. x, pt. i, p. 172, No. 6 (1758) (China ex Albin).

In his lecture before the B.O.C. in 1915, Mr. Stuart Baker expressed the opinion that *Gennaeus horsfieldi*, *G. lineatus*, and *G. nycthemerus* were all subspecies of one very variable species; in 1917 in the *Bombay Journal* he quotes the three above-mentioned Kalege pheasants as three species. I think it more consistent with my general views on subspecies to adopt his former attitude, as we have no proof as yet of the permanent habitat of any one of the numerous named forms of Kalege being in the same area or on the same level as that of any other.

But now arises a very important question; 3 silver pheasants have been recorded from Yunnan. In the case of Oustalet, who records *G. n. andersoni* brought home by Prince H. d'Orleans, it is probably an error in labelling, as the expedition also passed through the typical locality for *andersoni*, but it is not difficult to explain Mr. Outram Bangs, quoting both *n. nycthemerus* and *n. ripponi*. His Mengtsh birds were ♀ ad. and 2 immature, whereas his Ho-mu-Shu Pass bird was an adult ♂.

Forrest's birds from Tengyueh I had listed in 1925 as *n. nycthemerus*; but on comparison with Chinese examples of that form the ♂ certainly shows much broader black markings on the wings and wing-coverts than wild shot Chinese examples, and especially so when compared with aviary-bred silver pheasants. I have come to the conclusion that I cannot separate N.W. Yunnanese birds from Chinese ones, but will deal further with this under the next heading.

Forrest only sent 1 ♂, 1 ♀.

In the 1925 collection Forrest sent 2 magnificent old ♂♂; these exhibit everywhere heavier black markings than Chinese and aviary-bred *n. nycthemerus*, but differ considerably *inter se*. In spite of the considerable series in the British Museum and at Tring, I still think we know too little about the pheasants of the genus *Gennaeus* to finally decide how many local forms = subspecies there are among the birds nearest in appearance to typical Chinese *nycthemerus*. Oates has certainly allowed too many and others too few.

2 ♂♂ ad., hills N.W. of Tengyueh, 7,000-9,000 feet, May and December 1925. Forests. Bill dark fleshy brown, tip greenish; legs and feet scarlet crimson, claws brown; naked skin round eyes and face crimson; iris honey yellow.

8. *Gennaeus nycthemerus ripponi* Sharpe.

Gennaeus ripponi Sharpe, *Bull. B.O.C.* xiii, p. 29 (1902) (Southern Shan Hills).

Mr. Stuart Baker, in his revision of the genus *Gennaeus*, *Bombay Natural History Society's Journal*, xxiii, states that of the 11 specimens seen by him

only 2 were from Yunnan. The only other record we have is Andrews & Heller's example from the Ho-mu-Shu Pass, near the Burmese frontier. Now although I consider *n. ripponi* very close to *n. nychthemerus*, it is, in my opinion, premature to sink it as a pure synonym of the latter. I therefore think the proper course to adopt for the present is to retain it as a subspecies, and thus having *G. n. ripponi* Sharpe, Shan States and S.W. borders of Yunnan.

G. n. nychthemerus (Linn.), China proper and N.E. Yunnan.

I do not see how we can separate the N. and E. Yunnan examples from the main lot of Chinese specimens, although some of them may exhibit heavier black wing pattern.

9. *Gennaeus andersoni* (Elliot).

Euplocamus andersoni Elliot. *Monogr. Phasianidae*, vol. ii, pl. and text xxii (1872) (Kakhyen Hills).

Mr. Baker, op. cit., says *andersoni* is a hybrid between *G. n. horsfieldi* and *G. n. rubripes*, and I have little doubt but what he is right. On this assumption there are three alternatives in connection with Prince H. d'Orleans' specimen of so-called *andersoni*: first, it may have been an accidental stray bird ex Burma; secondly, it may be that an error of labelling occurred at the Paris Museum; thirdly and lastly, it may be a hybrid between *horsfieldi* and *riponi* from the extreme border country. In either case it does not effect the status of the Yunnan forms of *Gennaeus*.

In the British Museum there are 1 ♂, S.W. Yunnan, April 1899, Captain A. M. S. Wingate; 1 ♂ Tengyueh, E. B. Howell. These apparently are in addition to those mentioned by Mr. Stuart Baker.

Crossoptilon.

In my article on Forrest's first collection, I already made some remarks on Mr. Beebe's treatment of the five recognized forms of *Crossoptilon* (see Nov. Zool., vol. xxviii, pp. 15, 16, 1921). In the first place, Beebe says the number of tail-feathers is variable and therefore negligible as a diagnostic character; this is wrong because not only are these numbers in themselves diagnostic, but the type of tail-feather is quite different in those having more than 20 tail-feathers from what it is in those with only 20 tail-feathers. In the birds with normally 24 tail-feathers *C. auritum* and *mandschuricum*, the tail-feathers have the plumules much disconnected and loose, also the branches mostly widely separated; whereas those with 20 feathers only have the plumules and branches normal and connected. That the former group occasionally produces examples with only 22 tail-feathers is accidental. Of the second group we have two forms *crossoptilon* and *drouynii* = *leucurum* with normally white or creamy white coloration, and 1 form *harmani* with slaty blue coloration, but among series of *drouynii* examples occur with grey or blue patches, and also with grey suffusion. Beebe dismisses all the difficulties of the case by saying that *drouynii* and *harmani* are hybrids between *crossoptilon* and *auritum*, quite ignoring the fact that nowhere are any two forms of *Crossoptilon* found in the same area, or in the one case trying to get out of this difficulty by saying one of the parent forms had died out. In my opinion the case is much more simple; there being three distinct species of *Crossoptilon* *mandschuricum*, and *auritum* with 24 or occasionally

22 disintegrated tail-feathers, and very long ear-tufts, and one species *C. crossophilon* with 20 normally formed tail-feathers and shorter ear-tufts. This latter species has three subspecies, viz. *C. crossoptilon crossoptilon*, *C. crossoptilon drouynii*, and *C. crossoptilon harmani*; the former two normally more or less white, the latter always slaty blue.

10. *Crossoptilon crossoptilon crossoptilon* (Hodgs.).

Phasianus crossoptilon Hodgson, *Journ. As. Soc. Bengal*, vii, p. 864 (1838) (?).

Forrest is the only collector who met with this fine bird. He sent home from his first, second, third trips 8 ♂♂ ad., 7 ♀♀ ad., 1 ♀ juv., 1 fledgling; 3 chicks in down; and 2 eggs.

In spite of the considerable numbers of *C. crossoptilon* in our museums the series are not yet of a nature to enable us to decide whether there are only two white subspecies *C. c. crossoptilon* and *C. c. drouynii*, or if there are more, but the evidence leans mostly to there being only the two.

11. *Lophophorus sclateri* Jerd.

Lophophorus sclateri Jerdon, *Ibis*, 1870, p. 148 (Mishmi Hills).

It was only in his last collection made in 1925 that Forrest sent home skins of this magnificent pheasant. The first record for Western Yunnan was the adult ♂ obtained by Beebe in the mountains near the source of the Salwin River in 1910. After this no example from Yunnan has come to hand till the 8 now sent by Forrest. The adult ♂♂ sent by Forrest exhibit slight differences from a Mishmi Hill ♂ at Tring, viz. the white terminal bar of the tail is much narrower, and the crown of the head has the feathers much less curled and less glittering green, but as they are slightly worn I do not venture to separate them on this account.

5 ♂♂, 2 ♀♀ ad., 1 ♂ juv., Shweli-Salwin Divide, 11,000–12,000 feet, August 1925. Ravines and rocky slopes. Naked skin round eye peacock green; bill bone-yellow, slightly flushed with pink; claws, feet, and legs greyish brown; iris dark purplish blue. In a letter to Colonel Stephenson Clarke, Forrest mentions that on a former expedition in Yunnan before he began to collect birds, he had killed and eaten an entirely blue pheasant; this must undoubtedly have been Selater's monaul. This monaul was originally described from a single ♂ brought alive by natives from the Mishmi Hills and afterwards sent to the London Zoological Gardens. From 1870 onwards a few skins were traded out of the Mishmi Hills and a few, both ♂♂ and ♀♀ probably obtained in that way from natives were brought home by Prince H. d'Orleans. The first lot of skins to come direct to England were those obtained by Captain Bailey, the Resident at Gyantze, of which one ♂ is at Tring. Forrest's ♀♀ are the first to come to England and his young ♂ is so far unique.

12. *Pavo muticus* Linn.

Pavo muticus Linnaeus, *Syst. Nat.* edit. xii, p. 268 (1766) (habitat in Japonia !).

The only record for Yunnan is the ♀ obtained by Andrews & Heller at Changlung, Salwin River, Yunnan, 2,000 feet, March 1917.

13. *Tragopan temmincki* (Gray).

Satyra temmincki Gray in Hardwicke, *Ill. Ind. Zool.* i, pl. i (1830-2) (no locality (type marked China in British Museum)).

Oustalet's record ex Prince H. d'Orleans' collection is the first for Yunnan; then Andrews & Heller obtained a ♂ adult in the Ho-mu-shu Pass. Forrest sent in his second and third collections 12 ♂♂ ad., 6 ♀♀ ad., and 2 ♂♂ juv.

In the 1925 collection Forrest sent 2 ♂♂, 1 ♀ ad., 1 chick, Shweli-Salwin Divide, 11,000-12,000 feet, Compfer Forests, September 1925. Skin round eyes, wattles, and horns bright azure blue; bill fleshy brown; legs and feet brownish flesh-colour, claws brown; iris brown.

On the genus *Ithaginis*.

Hartert in his book on the Palaearctic Birds acknowledges five species: and three subspecies of *sinensis* and two of *geoffroyi*. Since then *geoffroyi wilsoni* has been proved untenable by Weigold, and I in my former papers have reduced my *clarkei* to a subspecies of *geoffroyi*. I have lately received on loan two specimens of *rocki* Riley from the Mekong River area, and in consequence have carefully examined all my series of *Ithaginis*, the only form that is not available being *michaelis*. Although typical *geoffroyi* and the *sinensis* group are at first sight very different in appearance from the *cruentus-thibetanus-kuseri* group, *clarkei* and *rocki* form an unbroken chain between *geoffroyi* and *thibetanus*, and I feel sure that similar intermediate forms will yet be discovered between *sinensis* and *geoffroyi*. Moreover, no two forms have been found inhabiting the same area, for although *clarkei*, *kuseri*, and *rocki* are all found in Western Yunnan, *kuseri* inhabits the Shweli River area, *rocki* is found in the Mekong River area, and *clarkei* only occurs on the actual Lichiang Range; *sinensis* inhabits Kansu and Shensi, N. of the Tsinling Mts., while *berezowskii* is found in the Tsinling Mts. and N. Szechuan, and *michaelis* on the N. slopes of the Nanshan Mts.; *geoffroyi* occurs in S.E. Tibet, and the Moupin District; *cruentus* inhabits Nepal, Sikkim, and as far as the Chumbi Valley; and *thibetanus* Jsamba Valley, Bhutan. I therefore feel sure that there is only one widely spread species of Blood Pheasant *Ithaginis*, and that all these named forms are subspecies of *cruentus*.]

14. *Ithaginis cruentus kuseri* Beebe.

Ithaginis kuseri Beebe, *Zoologica*, i, p. 190 (1912) (Yunnan).

The type-specimen of this excellent subspecies is the specimen recorded by Oustalet as *I. cruentus cruentus* in his list of Prince H. d'Orleans' birds. Beebe's piece of skin also came from Yunnan, and there are Yunnan examples in the British Museum. Lastly, there is in the Paris Museum a young bird of this species collected by M. R. P. Soulié at Tsékou, Yunnan, in 1897. The British Museum specimens mentioned above are 1 ♂ Tengyueh, E. B. Howell; and 1 ♂ vix ad. Tsékou, Yunnan, R. P. Soulié (ex Paris Museum).

In the final collection made by Forrest in 1925 are 7 examples of this bird, all from the Shweli-Salwin Divide, whereas the entire series of 48 examples of *I. geoffroyi clarkei* were collected in the Lichiang Range.

3 ♂♂, 4 ♀♀ ad., Shweli-Salwin Divide, 12,000 feet, Bamboo thickets and alpine meadows, August 1925. Skin round eye rich ruddy orange; bill dark brown; legs and feet bright crimson, claws brown; iris crimson.

15. *Ithaginis cruentus rocki* Riley.

Ithaginis rocki Riley, *Proc. Biol. Soc. Washington*, vol. xxxviii, p. 9 (1925) (Hofuping Mts., Mekong Valley).

Dr. Richmond has most kindly lent me two paratypes of this new form, and from them it is apparent that the original description is a little misleading owing to Mr. Riley having been only able to compare it with *c. kuseri* and not with *c. clarkei* and *c. thibetanus*. *I. c. rocki*, as I have said a few pages back, is exactly intermediate between *thibetanus* and *clarkei*; it differs from *clarkei* and agrees with *thibetanus* in the red, NOT black forehead, it agrees with *clarkei* and differs from *thibetanus* in the long uniform grey crest which has the feathers longer than in *thibetanus*, but less so, and less disintegrated than in *clarkei*, without a trace of the white shaft lines so conspicuous in *thibetanus*; the buff on the crown is present, but less extended than in *thibetanus*; the ear-coverts are shorter than in *clarkei*, and more of the feathers are normal wide feathers, the lower half has larger white patches than in *thibetanus*, while the upper half is black like neither; the upper surface and tail agree exactly with *clarkei*, while the throat and upper two-thirds of breast agree with *thibetanus*, the disintegrated and semi-disintegrated feathers of the abdomen and flanks are grey, as in *clarkei*, not bright buff as in *thibetanus*; the green feathers of the lower breast are intermediate between the two. Dr. F. Rock collected 3 ♂♂, 3 ♀♀ in the Hofuping Mts., November 1923.

16. *Ithaginis cruentus clarkei* Rothschild.

Ithaginis clarkei Rothschild, *Bull. B.O.C.* xl, p. 67 (1920) (Lichiang Range, Yunnan).

This most interesting discovery of Forrest was not recorded by any other collector. The series sent in the first three collections consists of 37 ♂♂, 11 ♀♀, all from the Lichiang Range.

17. *Arborophila torqueola torqueola* (Valenc.).

Pardix torqueola Valenciennes, *Dict. Scien. Nat.*, vol. xxxviii, p. 435 (1825) (Bengal).

Andrews & Heller obtained 1 ♀ No-mu-shu Pass, 8,000 feet, April 7, 1917, and there are 1 ♂, 1 ♀ in Forrest's fourth collection from near Tengyueh. No other records for Yunnan have been given.

In Forrest's 1925 collection is 1 ♂ juv., hills N.W. of Tengyueh, 9,000 feet, October 1925. Forests. Skin round eyes crimson; bill, feet, and iris dark brown.

18. *Arborophila ruficularis euroa* (Bangs & Phill.).

Arboricola ruficularis euroa Bangs & Phillips, *Bull. Mus. Comp. Zool.* vol. lvi ii, p.268 (1913-1914) (Mengtysz).

This bird was described from 2 ♂♂, and the chief character was that the white shaft stripes on the flanks were reduced to narrow lines. La Touche's bird is a ♀, and though he states on the authority of M. Laurente that the bird is common it will require a good series to prove either that *A. r. euroa* is a good subspecies, differing only in the ♂ sex, or whether at Mengtysz occasional mutations occur, but yet the bulk of the birds are *A. r. intermedia*.

19. *Arborophila brunneipectus brunneipectus* (Tick.).

Arboricola brunneipectus Tickell in Blyth, *Journ. As. Soc. Beng.* vol. xxiv, p. 276 (1855) (Tenasserim Mts.).

Andrews & Heller obtained 1 adult ♂ near the Burmese frontier.

20. *Bambusicola fytchii fytchii* Anders.

Bambusicola fytchii Anderson, *Proc. Zool. Soc. Lond.* 1871, p. 214, pl. xi (Ponsee).

Bangs & Phillips described an adult ♂ as *Bambusicola oleaginia* from Alan Owston's Mengtshz collections; the principal differences cited are the black, not red, post-orbital region, ground colour darker, more olivaceous, black central stripes of back feathers black, not red, wing-coverts uniform and darker, chest almost minus white spots, black on flanks more extensive, and rump and upper tail-coverts uniform. Now I have seen quite a number since I wrote on Forrest's first collection, for Forrest has sent altogether 6 ♂♂, 1 ♀, and La Touche has obtained 2. The first observation arising out of these is that they vary much *inter se*, though none show the same amount of red as in *B. f. hopkinsoni*. One specimen (No. 5087 G. Forrest 5/24) almost agrees with the diagnosis of *oleaginia*, but has a little more vermiculation, whereas another agrees in having no vermiculation, but a little red edging to the black spots. In view of the great differences between La Touche's 2 from S.E. Yunnan, I think there is no doubt that all *B. fytchii* from Yunnan are *B. fytchii fytchii* Anders., and that *oleaginia* Bangs & Phillips is only an extreme mutation.

There are on record, in addition to Forrest's 7 from Tengyueh, 3 from Mengtshz (including type of *oleaginia*); Anderson obtained 1 ♂, 1 ♀ (type) at Ponsee; Andrews & Heller collected 2 ♀♀, Mueheng, Salwin, and Tengyueh; and lastly, M. Pichon obtained an example also at Tengyueh.

In the British Museum are 1 ♀, Yangpi Valley, 1 ♀ Shayang, March and April 1906, 1 ♀ Gyi-dzin-Shan, March 1902, Colonel Rippon; 1 ♀ Yunnan, Captain H. R. Davies.

Forrest's 1925 collection is now in my hands, and the 11 examples of *B. fytchii* therein more than confirm my idea that *oleaginia* is only an individual aberration; some of these having very few and small black or black and red dorsal spots, while 2 have them very large, numerous, and very black reaching on to the hindneck, some have few spots below, others very many and close together, and these markings below are not on the birds which should have small or large markings above, if *oleaginia* were a good form. 1 ♂ hills N.W. of Tengyueh, 7,000 feet, August 1925; 5 ♂♂, 5 ♀♀ ad. Shweli-Salwin Divide, 6,000-10,000 feet, June-August 1925, Forests and thickets.

21. *Coturnix coturnix japonica* Temm. & Sehleg.

Coturnix vulgaris japonica Temminck & Schlegel, *Siebold's Faun. Jap. Aves*, p. 103, pl. lxi (1849) (Japan).

Forrest only sent 1 quail in his first collection, and M. Pichon obtained 1 ♂, 1 ♀. La Touche obtained also 2 ♂♂ ad. Mengtshz. 1 ♂ Yunnan, Captain H. R. Davies, is in the British Museum.

M. & Mme. Comby obtained between Yunnanfu and Seifu an example in 1909.

22. *Fracolinus pintadeanus phayrei* (Blyth).

Perdix phayrei Blyth, *Journ. As. Soc. Beng.* vol. xii, p. 1011 (1843) (Arakan).

The Burmese, Annam, Siamese, and Yunnan birds are all considerably smaller than Chinese and Madagascar examples, and so I agree with Mr. Outram Bangs that Blyth's name of *phayrei* must be used to denote the subspecies; no difference in plumage can be found.

The name of *chinensis* Forster in Osbeck 1771 is preoccupied by Linnaeus' *chinensis* of 1766, as both are placed in the genus *Tetrao*, as has been pointed out by Mr. C. D. Sherborn.

Forrest only obtained a single example; Colonel Rippon obtained it in the Salwin Valley and Captain Wingate sent home an adult ♂ from Ching-tung, March 1899. Alan Owston's collections contained 1 ♂ from Mengtsh; and Andrews & Heller 1 ♂ on the Namting River; M. Pichon obtained 1 ♂, 1 ♀; and though La Touche only brought back 1 ♂, 1 ♀ from Mengtsh, he states it was exceedingly common from Hokow to Posi.

23. *Tetraophasis szechenyii* Mad.

Tetraophasis szechenyii Madarasz, *Zeitschr. f. ges. Orn.* vol. ii, p. 50, pl. ii (1885) (East Thibet).

Forrest so far is the only collector who has obtained this very rare bird in Yunnan. He sent altogether in his second and third collections 5 ♂♂ ad., 7 ♀♀ ad., 6 ? ad., and 2 juv. just fledged. All were obtained on the Lichiang Range. With the exception of 1 ♀, from the Mekong-Yangtze Divide, 1 ♂, 1 ♀ Yungning April and May 1922 (Picea and Rhododendron Forest) collected by Kingdon Ward are in the British Museum.

24. *Turnix pugnax rostrata* Swinh.

Turnix rostrata Swinhoe, *Ibis*, 1865, p. 543 (Formosa).

Andrews & Heller got 1 ♀ ad. at Chu-tung, Yungping Ho, 5,000 feet, January 1917. Mr. La Touche enumerates 2 ♀♀ from Mengtsh and 1 ♀ from Lotukow. He says it is not uncommon.

In the British Museum is 1 ♂, Yunnan, Captain H. R. Davies.

25. *Turnix pugnax taigoor* (Sykes).

Hemipodius taigoor Sykes, *Proc. Zool. Soc. Lond.* 1832, p. 155 (Deccan).

This form is recorded by Menegaux & Didier from M. Pichon's collection under the name of *pugnax*.

26. *Turnix pugnax plumbipes* (Hodgs.).

Turnix plumbipes Hodgson, *Bengal. Sport. Mag.* 1837, p. 346 (Nepal).

Anderson obtained an example of an Hemipode at Muangla, July 1868, and remarks, "This is the larger Himalayan race which appears to be distinct from *T. taigoor* (Sykes)."

27. *Turnix maculatus maculatus* Vieill.

Turnix maculatus Vieillot, *Nouv. Dict. d'Hist. Nat.* vol. xxxv, p. 47 (1819) (?).

The late Mr. Ogilvie Grant in vol. xxii of the *Catalogue of Birds* adopted for this Hemipode the name of *blanfordi* Blyth, as he considered the name *maculatus*

preoccupied by Temminck's *maculosus* of 1815. This name has also been used by Dr. Hartert in his book on Palearctic Birds, by an oversight. I do not consider *maculatus* and *maculosus* the same words, though the meaning is somewhat similar; therefore I adopt as the valid name for this Hemipode the oldest one of *maculatus* Vieill. Mr. La Touche obtained 3 live birds from near Pösi.

28. *Porphyrio poliocephalus poliocephalus* (Lath.).

Gallinula poliocephala Latham, *Ind. Orn. Suppl.* p. lxxviii (1802).

In the 1925 collection is 1 ♀ (sexed ?), Tengyueh Valley, 5,300 feet, December 1925. Rice fields and marshes. Bill dull dark red, base and crown of head shield dark crimson; feet deep dull crimson, claws brown; iris purplish crimson.

29. *Gallinula chloropus parvifrons* Blyth.

Gallinula parvifrons Blyth, *Journ. As. Soc. Bengal*, vol. xii, p. 180 (1843) (Calcutta).

All those recording Yunnan Moorhens as distinct from *G. c. chloropus*, except Mr. La Touche, have wrongly referred them to *G. c. orientalis* Horsf., but they all belong to *parvifrons*.

Anderson unites Burmese and West Yunnan birds under *G. c. chloropus*. Ingram records 2 Mengtze examples as *G. c. orientalis*, Bangs & Phillips list 10 Mengtze specimens also as *orientalis*, and M. Pichon's 2 skins are recorded under this name by Menegaux & Didier.

30. *Porzana fusca erythrothorax* (Temm. & Schleg.).

Gallinula erythrothorax Temminck & Schlegel in *Siebold's Faun. Jap. Aves*, p. 121, pl. lxxviii (1849) (Japan).

Here again Ingram and Bangs & Phillips have wrongly enumerated Alan Owston's 16 Mengtze examples as *P. f. fusca*; they are *P. fusca erythrothorax*. The only others listed are Forrest's 2 sent in his fourth collection.

Mr. Kinnear suggested to me after above was written that this was not *P. f. erythrothorax*, but was *P. fusca bakeri* Hart. I have in consequence carefully compared and measured my series of 51 examples of the 4 described races of *Porzana* (*Limnobaenus*) *fusca*, viz. *P. fusca fusca* (Linn.), *P. fusca erythrothorax* (Temm. & Schleg.), *P. fusca phaeopygia* Stejn., and *P. fusca bakeri* Hart.

I find first that *f. fusca* is ruled out by its small size and *p. phaeopygia* by its large wing and very large bill. This leaves only *f. erythrothorax* and *f. bakeri* to be considered. The first question to arise is sexing; in 3 examples from Siam apparently properly sexed, the 2 ♂♂ measure wing 102 and 111 mm., and the ♀ 104; but the 2 Mengtze birds marked ♂♀ and the 2 from Tengyueh Valley also marked ♂♀, run from 103–105 mm. Chinese and Japanese birds run as high as 118 mm., and not lower than 105 mm. I have compared the Yunnan birds and the Bangkok birds with the type and two paratypes of *f. bakeri*, and find that the upperside of *bakeri* is more reddish or brownish olive, not so greenish as in the Yunnan, Bangkok, Chinese, and Japanese birds. As one Siamese ♂ exceeds 110 mm., I do not venture to name the Yunnan bird; so unless future collectors confirm the small size of Yunnan *fusca*, it must be called *P. fusca erythrothorax*.

31. *Porzana pusilla pusilla* (Pall.).

Rallus pusillus Pallas, *Reise d. Versch. Prov. Russ. Reich.* iii, p. 700 (1776) (Dauria).

Ingram is the only author to record this little rail; he lists 4 ♂♂, 1 ♀ Mengtsh, May 1910, Alan Owston.

32. *Porzana bicolor* Wald.

Porzana bicolor Walden, *Ann. Mag. Nat. Hist.* (4), ix, p. 47 (1872) (Darjeeling).

An example was obtained by Colonel Rippon in the Lichiang Valley, April 1906.

33. *Amaurornis phoenicura chinensis* (Bodd.).

Fulica chinensis Boddarta, *Tab. Pl. Enl.* p. 54 (1785) (China restr. Hongkong).

Oustalet records this bird as obtained by Prince H. d'Orleans; Rippon obtained 1 at Shayang, Yangchang Road, April 1906; Bangs & Phillips give 2 ♂♂ Mengtsh, Alan Owston; Andrews & Heller collected 2 on the Namting River, and at Mengpeng Salwin, in March 1917; Forrest sent 1 ♀, Lichiang Valley, June 1918; and Mr. La Touche records a ♂ Mengtsh, April 1921.

34. *Hypotaenidia striata jouyi* Stejn.

Hypotaenidia jouyi Stejneger, *Proc. U.S. Nat. Mus.* vol. ix, p. 362 (1886) (Shanghai).

Ingram records 1 ♂, 1 ♀ Mengtsh, May 1910; and Bangs & Phillips 1 ♂ from the same place, August 1910.

35. *Megalornis grus lilfordi* (Sharpe).

Grus lilfordi Sharpe, *Cat. B. Brit. Mus.* vol. xxiii, p. 252 (1894) (Eastern Siberia).

Mr. Ogilvie Grant listed an adult ♂ of this bird, obtained by Captain Wingate near Yunnan City, February 1899, under the name of *Grus grus*; Bangs & Phillips record an adult from Mengtsh; Monsieur Pichon obtained one adult bird; and Mr. La Touche records it as abundant round Mengtsh, and the neighbourhood during winter, arriving the latter part of September.

36. *Megalornis nigricollis* (Prjev.).

Grus nigricollis Prjevalsky in Rowley's *Orn. Misc.* vol. ii, p. 436, pl. ix (1877) (Kokonoor).

Captain Wingate obtained an adult ♂ near Yunnan City, February 1899, and Mr. La Touche mentions having seen 2 living examples in the Governor's garden at Yunnanfu.

37. *Megalornis japonensis* (Müll.).

Ardea (Grus) japonensis P. L. S. Müller, *Natur. Syst. Suppl.* p. 110 (1776) (Japan) (? ex Boddarta MS.).

Mr. La Touche records seeing on the Mengtsh plains white or very pale cranes with black wings, and suggests that they were Sarus Cranes; but I consider that they were undoubtedly the Japanese Crane.

38. *Antigone antigone antigone* (Linn.).

Ardea antigone Linnaeus, *Syst. Nat.* edit. x, vol. i, p. 142 (1758) (habitat in Asia).

Anderson obtained 2 at Tsitkaw, March 1868 and 1875, and saw flocks up to 600 strong at Ponsee, 3,300 feet.

39. *Larus gelastes* Keys. & Blas.

Larus gelastes Keyserling & Blasius, *Wirbelt. Eur.* p. xcv. 242 (1840) (South of France, Arabia).

One specimen was obtained in the Talifu Valley, February 1906, and 1 on the Tali Lake, 6,700 feet, March 1902, by Colonel Rippon.

40. *Sterna melanogaster* Temm.

Sterna melanogaster Temminck, *Pl. Col.* livr. lxxii, pl. 434 (1827) (?).

Anderson records an example obtained at Muangla, May 1868, under the name of *Sterna javanica*; Monsieur Pichon brought home 2 examples killed in the Salwin Valley, and said he often observed this bird in small flocks in company with *Hoplopterus ventralis*.

41. *Hydrochelidon leucopareia swinhoei* Math.

Hydrochelidon leucopareia swinhoei Mathews, *Birds Australia*, p. 320 (1912) (Foochow).

Bangs & Phillips record from Mengtsh, June 1911, 4 immature birds.

42. *Rostratula benghalensis benghalensis* (Linn.).

Rostratula benghalensis Linnaeus, *Syst. Nat.* edit. x, vol. i, p. 153 (1758) (Asia, ex Albin).

Anderson obtained 1 ♂ Momien, June 1868; Ingram records 3 ♂♂, 1 ♀ Mengtsh, May 1910; and Bangs & Phillips list 3 examples from the same place, all ex Alan Owston; Forrest sent 1 ♂ October 1919, and 1 ♀ aberr. December 1924, both from Tengyueh.

43. *Capella solitaria* (Hodgs.).

Gallinago solitaria Hodgson, *Gleanings in Science*, vol. iii, p. 238 (1831) (Nepal).

Colonel Rippon obtained 2 examples in the Lichiang Valley and Yangtse Big Bend, March and April 1906; M. Pichon collected 1 specimen and Forrest sent home 1 in his fourth collection obtained to the north of Tengyueh. Bonaparte's name of *japonica* is a *nomen nudum* and moreover Japanese examples are only known on migration (*vide* Hartert). M. & Mme. Comby obtained 1 specimen in 1909.

The status of *solitaria japonica* Bpt. is still too uncertain, but if it has any justification it will apply here (see above).

44. *Capella stenura* (Bp.).

Scolopax stenura "Kuhl" Bonaparte, *Ann. Stor. Nat. Bologna*, vol. iv, p. 335 (1830) (Sunda Islands).

Bangs & Phillips record 6 specimens from Mengtsh; and La Touche says it appears in August on the plain of Mengtsh.

45. *Capella gallinago raddei* (But.).

Scolopax (Gallinago) gallinago raddei Buturlin, *Kuliki Rossieskoi Imperie-Premiyu-k-Journal in Pso-veia i Ruchainaia Okhota*, 1912, p. 54 (of separate) (Siberia).

This eastern race of our Common Snipe is not very well known, and requires further study.

Anderson records 1 ♂ from Kabynet, January 1875, and says abundant in suitable localities; Captain Wingate collected 2 near Yunnan City, February 1899; Bangs & Phillips record 1 from Mengtsz as *g. gallinago*, and 4 as *g. uniclavus* Hodgs. La Touche, under the heading of *g. gallinago*, says plentiful in autumn.

46. **Capella nemoricola** (Hodgs.).

Gallinago nemoricola Hodgson, *Proc. Zool. Soc. London*, 1836, p. 8 (Nepal).

There are two examples of this Snipe in the British Museum from Yunnan; 1 in immature plumage has a very short bill.

47. **Scolopax rusticola rusticola** Linn.

Scolopax rusticola Linnaeus, *Syst. Nat.* edit. x, i, p. 146 (1758) (Europe—Sweden).

Major Davies, in his work on Yunnan, mentions that he shot a Woodcock in the extreme north of the Province. Bangs & Phillips record 2 examples from Mengtsz, and Andrews & Heller obtained 1 ♂ on the Namting River, March 1917. Forrest sent 1 ♀ from Tengyueh and 1 sex ? from the Lichiang Range.

48. **Limosa limosa melanuroides** Gould.

Limosa melanuroides Gould, *Proc. Zool. Soc. London*, p. 84 (1846) (Port Essington).

Bangs & Phillips report 1 ♂ Mengtsz, September 1910, and Forrest sent 1 ♀ in his first collection from Tengyueh.

49. **Himantopus himantopus himantopus** (Linn.).

Charadrius himantopus Linnaeus, *Syst. Nat.* edit. x, pt. i, p. 151 (1758) (S. Europe).

Forrest was the only collector who obtained this bird in Yunnan; 1 worn example was in his fourth collection from Tengyueh.

50. **Terekia cinerea** (Güld.).

Scolopax cinerea Güldenstadt, *Nov. Comm. Petrop.* vol. xix, p. 473, pl. xix (1774) (coast of the Caspian Sea).

Bangs & Phillips record the only Yunnan example, 1 ♂, Mengtsz, September 1910.

51. **Tringa hypoleucos** Linn.

Tringa hypoleucos Linnaeus, *Syst. Nat.* edit. x, pt. i, p. 149 (1758) (Europe—Sweden).

Oustalet enumerates this bird among those obtained by Prince H. d'Orleans. Colonel Rippon collected 2 Chutung Valley and Talifu Valley March and April 1902; and Forrest sent in his first collection 2 ♂♂, 4 ♀♀ from Tengyueh, and 1 ♂, Lichiang Range, 1918–1919. In the collection for 1925, Forrest sent 1 ♂, 1 ♀, Shweli Valley, 6,000 feet, rice fields, July–August 1925, and 1 ♀, Tengyueh Valley, 5,300 feet, rice fields, December 1925.

52. **Tringa glareola** Linn.

Tringa glareola Linnaeus, *Syst. Nat.* edit. x, pt. i, p. 149 (1758) (Europe—Sweden).

Messrs Menegaux & Didier record this among M. Pichon's collection; La Touche says this bird occurs in late summer and autumn on the plains near Mengtsz; and Bangs & Phillips list 11 examples from Mengtsz (Alan Owston).

53. *Tringa ochropus* Linn.

Tringa ochropus (*ocrophus*) Linnaeus, *Syst. Nat.* edit. x, pt. i, p. 149 (1758) (Europe).

The characters given by Mathews for his *T. o. assami* are not constant. Bangs & Phillips enumerate 1 ♀ Mengtsh, September 1910; Colonel Rippon obtained 1 in the Liehiang Valley; La Touche records it as common round Mengtsh in winter; Forrest sent 2 ♂♂, 4 ♀♀ Tengyuch; 1 ♀, Mekong River; 1 ♂, Tangtze Valley; 1 ♀, Shweli Valley.

In his 1925 collection Forrest sent 1 ♂, 2 ♀♀, Shweli Valley, 7,000 feet, streams, August-October 1925.

54. *Tringa nebularia* (Gunn.).

Scolopax nebularia Gunnerus in Læem, *Beskr. Finn. Lapp.* p. 251 (1767) (Norway).

Bangs & Phillips enumerate 8 examples from Mengtsh, 1910, under the heading of *Tringa nebularia glottoides* (Vig.). The eastern birds were separated by Vigors only because he compared 2 birds in different plumages; the above-mentioned writers are perfectly right in doubting Mathews' recognition of *glottoides*, which is a pure synonym. La Touche says a greenshank was brought to him on December 7, and he believes it is a common bird round Mengtsh in winter.

55. *Tringa totanus eurhinus* (Oberh.).

Totanus totanus eurhinus Oberholser, *Proc. U.S. Nat. Mus.* vol. xxii, p. 207 (Central and Eastern Asia).

This race is rather variable and requires further study.

Bangs and Phillips record 4 examples, Mengtsh, September 1910. M. Pichon obtained 1 example recorded under the name of *Totanus calidris*. M. & Mme. Comby obtained 1 specimen in 1909.

56. *Tringa erythropus* (Pall.).

Scolopax erythropus Pallas, *Vroeg's Cat. Coll. Adumbratiuncula*, p. 6 (1764) (Holland).

Ingram records 2 ♂♂, Mengtsh, May 1910.

57. *Erolia ruficollis* (Pall.).

Tryngra ruficollis Pallas, *Reise d. Versch. Prov. Russ. Reichs.* vol. ii, p. 700 (177) (Salt Lake in Dauria).

Bangs & Phillips record a ♂, Mengtsh, April 1911, under the name of *Pisobia damascensis* (Horsf.). (This may be really *E. subminuta* (Midd.) as though Horsfield's bird is undoubtedly *E. ruficollis*, *damascenus* auct. is nearly always *subminuta*.)

58. *Hoplopterus ventralis* (Wagl.).

Charadrius ventralis Wagler, *Syst. Av. Charadrius*, p. 59, sp. 11 (1827 "Senegal," err.).

Anderson records a single specimen from Muangla, May 1868; Andrews & Heller obtained 2 ♀♀ at Meng-ting, February 1917; M. Pichon sent home 3 examples from the Salwin River. The 1925 collection of Forrest contained one example of this bird, which is new to the Yunnan list.

1 ♀, Shweli Valley, 6,000 feet, rice fields, swamps, July 1925.

59. *Sarcogrammus indicus atronuchalis* (Blyth).

Lobivanellus atronuchalis Blyth in Jerdon, *Birds India*, vol. iii, p. 648 (1864) (Burma).

Colonel Rippon collected 1 example in the Talifu Valley; Forrest obtained 1 ♂, 1 ♀, Tengyueh.

Forrest sent in his 1925 collection 1 ♂, 1 ♀ ad., 1 ♂ juv., Shweli Valley, 6,000 feet, rice fields and marshes, June and October 1925.

60. *Microsarcops cinereus* (Blyth).

Pluvianus cinereus Blyth, *Journ. As. Soc. Bengal*, vol. xi, p. 587 (1842) (Calcutta).

Captain Wingate collected an adult ♂, near Yunnan City, February 1899; Forrest sent home 3 ♂♂, 1 ♀ from Tengyueh; M. Pichon obtained 1 example, and says "common everywhere." Mr. La Touche enumerates 1 ♀ Mengtsz, December 1920, and says it is fairly common in winter on the Mengtsz plateau. M. & Mme. Comby got 1 between Yunnanfu and Seifu in 1909. Forrest's 1925 collection contained 1 ♂, Tengyueh Valley, 5,300 feet, December 1925, 1 ♀, Shweli Valley, 7,000 feet, October 1925, rice fields.

61. *Charadrius dominicus fulvus* Gm.

Charadrius fulvus Gmelin, *Syst. Nat.* vol. i, pt. 2, p. 687 (1789) (Tahiti).

Oustalet enumerates this bird among the 90 species obtained by Prince H. d'Orleans, which are not quoted by Anderson. Bangs & Phillips record 1 ♂, 1 ♀, Mengtsz, April–November. M. Pichon's collection contains 3 examples, and he says "common everywhere, lives in large flocks."

62. *Charadrius dubius dubius* Scop.

Charadrius dubius Scopoli, *Del. Faun. et Flor. Insubr.* vol. ii, p. 93 (1786) (Luzon).

Anderson collected 3 examples at Muangla, May 1868; Bangs & Phillips list 4 from Mengtsz, March and September; Forrest sent 1 ♀, Tengyueh, 1 ♂, Teng Chuan Valley.

63. *Charadrius dubius jerdoni* (Legge).

Aegialitis jerdoni Legge, *Proc. Zool. Soc. London*, 1880, p. 39 (Ceylon and Central India).

Bangs & Phillips attribute a very small example from Mengtsz, March 5, to this race on account of the small size; certainly the wing of 101.5 is even smaller than Hartert gives in his *Birds of the Palaearctic Fauna*.

64. *Charadrius dubius euroniceus* Gm.

Charadrius euroniceus Gmelin, *Syst. Nat.* vol. i, pt. ii, p. 692 (1789) (habitat in Curonia).

La Touche is the only one who has recorded this form for Yunnan, 1 ♂ imm. Mengtsz, August 1920.

65. *Charadrius placidus* Gray.

Charadrius placidus Gray, *Cat. Mamm. Birds, etc., of Nepal and Thibet in Brit. Mus.* (1863) (Nepal).

La Touche records 1 ♂, Kopaotsun, May 1921; Forrest sent 4 ♀♀ from Shweli Valley, and 4 ♀♀ from the Tengyueh Valley. In Forrest's 1925 collection are 1 ♂, 1 ♀ juv., Shweli Valley, 6,000 feet, August 1925, rice fields

66. *Glareola maldivarum* Forst.

Glariola (Pratincola) maldivarum Forster, *Fauna Indica*, p. 11 (1795) (Maldives, ex Latham *Gen. Syn.* iii, i, p. 224).

Bangs & Phillips record 6 examples from Mengtsh, July 1910.

67. *Sphenocercus sphenurus yunnanensis* La Touche.

Sphenocercus sphenurus yunnanensis La Touche, *Bull. B.O.C.* vol. xlii, p. 13 (1921) (Lotukow).

Oustalet records this pigeon from the collection of Prince H. d'Orleans; Bangs & Phillips enumerate 1 ♂, 1 ♀, Mengtsh, July; Forrest sent 3 ♂♂, 2 ♀♀, Lichiang Range, 1 ♂, Tengyueh, 2 ♀♀, Shweli Valley, 2 ♀♀, Mekong-Salwin Divide, 3 ♀♀, Shweli-Salwin Divide; 1 ♂, 1 ♀, Mekong Valley; La Touche only records his ♂ type from Lotukow.

In Forrest's 1925 collection are 2 ? juv. Shweli-Salwin Divide, 9,000 feet, July 1925.

68. *Onopopelia tranquebarica humilis* (Temm.).

Columba humilis Temminck, *Pl. Col.* livr. xlv, pl. 259 (1824) (Bengal, Luzon).

Ingram enumerates 1 ♂, 1 ♀ Mengtsh, April 1910; Bangs & Phillips 15 examples also Mengtsh, various months; Forrest sent 7 ♂♂, 6 ♀♀ Tali Valley, 1 ♀ Tengyueh Valley, 1 ♀ Yangtze Valley, and 2 ♀♀ Teng Chuan; Mr. La Touche records 1 ♀ cage bird, and says he heard this species also cooing in his garden in May!

69. *Streptopelia chinensis vacillans* Hart.

Streptopelia chinensis vacillans Hartert, *Nov. Zool.* vol. xxiii, p. 83 (1916) (Yunnan, Mengtsh).

The bird of the plains alone is this subspecies, and apparently is only known from Mengtsh. Ingram records 1 ♂, 1 ♀ Mengtsh, and Bangs & Phillips enumerate 6 specimens also from there; La Touche obtained 1 ♂ ad., 1 juv., and says "extremely common at Mengtsh and in the vicinity." Anderson records birds obtained in W. Yunnan under the head of *tigrinus*, but both these records refer to the next race.) Bangs & Phillips record 6 examples from Mengtsh; La Touche records 1 ♂ ad., 1 ? juv. Mengtsh, Aug. 1920, and says very common round Mengtsh.

70. *Streptopelia chinensis forresti* Rothschild.

Streptopelia chinensis forresti Rothschild, *Nov. Zool.* vol. xxxii, p. 293, No. 16 (1925) (hills round Tengyueh).

Anderson was the first collector to obtain this bird; he records 4 examples from Tapeng, Pensee, and Momien in Yunnan; Andrews & Heller collected 1 ♀ Namting River, and Forrest sent 2 ♂♂ Tengyueh, 1 ♂ hills round Tengyueh (type), and 2 ♂♂ ad., 1 ♂ juv. Tengyueh Valley. This is the bird from Western Yunnan, whereas *S. c. vacillans* Hart. has hitherto only been obtained around Mengtsh, S.E. Yunnan. I erroneously identified Forrest's first specimen as *vacillans*. Colonel Rippon obtained this bird at Lichiang; Anderson records 1 from Katha, 1 from Tapeng, 3 from Pensee, 1 from Momien, together with 17 Burmese examples under the name *tigrinus*; Andrews & Heller obtained 1 ♂ ad. Namting River, Feb. 1917, also recorded as *tigrina*. In Forrest's 1925

collection are 3 ♂♂ ad., 2 ♂♂, 2 ♀♀, 1 ? juv. Tengyueh Valley, 6,000 feet, December 1925 ; 2 ♂♂ hills N.W. of Tengyueh, 7,000-8,000 feet, August 1925.

Streptopelia orientalis (Lath.) and its subspecies.

Dr. Hartert was the first to try and throw light on the confusion surrounding *St. orientalis* (see NOV. ZOOLOG. vol. xxiii, 1916), and it was not his fault that the existing data had been misused to such an extent that he was misled into new errors. Both Hartert and most of the other writers were thus misled because they had only consulted the original printed descriptions and not the other documents, viz. a list of the birds brought home by Sykes, and Sykes' own notes sent from India in which it is made clear that Sykes' name *meena* applies to the bird with pale grey under tail-coverts = *streptopelia orientalis agricola* (Tickell), and that he only brought home 2 birds, both ♂♂, and both in the British Museum still. The original description (*P.Z.S.* 1832, p. 149) appears to have been drawn up for Sykes by some other person who misunderstood Sykes. For in his manuscript notes Sykes distinctly states that there is not the slightest difference between ♂ and ♀. As therefore the birds from which this erroneous and mixed description was made are undoubtedly grey vented, we must adopt the following nomenclature :

Streptopelia orientalis orientalis (Lath.).

Columba orientalis Latham, *Ind. Orn.* vol. ii, p. 606, No. 48 (1790).

Streptopelia orientalis meena (Sykes).

Columba meena Sykes, *Proc. Zool. Soc. London*, 1832, p. 149 (Dukhán).

Streptopelia orientalis ferrago (Eversm.).

Columba ferrago Eversmann, *Add. ad. Zoog. Ross. As. fasc.* iii, p. 17 (1842) (Songaria).

There will, however, always be some obstinate people to whom the letter of the description means more than the type-specimen from which it is taken, and these will continue to call *ferrago meena* and *meena agricola*.]

71. **Streptopelia orientalis orientalis** (Lath.).

Columba orientalis Latham, *Ind. Orn.* vol. ii, p. 606 (1790) (China).

Anderson enumerates 8 birds, 4 under *Turtur meena* and 4 under *Turtur orientalis*, of these birds in the register of Anderson's collections (second set), received by the British Museum ; there are 3 entered under the name *Turtur gelastes*. Of these 2 only can now be found, and both are examples enumerated in Anderson's book under the name *Turtur meena*, viz. 1 ♂ Poncee, March 1868, and 1 ♀ Tsitkaw, Feb. 1875 ; of these the one from Poncee is *o. orientalis*, and the Tsitkaw ♀ is *o. meena*. As we have Anderson enumerating 4 birds under the name of *Turtur orientalis*, and specially mentioning the differences of these birds from his *meena*, I think we can accept it as quite established that 5 out of the 8 mentioned by Anderson were *orientalis orientalis*. Therefore we have the following : Anderson enumerates 1 ♂ 2 ? Poncee, March-April 1868 and 1878, 1 ? Tsitkaw, Feb. 1875, 1 ♂ Katha, Jan. 1868 ; Bangs & Phillips record 3 ? imm. Mengtsh ; Andrews & Heller record 2 birds from Malipa, March 1917, as not

quite typical; M. Pichon sent 1 specimen and remarks "common everywhere"; Forrest collected 1 ♂ Lichiang Range, 2 ♀♀ vicinity of Tengyueh. In his 1925 collection he sent 2 ♂♂ Tengyueh Valley, 7,000 feet, Dec. 1925; 1 ♂, 1 ♀ ad., 1 ♂ juv. Shweli-Salwin Divide, 6,000-7,000 feet, Aug. 1925; La Touche enumerates 2 ♂ Mengtsh, Sept. 1920 and April 1921.

72. *Streptopelia orientalis meena* (Sykes).

Columba meena Sykes, *Proc. Zool. Soc. London*, 1832, p. 149 (Dukhán).

Anderson records 1 ♀ Tsitkaw, Feb. 1875, and 1 ♀ Katha, Jan. 1868; Andrews & Heller record a specimen from Ho-mu-shu Pass, April 1917.

73. *Columba leuconota gradaria* Hart.

Columba leuconota gradaria Hartert, *Nov. Zool.* vol. xxiii, p. 85 (1916) (Szetschuan).

This bird is only recorded by Oustalet from Prince H. d'Orleans' collection.

74. *Columba hodgsoni* Vig.

Columba hodgsoni Vigors, *Proc. Zool. Soc. London*, 1832, p. 16 (Nepal).

Oustalet enumerates this bird as having been obtained by Prince H. d'Orleans; Bangs & Phillips mention 3 from Loukouchai; and Andrews & Heller obtained it at Chang-lung, 2,000 feet. Forrest sent 3 ♂♂, 2 ♀♀ ad. Lichiang Range; 1 ♂ ad., 1 ♀ juv. Tengyueh Valley; 1 ♂, 1 ♀ ad. imm. Shweli-Salwin Divide; 1 ♀ Tali Valley.

75. *Ducula badia* (Raffl.).

Columba badia Raffles, *Trans. Linn. Soc. London*, vol. xiii, p. 317 (1822) (Sumatra).

A ♂ ad. was obtained in S.W. Yunnan, by Captain A. W. S. Wingate.

76. *Podiceps ruficollis poggei* (Reichw.).

Colymbus nigricans poggei Reichenow, *Journ. f. Ornith.* p. 125 (1902) (Tschili, China).

Anderson reports this bird as being common at the foot of the Kakhyen Hills, and at Momien (W. Yunnan); Bangs & Phillips record 1 adult and 1 immature from Mengtsh; Forrest obtained 2 ♂♂, 2 ♀♀ in the Tengyueh Valley, August 1919; and Mr. La Touche brought home 1 young in down from Mengtsh, and says it is common and resident. Forrest's 1925 collection contains 4 ♂♂, 3 ♀♀ Tengyueh Valley, 5,500 feet, December 1925.

77. *Pelecanus philippensis* Gm.

Pelecanus philippensis Gmelin, *Syst. Nat.* vol. i, pt. ii, p. 571 (1788) (Philippine Islands).

Mr. La Touche obtained 1 ♀ immature at Mengtsh, Oct. 1920, and says the species is resident on Lake Tahung at the north end of the Mengtsh plateau.

78. *Phalacrocorax carbo sinensis* (Shaw & Nodder).

Pelecanus sinensis Shaw & Nodder, *Nat. Misc.* vol. xiii, pl. 529 and text (1801) (China).

Forrest obtained a young ♂ on the Lichiang Range, Oct. 1922.

79. **Phalacrocorax filamentosus** (Temm. & Sehleg.).

Carbo filamentosus Temminck & Schlegel, *Faun. Jap. Aves*, p. 129 (1850) (Japan).

Carbo capillatus Temminck & Schlegel, *Faun. Jap. Aves*, pls. lxxxiii and lxxxiii b (1850) (Japan).

La Touche records an example of this species from Mengtsh, Dec. 1920, and states he saw, while travelling by train to Yunnanfu, a number of cormorants, including white-headed ones, sitting on the river banks or fishing.

80. **Phalacrocorax javanicus** (Horsf.).

Carbo javanicus Horsfield, *Trans. Linn. Soc. London*, vol. xiii, p. 197 (1822) (Java).

Anderson records this bird under the name of *Ph. pygmaeus*, and obtained 1 example at Tapeng, March, and 2 at Muangla, May 1868, and said it was very common in the Sanda Valley. Major Davies publishes a picture of Cormorant Fishers in the Chien-Ch'ang Valley, thus proving that these birds are also used to catch fish by the Yunnanese. They were probably one of or both the preceding larger species. Forrest obtained 1 ♂ ad., 1 ♀ juv. of *javanicus* in the Tengyueh Valley in 1924.

La Touche observed 2 examples of this bird in or around his compound. Forrest's 1925 collection contains 1 ♂, 1 ♀ ad., 1 ♀ juv. Tengyueh Valley, 5,500 feet, Dec. 1925.

81. **Mergus merganser merganser** Linn.

Mergus merganser Linnaeus, *Syst. Nat.* edit. x, pt. i, p. 129 (1758) (Europe).

Colonel Rippon obtained 1 at Talifu, Feb. 1906; Mr. La Touche brought home 1 ♀ Mengtsh-Manhao Road, Dec. 1920, and saw a ♂ on the journey to Yunnanfu. (As Captain Wingate obtained *Mergus squamatus* in S.W. Honan, and *M. merganser orientalis* is said to breed in Thibet, I have no doubt these birds also occur in Yunnan.) 1 ♀ Yunnan, 1901, collected by Captain H. R. Davies, is in the British Museum.

82. **Nyroca fuligula** (Linn.).

Anas fuligula Linnaeus, *Syst. Nat.* edit. x, pt. i, p. 128, No. 39 (1758) (European seas).

Forrest sent 1 ♂ Shweli Valley, June 1924; La Touche says this species winters on the Mengtsh Plain.

There are in the British Museum 2 unsexed examples, collected by Captain H. R. Davies in Yunnan, 1899.

83. **Anas platyrhyncha platyrhyncha** Linn.

Anas platyrhyncha Linnaeus, *Syst. Nat.* edit. x, pt. i, p. 125 (1758) (Europe).

Colonel Rippon's collection contains 1 ♂ Talifu Valley, Feb. 1906.

84. **Anas acuta acuta** Linn.

Anas acuta Linnaeus, *Syst. Nat.* edit. x, pt. i, p. 126 (1758) (European seas).

One example was shot at Mengtsh, Dec. 1920, according to Mr. La Touche.

85. **Anas penelope** Linn.

Anas penelope Linnaeus, *Syst. Nat.* edit. x, pt. i, p. 126 (1758) (Europe).

One was shot at Mengtsh in 1921, writes La Touche.

86. *Anas formosa* Georgi.

Anas formosa Georgi, *Bemerk. Reise. Russ. Reich.*, p. 168 (1775) (Lake Baikal).

Mr. La Touche says this bird was shot at Mengtsh in winter by Captain de Lusignan.

87. *Anas crecca crecca* Linn.

Anas crecca Linnaeus, *Syst. Nat.* edit. x. pt. i, p. 125 (1758) (Europe on fresh water).

Bangs & Phillips enumerate 1 ♀ Mengtsh, Oct.; M. Pichon also obtained 1 ♀, but says the Teal was abundant in the Tengyueh Valley; La Touche says it is common on the lakes near Mengtsh.

88. *Anas querquedula* Linn.

Anas querquedula Linnaeus, *Syst. Nat.* edit. x, vol. i, p. 126 (1758) (Europe).

Forrest sent in his 1925 collection 1 ♂ juv. Tengyueh Valley, 5,500 feet, Dec. 1925.

89. *Casarca ferruginea* (Pall.).

Anas ferruginea Pallas, *Froeg's Cat. Adumbratiuncula*, p. 5 (1764) (Tartary).

Anderson obtained 1 ♂, 1 ♀ on the sandbanks of the Tapeng River, Feb. 1875, and says they were common in the Sanda Valley; M. Pichon collected 1 ♂ at Tengyueh, and says that the neighbouring lakes and watercourses in winter are covered with immense masses of the Ruddy Sheldrake; La Touche says abundant on the Mengtsh plain in winter; Colonel Rippon obtained an example W. Yunnan, 1906.

90. *Nettapus coromandelianus* (Gm.).

Anas coromandeliana Gmelin, *Syst. Nat.*, vol. i, pt. ii, p. 556 (1788) (Coast of Coromandel).

Ingram enumerates 1 ♂, May 1910, Mengtsh.

91. *Ixobrychus cinnamomeus* (Gm.).

Ardea cinnamomea Gmelin, *Syst. Nat.* vol. i, pt. 2, p. 643 (1789) (China).

Anderson collected an example at Sanda, July 1868, and Ingram records 1 ♂ Mengtsh, May 1910; Bangs and Phillips list 7 specimens Mengtsh, April-June; M. Pichon sent home 3 examples and says it was very common everywhere; Forrest obtained 1 ♂, 1 ♀ in the Shweli Valley, June 1919; La Touche obtained 1 ♂ ad., 1 ♀ imm. Mengtsh, July-Oct. 1920; M. & Mme. Comby obtained 2 examples and state it is common everywhere. In Forrest's 1925 collection are 2 ♂♂, 1 ♀ hills N.W. of Tengyueh, 7,000 feet, April 1925; 1 ♂, 2 ♀♀ Tengyueh Valley, 6,000 feet, April 1925.

92. *Ixobrychus sinensis* (Gm.).

Ardea sinensis Gmelin, *Syst. Nat.* vol. i, pt. 2, p. 642 (1789) (China ex Latham).

Bangs & Phillips record 1 ♂, 1 ♀ Mengtsh, June 1911.

93. *Nycticorax nycticorax nycticorax* (Linn.).

Ardea nycticorax Linnaeus, *Syst. Nat.* edit. x, pt. i, p. 142 (1758) (S. Europe).

Bangs & Phillips enumerate 1 ♂, 1 ♀ Mengtsh, Sept.; Forrest sent 1 ♂ ad. Lichiang Range, 1 ♀ juv. N.W. of Tengyueh, Oct. 1918-1919; La Touche obtained 2 adults, 2 young Mengtsh, Aug.-Nov. 1920, and said they bred in the Commissioner of Customs' garden and in the Railway Compound.

Forrest's 1925 collection contains 6 ♂♂, 1 ♀ ad. Tengyueh Valley, 6,000 feet, Nov.-Dec. 1925.

94. *Butorides striatus javanicus* (Horsf.).

Ardea javanica Horsfield, *Trans. Linn. Soc. London*, vol. xiii, p. 190 (1821) (Java).

Ingram records 1 ♂ Mengtsh, May 1910; Bangs & Phillips 3 examples from the same place, Aug. 1910; Forrest sent 1 ♂ Tengyueh Plain, 1 ♂ Lichiang Range, 1 ♂, 1 ♀ Tali Valley; Mr. La Touche obtained 2 ad., 1 imm. Mengtsh, 1920; M. & Mme. Comby collected 2 specimens in 1909.

95. *Butorides striatus amurensis* Schrenck.

Ardea (Butorides) virescens var. *amurensis* Schrenck, *Reise Amur-Lande*, vol. i, pt. ii, p. 441 (1860) (Amur).

Forrest collected an immature ♀ in the hills N.W. of Tengyueh, Aug. 1924.

96. *Ardeola bacchus* (Bp.).

Buphus bacchus Bonaparte, *Consp. gen. Av.* vol. ii (1855) (Malay Peninsula).

Captain Wingate's collection includes a ♂ imm. Yunnan City, Feb. 1898; Forrest sent 1 ♂ Hsia Kuon Valley, 1 ♀ Lichiang Range, 1 ♀ Tengyueh Plain, 1 ♂ Shweli Valley, and 1 ♂ Shweli-Salwin Divide; Mr. La Touche says common in winter on the Mengtsh plateau; M. & Mme. Comby procured 1 example in 1909; Forrest sent in his 1925 collection 1 ♀ Tengyueh Valley, 5,300 feet, Dec. 1925, rice fields and marshes.

97. *Bubulcus ibis coromandus* (Bodd.).

Cancroma coromanda Boddaert, *Tabl. Pl. Enl.* p. 54 (1783) (Coromandel).

Anderson records 3 examples Muangla, May 1868; Bangs & Phillips list 2 specimens Mengtsh, Aug. 1910; Andrews & Heller collected 1 immature ♀ Lung-ling, March 1917; M. Pichon collected 1 ♂, 2 ♀♀, and says it is common everywhere in Yunnan; Forrest sent 2 ♀♀ Tengyueh Valley; Mr. La Touche obtained 3 juv. Mengtsh, July-Aug. 1920; M. & Mme. Comby collected 1 specimen in 1909. 2 ♂♂ Shweli Valley, 6,000 feet, June 1925, are in Forrest's 1925 collection.

98. *Egretta garzetta garzetta* (Linn.).

Ardea garzetta Linnaeus, *Syst. Nat.* edit. xii, pt. i, p. 237, No. 13 (1766) (habitat in Oriente).

Anderson observed this bird near Muangla; Captain Wingate collected 1 ♂ ad. Yuan-chn-Wu-ho River; Forrest sent 1 ♂, 1 ♀ Tengyueh Valley, June 1924; Mr. La Touche says plumes of this bird he saw at Mengtsh were said to come from Linanfu.

99. **Egretta intermedia intermedia** (Wagl.).

Ardea intermedia Wagler, *Iris*, 1829, p. 659 (Java).

Anderson mentions having observed this bird at Muangla; Bangs & Phillips record 6 specimens Mengtsh, July-Aug.; La Touche obtained 2 young birds Mengtsh, 1920.

100. **Ardea cinerea jouyi** Clark.

Ardea cinerea jouyi Clark, *Proc. U.S. Nat. Mus.*, vol. xxxii, p. 468 (1907) (Seoul, Corea).

M. Pichon collected a young example at Patikai, and says it was common everywhere.

101. **Graptocephalus davisoni** (Hume).

Geronticus davisoni Hume, *Stray Feathers*, vol. iii, p. 300 (1875) (Pakelan, Tenasserim).

1 ♂ ad. S.W. Yunnan, April 1899, was collected by Captain Wingate.

102. **Ibis melanocephalus** (Lath.).

Tantalus melanocephalus Latham, *Ind. Orn.*, vol. ii, p. 709 (1790).

Bangs & Phillips enumerate 1 ad. ♀ Mengtsh.

103. **Pseudotantalus leucocephalus** (Forst.).

Tantalus leucocephalus Forster, *Ind. Zool.*, p. 20, pl. x (1781).

Bangs & Phillips record 5 examples Mengtsh.

104. **Ciconia nigra** (Linn.).

Ardea nigra Linnaeus, *Syst. Nat.*, edit. x, pt. i, p. 142 (1758) (North Europe).

Captain Wingate procured a ♂ near Ching-tung, March 1899; Mr. La Touche says it is common in winter on the Mengtsh plain.

105. **Pandion haliaetus haliaetus** (Linn.).

Falco haliaetus Linnaeus, *Syst. Nat.*, edit. x, pt. i, p. 91 (1758) (Europe).

Mr. La Touche states that he observed an Osprey in 1920-21 all through the winter round Mengtsh, and another one in April 1921 beyond Amichow.

106. **Elanus caeruleus caeruleus** (Desf.).

Falco caeruleus Desfontaines, *Hist. (Mém.) Acad. Paris* année 1787, p. 503, pl. xv (1789) (Algiers).

Anderson collected a ♂ at Momien, June 1868; Captain Wingate obtained an adult ♂ near Yunnan City, Feb. 1899; M. Pichon collected a single specimen in the Salwin Valley; and La Touche records 1 ♂ Yunnanfu, May 1921; M. & Mme. Comby collected 1 example in 1909; Colonel Rippon obtained 1 ♀ Tali Hills, 6,450 feet, March 1902; 1 ♂ Yunnan, Styan coll., is in the British Museum.

107. **Pernis apivorus orientalis** Tacz.

Pernis apivorus orientalis Taczanowski, *Faun. Orn. Sib. Orient.*, vol. i, p. 50 (1891) (East Siberia).

Forrest collected 1 ♂, 1 ♀ Lichiang Range, Oct. 1922; La Touche obtained 1 ♀ Mengtsh, Nov. 1920, and saw a second on the same day.

108. **Pernis ellioti** Jerd.

Pernis ellioti Jerdon, *Madras Journ. Lit. Sciën.* vol. x, p. 74, 1839 (Maharatta, India).

M. Pichon obtained an example in the Tengyueh Valley, of which Ménégauz states that it is in a very exceptional plumage.

109. **Haliastur indus indus** (Bodd.).

Falco indus Boddaert, *Tabl. Pl. Enl.* p. 25 (1783) (Pondichery).

Forrest sent among his 1925 collection 1 ♂ ad. Tengyueh Valley, 7,000, Dec. 1925. Bill black, tipped with horn yellow; feet greyish green, claws black; iris brown.

110. **Milvus lineatus** (Gray).

Haliaetus lineatus Gray in Hardwicke's *Ill. Ind. Zool.*, vol. i, p. 1, pl. xviii (1832) (China).

Anderson collected 1 ♂, 1 ♀ juv. at Momien, June–July 1868; Forrest sent 1 specimen Lichiang Range, Sept. 1922; M. Pichon collected 2 examples near Tengyueh; Mr. La Touche brought home 1 ♂, 1 ♀ Mengtsz, Dec. 1920, and remarks he only observed Kites there in the winter.

111. **Milvus migrans govinda** Sykes.

Milvus govinda Sykes, *Proc. Comm. Zool. Soc. London*, pt. ii, p. 81 (1832) (Dekkan).

M. Pichon sent 1 ♀ of this bird.

112. **Accipiter trivirgatus rufinictus** (McClell.).

Astur rufinictus McClelland, *Proc. Zool. Soc. London*, pt. vii, p. 153 (1840) (Assam).

Bangs & Phillips list 1 ♂ Mengtsz, Sept. 1910; Andrews & Heller obtained 1 ♂ Namting River, Feb. 1917 (wing 230 mm.); Forrest sent 1 ♂ Mekong-Salwin Divide Sept. 1921 (wing 333 mm.); La Touche says that what he took to be this bird was very common round Mengtsz, but he could not obtain a specimen.

113. **Accipiter affinis** Gurney.

Accipiter virgatus subsp. *affinis* Gurney, *List Diurn Birds Prey*, pp. 39 and 168–173 (1884) (Himalayas and Formosa).

Forrest sent 1 ♂ ad. Mekong Valley, and 1 ♂ juv., 1 ♀ ad. from the vicinity of Tengyueh; M. Pichon collected one also near Tengyueh; La Touche obtained an immature ♀. According to Ménégauz, it has been recorded for Yunnan by David & Oustalet.

Forrest sent in the 1925 collection 1 ♀ juv. hills N.W. of Tengyueh, 7,000 feet, October 1925. Bill dark blackish grey; feet and iris pale yellow.

114. **Accipiter nisus nisosimilis** Tick.

Falco nisosimilis Tickell, *Journ. As. Soc. Bengal*, vol. ii, p. 571 (1833 or 1834) (Borabhum, India).

Ingram enumerates 1 ♂ Mengtsz, April 1910; Captain Wingate sent home 1 ♀ S.W. Yunnan; La Touche obtained 1 ♂, 4 ♀♀ at and near Mengtsz, and says it is very common; M. & Mme. Comby sent home 1 example in 1909.

115. *Accipiter nisus melanoschistus* Hume.

Accipiter melanoschistus Hume, *Ibis* 1869, p. 356 (Simla).

Oustalet quotes this under the name *nisus* from the collection of Prince H. d'Orleans; M. Pichon obtained a large ♀ near Tengyueh; Forrest sent 1 ♂, 2 ♀♀ ad. from the Lichiang Range. In the 1925 collection is 1 ♀ (sexed ♂ errore). N. of Tengyueh, Oct. 1925.

116. *Accipiter badius poliopsis* (Hume).

Micronisus poliopsis Hume, *Stray Feathers*, vol. ii, p. 325 (1874) (North Pegu).

M. Pichon obtained 1 example; Ménégau in recording it says it has been already detailed by previous authors from Yunnan, but I have failed to find any previous record.

117. *Accipiter gentilis schvedowi* (Menzb.).

Astur palumbarius schvedowi Menzbier, *Orn. Geogr. Eur. Russl.* in *Mém. sc. Univers. Imp. Mosc. Hist. Nat.* 1882, p. 439 (Transhaicalia).

Forrest sent a young ♀ Lichiang Range; La Touche also got a ♀ juv. at Mengtsz.

118. *Accipiter gentilis khamensis* (Bianchi).

Astur palumbarius khamensis Bianchi, *Bull. B.O.C.* vol. xvi, p. 70 (1906) (Kham, S.E. Thibet).

Dr. Hartert in his handbook of *Palaearctic Birds* has united *A. g. khamensis* and *A. g. schvedowi*, but I consider this in the light of later investigations not to be the case.

Forrest obtained an adult ♀ of this race in the Lichiang Range.

119. *Circus cyaneus cyaneus* (Linn.).

Falco cyaneus Linnaeus, *Syst. Nat.* edit. xii, pt. i, p. 126 (neighbourhood of London).

Captain Wingate got 1 ♂ ad., 1 ♂ imm. in S.W. Yunnan; Forrest collected 2 ♂♂ north of Tengyueh; M. Pichon sent home 1 ♂, 5 ♀♀ from around Tengyueh; M. & Mme. Comby obtained 1 ♂ in 1909. In Forrest's 1925, collection are 1 ♂, 1 ♀ (sexed ♂ errore) Tengyueh Valley, 6,000 feet, Dec. 1925.

120. *Circus melanoleucus* (Forst.).

Falco melanoleucus Forster, *Ind. Zool.* p. 12, pl. ii (1781) (Ceylon).

Anderson obtained an immature example at Muangla, May 1868; Bangs and Phillips record 4 ♂♂ and ♀♀ from Mengtsz; Forrest sent 1 ♂, 1 ♀ N.E. of Tengyueh, 1 ♀ Tengyueh Valley, 1 ♂ Shweli Valley; La Touche records 1 seen at Mengtsz in early autumn 1920. In Forrest's 1925 collection 1 ♂ Tengyueh Valley, 6,000 feet, April 1925; 1 ♂ Yunnan, F. W. Styan, is in the British Museum.

121. *Circus aeruginosus aeruginosus* (Linn.).

Falco aeruginosus Linnaeus, *Syst. Nat.* edit. x, pt. i, p. 91 (1758) (Europe).

Bangs & Phillips record 1 example from Mengtsz, May 1910; La Touche says "common on the plains during winter."

122. *Circus spilonotus* Kaup.

Circus spilonotus Kaup in Jardine's *Contr. Orn.* for 1850, p. 59 (Asia).

Bangs & Phillips enumerate 1 ♀ Mengtsh, March; La Touche obtained 1 ♂ Mengtsh, Dec. 1920.

123. *Spilornis cheela ricketti* Sclat.

Spilornis cheela ricketti Sclater, *Bull. B.O.C.* vol. xl, p. 37 (1919) (Yamakan).

Andrews & Heller obtained 1 ♂ ad. at Malipa, March 1917.

124. *Buteo buteo japonicus* (Temm. & Schleg.).

Falco buteo japonicus Temminck & Schlegel in Siebold's *Faun. Japon. Aves*, p. 16, pls. vi and vii (1844-1845) (Japan).

Captain Wingate collected 1 ♂ ad. near Yunnan City, Feb. 1899; Forrest sent 1 ♀ from the Lichiang Range.

125. *Aquila chrysaetus daphanea* Menzb.

Aquila daphanea Menzbier, *Orn. Turkestan*, vol. i, p. 75 (1888) (Central Asia).

M. Pichon collected 3 semi-adult specimens, and states that they frequented the neighbourhood of Tengyueh in considerable numbers.

126. *Aquila nipalensis nipalensis* Hodgs.

Aquila nipalensis Hodgson, *Asiatic Res.* vol. xviii, pt. 2, pl. i, pp. 13-16 (1833) (Plain of Nepal).

Forrest collected a ♀ juv. in the Lichiang Range, Aug. 1918; La Touche records a very dark eagle observed on the Mengtsh plain, which I suspect was this species.

127. *Torgos calvus* (Scop.).

Vultur calvus Scopoli, *Del. Faun. and Flor. Insubr.* vol. ii, p. 85 (1786) (Pondichery (ex Sonnerat)).

M. Pichon sent 3 examples, 1 juv., 2 semi-adult; he says this vulture frequents the plains round Tengyueh in summer and is sporadically found throughout Yunnan.

On the Asiatic forms of *Falco tinnunculus*.

Hartert in vol. ii of his *Vögel der paläarktischen Fauna* has made 3 geographical races occur in Asia: viz. *F. tinnunculus tinnunculus* Linn., *F. t. japonicus* Temm. & Schleg., and *F. t. saturatus* Blyth. In his appendix, vol. iii, p. 2201, he adopts for *saturatus* Blyth on the authority of Mr. W. L. Sclater the name *interstinctus* McClell., which in his vol. ii he had placed as a synonym of *t. tinnunculus*. In 1920 (*Syn. list Accip.*, p. 146 (Siberia)), the late H. Kirke Swann separated the extreme East Asiatic birds as *dörriesi*; on the same page, 2201, Hartert relegates this name to the synonyms of *t. tinnunculus*. Swann's type is in the Tring Museum, and after carefully going through the distinguishing characters given by Swann I came to the conclusion that the only one which could be considered at all was the greater length of the tail. On further investigation I find that it is quite true that some Siberian birds have long tails, but Kestrels with EQUALLY long tails are found in England and Central Europe. When I was studying

the Yunnan Kestrels Mr. Kinnear and Colonel Meinertzhagen pointed out that certain examples were excessively dark, and had a strong bluish wash. Mr. Kinnear and I then began to examine the British Museum series of Kestrels, including McClelland's type of *interstinctus*, and we were at once convinced that there were numerous points to clear up, viz. were the darkest Yunnan birds really *interstinctus*?; were the pale Yunnan birds found in winter *t. tinnunculus*? were they *japonicus*, or what were they? finally what were the continental Indian breeding birds, and was *saturatus* = to *interstinctus*? Colonel Meinertzhagen, Mr. Kinnear, and I have now examined an enormous series of the former's birds, including the Tring and British Museum series, and we have come to the following conclusions: (1) McClelland's *interstinctus* is NOT the same as *saturatus* Blyth, but IS IDENTICAL with *japonicus* Temm. & Schleg. (2) The very dark Yunnan bird is *saturatus* Blyth, and is the breeding bird of S. China, Yunnan, and Tenasserim, whereas *interstinctus* = *japonicus* and *tinnunculus* are only winter visitors. (3) The breeding bird of N.E. China and Japan is *interstinctus* = *japonicus*. (4) The breeding birds of the Himalayan Region, Central Asia, and Siberia are *tinnunculus*, of which *dörriesi* is a synonym. (5) The breeding bird of Peninsular continental India is distinct, and has no name.

128. *Falco tinnunculus interstinctus* (McClell.).

Tinnunculus interstinctus McClelland, *Proc. Zool. Soc. London*, Part vii, p. 154 (1840) (Assam).

Falco tinnunculus japonicus Temminck & Schlegel in Siebold's *Faun. Jap. Aves*, p. 2, pl. i and ib (1844) (Japan).

Ingram records 1 ♀ Mengtsh, April 1910. Forrest sent 1 ♂ ad., 1 ♂ in moult, 1 ♂ juv. Liehiang Range, 1 ♀ Shweli Valley, 1 ♀ Mekong-Salwin Divide. In his 1925 collection is 1 ♀ hills round Tengyueh, 7,000 feet, Dec. 1925. In the British Museum is 1 ♀ Gyidzin-Shan, March 1902, Colonel Rippon; Bangs & Phillips record 1 ♂, 1 ♀ Mengtsh, Oct.-Nov.; M. & Mme. Comby obtained 1 ♂, 1 ♀; Monsieur Pichon sent 1 ♂, 2 ♀♀.

129. *Falco tinnunculus saturatus* (Blyth).

Falco saturatus Blyth, *Journ. As. Soc. Bengal*, vol. xxviii, p. 277 (1859) (Tenasserim).

Ingram records 1 ♂ in moult, 1 ♂ juv. Mengtsh, July 1910, and Momien, June 1868, Anderson coll.; Forrest sent 1 ♂ Mekong-Salwin Divide, 3 ♀♀ Liehiang Range, 1 ♀ Shweli Valley. In the British Museum are 1 ♂, 3 ♀♀ Mekong-Salwin Divide, 1 ♂, 2 ♀♀ Liehiang Range, Forrest coll.; 1 ♂ Talifu Valley, July 1900; 1 ♂ Yunnan City, Feb. 1899, Captain Wingate; 3 ♂♂, 1 ♀ Yunnan, F. W. Styan coll. The one ♂ in the Styan collection is very remarkable, the slaty blue wash on the back and wings is strongly developed, and the same colour of the head and rump has spread so that the chestnut colour is almost obsolete; Bangs & Phillips record 6 specimens Mengtsh, March-Nov.; Andrews and Heller obtained 1 ♂? Hung-chang, Jan. 1917; La Touche obtained 1 ♀ Mengtsh, Nov. 1920.

130. *Falco tinnunculus tinnunculus* Linn.

Falco tinnunculus Linnaeus, *Syst. Nat.* edit. x, vol. i, p. 90 (1758) (Europe—Sweden).

Pichon obtained 2 examples of this form; Forrest sent 1 ♂, 2 ♀♀ Shweli Valley, 1 ♂ Shweli-Salwin Divide, 1 ♀ Tengyueh. In his 1925 collection are

4 ♂♂ hills round Tengyueh, 7,000–8,000 feet, Dec. 1925. Open country. Oustalet lists this bird among those of Prince H. d'Orleans. In my first article and the subsequent ones I recorded all the dark birds both breeding and migrant as *interstinctus*, not having realised that there were two races.

131. **Falco naumanni pekinensis** Swinh.

Falco cenchris var. *pekinensis* Swinhoe, *Proc. Zool. Soc. London*, 1870, p. 442 (neighbourhood of Peking).

Pichon collected 1 specimen.

132. **Falco subbuteo streichi** Hart. & Neum.

Falco subbuteo streichi Hartert & Neumann, *Journ. f. Orn.* 1908, pp. 283, 287, 289 (Tschuktschen Land, East Siberia).

Anderson collected a young bird at Momien in June referred to this form by Collingwood Ingram, but it was probably *subbuteo centralusiae*. But Forrest sent an undoubted ♀ of this bird from S.W. of Tengyueh, Oct. 1919.

133. **Glaucidium brodiei** (Burton).

Noctua brodiei Burton, *Proc. Zool. Soc. London*, 1835, p. 152 (Himalayas).

Colonel Rippon obtained this bird at Gyi-dzin-Shan, April 1902; and Oustalet enumerates the species from the collection of Prince H. d'Orleans.

134. **Glaucidium cuculoides cuculoides** (Gould).

Noctua cuculoides Gould, *Cent. Hinal. Birds*, pl. and text 4 (1832) (Himalayas).

Andrews & Heller collected 1 ♀ ad. on the Namting River.

135. **Glaucidium cuculoides whitelyi** (Blyth).

Athene whitelyi Blyth, *Ibis*, 1867, p. 313 (China).

Forrest sent 1 ♂ from the Liehiang Range, and 1 ♀ from the Yangtze Valley; Pichon sent one Salwin Valley, Feb. 1910.

136. **Strix aluco nivicola** (Blyth).

Syrnium nivicolum Blyth, *Journ. As. Soc. Bengal*, vol. xiv, p. 185 (1845) (Himalayas).

Although in my second article on Forrest's birds I used the name *harterti*, La Touche, I here call the Yunnan birds *nivicola* as the material available is not at all sufficient to decide whether they belong to the Himalayan *nivicola* Blyth or the Chinese *harterti* La Touche.

Forrest has sent 1 ♂ ad., 1 ♀ ad., 2 ♀♀ juv. Liehiang Range, 1 ♂ N.W. of Tengyueh; La Touche records a living adult Woodowl from Posi, and also a young one from near Yunnanfu. Forrest's ♂ from Liehiang is exactly similar to the type of *harterti*, but as Woodowls are extremely variable individually it will require a large series to decide if *harterti* and *nivicola* are separable, and if so whether all Yunnan examples are one or the other, or if both occur.

There is an example of this form in the British Museum from Yunnan Styan collection.

In the *Proceedings of the Biological Society of Washington*, vol. xxxviii, p. 10, 1925, J. H. Riley has described 2 birds collected by Dr. J. F. R. Roek, in the

Lichiang Mts., as new under the name of *Strix aluco nivipetens*, and his description fits Forrest's birds exactly. But I cannot yet decide from the material extant whether this name is a synonym of *harterti* or both synonyms of *nivicola*.

137. **Asio flammeus flammeus** (Pontopp.).

Strix flammea Pontoppidan, *Danske Atlas*, vol. i, p. 617, pl. xxv (1763) (Denmark).

Pichon obtained 2 examples in the plain of Tengyueh.

138. **Otus bakhamoena glabripes** (Swinh.).

Ephialtes glabripes Swinhoe, *Ann. Mag. Nat. Hist.* (4), vi, p. 152 (1870) (South China).

Ingram records a specimen, under the name of *O. lempiji erythrocampe* (Swinh.), from Mengtsh, but it is really an example of the above; Forrest sent 2 ♂♂ near Tengyueh, 1 ♀ Tengyueh Valley, 1 ♂, 1 ♀ ad., 1 ♂ 1, ♀ juv. Shweli-Salwin Divide; La Touche obtained 1 ♂ Kopaotsun, May 1921.

In Forrest's 1925 collection are 3 ? juv. hills N.W. of Tengyueh, 7,000 feet, April 1925.

139. **Otus malayana** (Hay).

Scops malayana Hay, *Madr. Journ.* vol. xiii, pt. 2, p. 147.

Bangs & Phillips enumerate 1 ♂, 1 ♀ Mengtsh, Oct. 1910.

140. **Ninox scutulata burmanica** Hume.

Ninox burmanica Hume, *Stray Feathers*, vol. iv, p. 285 (1876) (Pegu and Tenasserim).

Bangs & Phillips list 2 adults Mengtsh, Oct. and July, 1910; La Touche collected 1 ♂, 2 ♀♀ Mengtsh, Oct.-Nov. 1920.

In the 1925 collection of Forrest is 1 ? juv. hills N.W. of Tengyueh, 7,000 feet, Oct. 1925.

141. **Ketupa ceylonensis** (Gm.).

Strix ceylonensis Gmelin, *Syst. Nat.* vol. i, p. 287 (1788) (Ceylon).

La Touche collected 1 ♀ near Mengtsh, Oct. 1920.

142. **Bubo bubo jarlandi** La Touche.

Bubo bubo jarlandi La Touche, *Bull. B.O.C.* vol. xlii, p. 14 (1921) (Mengtsh).

Anderson obtained a ♀ at Momien, July 1868; and La Touche obtained 1 ♂, 1 ♀ alive at Mengtsh; the ♀ died, and is the type of the description.

143. **Rhopodytes tristis tristis** (Less.).

Melias tristis Lesson, *Traité d'Orn.* p. 132 (1831) (? Sumatra).

Forrest collected 2 ♀♀ in the Salwin Valley, April 1921; Andrews & Heller obtained 1 ♂ Chang-hung, Salwin River, March 1917; La Touche got 1 ♂ Hokow, Jan. 1921. In the British Museum are 1 ♂, 1 ? ad. Yuen Chang, Styan coll. In Forrest's 1925 collection he sent 1 ♀ Tengyueh Valley, 7,000 feet, Dec. 1925.

144. *Centropus bengalensis bengalensis* (Gm.).

Cuculus bengalensis Gmelin, *Syst. Nat.* vol. i, p. 214 (1788) (Bengal).

Forrest collected 1 ♂ ad. near Tengyueh, Aug. 1924, and 1 ? juv. Lichiang Range.

145. *Centropus sinensis sinensis* (Steph.).

Polophilus sinensis Stephens, *Gen. Zool.* vol. ix, p. 51 (1815) (China).

Captain Wingate collected 1 ♂ at Mōngkow, April 1899; Mr. La Touche says he heard this bird at Hokow.

146. *Centropus sinensis intermedius* (Hume).

Centrocoecyx intermedius Hume, *Stray Feathers*, vol. i, p. 454 (1873) (Dacca, The Doon, Thayetmyo).

Andrews & Heller collected 5 examples at Changlung, Salwin River, Mengting, and on the Namting River.

147. *Eudynamis scolopaceus enigmaticus* subsp. nov.

This bird is a puzzle; it has the typically coloured ♀ of the Indian bird, but the large size of *sc. malayana* Cab. & Hein. The latter, however, has a very different ♀. Average length of ♂ wing in *sc. scolopaceus* 194 mm., of *sc. enigmaticus* 205 mm. Type ♂ ad. from the hills N.W. of Tengyueh, 7,000 feet, April 1925, No. 6201.

Ingram enumerates 3 ♂♂, 4 ♀♀ from Mengtsz, May-June 1910; Colonel Rippon obtained it at Yungchang, April 1906; Bangs & Phillips list 17 examples Mengtsz, April-Oct.; M. Pichon sent 2 adult ♂♂; M. & Mme. Comby obtained 1 ♂, 1 ♀, ad. 1 ♂ juv.; Forrest collected 1 ♂ near Tengyueh, 1 ♂ Tengyueh Valley, 1 ♂ Tali Valley, and 1 ♂ Mekong-Salwin Divide; La Touche lists 1 example Yunnanfu, 8 from Mengtsz, July-Oct. 1920. In the 1925 collection Forrest sent 1 ♂ ad., 1 ♂ jun. hills N.W. of Tengyueh, 7,000 feet, April 1925; 1 ♀ Shweli-Salwin Divide, Aug. 1925. Pine forests.

148. *Surniculus lugubris dicruroides* (Hodgs.).

Pseudornis dicruroides Hodgson, *Journ. As. Soc. Bengal*, 1839, p. 136 (Nepal).

Anderson records 1 example Pensee, April 1868; La Touche records a young bird and an adult as seen at close quarters; Forrest sent in his 1925 collection 1 ♂, 1 ♀ hills N.W. of Tengyueh, 7,000 feet, May 1925. Forests.

149. *Cacomantis merulinus querulus* Heine.

Cacomantis querulus Heine, *Journ. f. Orn.* 1863, p. 352 (India, Nepal, Burma).

Forrest obtained 1 ♂ Mekong Valley, 2 ♂♂ ad., 1 ♂ juv. environment of Tengyueh, 1 ♂ Shweli-Salwin Divide, 1 ♂ juv. Shweli; Anderson records under the name of *rufiventris* a specimen from Pensee, April 1868; Ingram enumerates 5 ♂♂, 1 ♀ Mengtsz, April-July 1910; Bangs & Phillips enumerate 11 specimens Mengtsz, May-Sept.; M. Pichon sent 1 example; La Touche collected 1 ♂ ad., 5 ♂♂, 1 ♀ imm. Mengtsz, Feb.-Oct. 1920-1921. In the 1925 collection Forrest sent 2 ♂♂, 2 ♀♀ ad., 1 ♀ juv. hills N.W. of Tengyueh, 9,000 feet, April and Oct. 1925.

150. *Chalcitis maculatus* (Gm.).

Trogon maculatus Gmelin, *Syst. Nat.* vol. i, p. 404 (1788) (Ceylon, ex Brown Illustr.) (errore say Pegu).

Captain Wingate obtained 1 ♂ S.W. Yunnan, April 1899; M. & Mme. Comby collected 1 example; La Touche collected 1 specimen Hokow, April 1921. Forrest sent in his 1925 collection 1 ♂, 1 ♀ hills N.W. of Tengyueh, 8,000 feet, April 1925; 2 ♀♀ (sexed ♂) ad., 1 ? juv. hills W. of Tengyueh, 6,000 feet, Oct. 1925.

151. *Cuculus canorus telephonus* Heine.

Cuculus telephonus Heine, *Journ. f. Orn.* p. 352 (1863) (Japan).

Anderson records a ♂ Ponsee, April 1868; Captain Wingate collected 1 ♂ ad. S.W. Yunnan, April 1899; M. Pichon sent home 3 ad. and 1 ♂ juv.; Bangs & Phillips record 3 specimens Mengtsz, May 1911; Forrest sent 2 ♂♂, 3 ♀♀ ad., 3 ♂♂ juv. Lichiang Range, 1 ? juv. Talifu, 2 ♂♂ ad., 2 ♀♀, 2 ♂♂ juv. round Tengyueh; La Touche got 1 ♂ Yunnanfu, May 1921.

152. *Cuculus canorus bakeri* Hart.

Cuculus canorus bakeri Hartert, *Vög. paläark. Faun.* pt. vii. vol. ii, p. 948, No. 1390 (1912) (Shillong).

Bangs & Phillips list 6 examples Mengtsz; Andrews & Heller obtained 2 ♂♂ ad. Tengyueh, Ting, and Wa-hui; La Touche collected 1 ♀ Mengtsz, April 1921. In Forrest's 1925 collection are 4 ♂♂, 1 ♀ ad., 1 ♂ juv. hills N.W. of Tengyueh, 6,000-8,000 feet, April 1925. Thickets and forests.

153. *Cuculus optatus* Gould.

Cuculus optatus Gould, *Proc. Zool. Soc. London*, pt. xiii, p. 18 (1845) (Port Essington).

Ingram records 2 ♀♀ Mengtsz, May 1910; Bangs & Phillips enumerate 1 ♂ Mengtsz, April 1911; Forrest sent 2 ♂♂ ad., 1 ♀ juv., Lichiang Range.

154. *Cuculus intermedius intermedius* Vahl.

Cuculus intermedius Vahl, *Skriv. af Nat. Selskabet Kjøbenhavn*, vol. iv, p. 58 (1789) (Tranquebar).

Oustalet records this Cuckoo from Prince H. d'Orleans collection; Forrest sent 2 ♂♂, 2 ♀♀, 1 ? Lichiang Range, 1 ♂, 1 ♀ (red phase) N.W. of Tengyueh, 1 ♀ (grey phase), Tengyueh Valley, 1 ♂ Shweli. In the 1925 collection are 2 ♂♂, 1 ♀ hills N.W. of Tengyueh, 8,000 feet, May 1925; 1 ♀ N. of Tengyueh, 6,000 feet, April 1925. Forests.

155. *Cuculus sparverioides* Vig.

Cuculus sparverioides Vigors, *Proc. Comm. Zool. Soc. London*, pt. i, p. 173 (1832) (Himalaya).

Bangs & Phillips quote 1 example minus precise data; Forrest collected 1 ♂, 1 ♀ juv. T'ong Shan, 1 ♂ juv. Shweli, 1 ♂ juv. Mekong Valley, 3 ♂♂ ad. Lichiang Range; 1 ♂, 3 ♀♀ ad., 1 ♂ juv. Tengyueh and vicinity.

In his 1925 collection are 1 ♂, 2 ♀♀ hills N.W. of Tengyueh, 8,000 feet, April and Oct. 1925; 1 ♂ hills N. of Tengyueh, 6,000 feet, April 1925; 1 ♂, 1 ♀ hills round Tengyueh Valley, 6,000 feet, Dec. 1925. Forests.

156. *Yunx torquilla japonica* Bp.

Yunx japonica Bonaparte, *Consp. avium*, vol. i, p. 112 (1850) (Japan).

Colonel Rippon obtained this bird, hills N.E. of Talifu, March 1902; Captain Wingate collected 1 ♂ ad. S.W. Yunnan, April 1899; Oustalet enumerates it from the collection of Prince H. d'Orleans; Bangs & Phillips enumerate 10 examples from Mengtsz, Loukouchai, and Shi-ping; Andrews & Heller got 1 ♀ ad. at Yung-chung-fu, Jan. 1917; M. & Mme. Comby collected 1 specimen recorded by Ménégau as *torquilla torquilla*; Forrest sent 1 ♂ Lichiang Range; La Touche records 1 ♂, 1 ♀ Mengtsz, Oct.-Dec. 1920, 1 ♀ Milati, Feb. 1921.

157. *Picumnus innominatus chinensis* (Harg.).

Vivia chinensis Hargitt, *Ibis*, 1881, p. 288, pl. vii (May-chee, China).

Ingram records 1 ♂ Mengtsz, July 1910; Bangs & Phillips enumerate 3 ♂♂ Mengtsz and Loukouchai; Forrest collected 1 ♂ Yangtze Valley, Sept. 1918; La Touche obtained 2 ♂♂, 1 ♀ Milati, Feb. 1921.

158. *Dryocopus forresti* Rothsch.

Dryocopus forresti Rothschild, *Bull. B.O.C.* vol. xliii, p. 9 (1922) (Mekong Valley).

Forrest is the only one of the explorers in Yunnan who has obtained this fine bird. As *M. javensis feddeni* has also only been got once in Yunnan it is impossible at present to define their relationship; I prefer for this reason therefore to still treat *D. forresti* as a distinct species, and not as a subspecies of *javensis*. Forrest collected 1 ♂, 1 ♀ Mekong Valley, Aug. 1921, 1 ♂ juv. Lichiang Range. The young ♂ has the red head of the adult ♂, but not the red moustachial band.

159. *Dryocopus javensis feddeni* (Blanf.).

Mulleripicus feddeni Blanford, *Journ. As. Soc. Bengal*, 1863, p. 75 (Pegu).

Andrews & Heller obtained an adult ♂ Malipa, March 1917.

160. *Dryocopus martius khamensis* (But.).

Picus martius khamensis Buturlin, *Ann. Mus. Zool. Acad. Imp. St. Petersburg*, vol. xiii, p. 229 (1908) (Eastern Slopes Thibet Plateau).

Forrest also was the only collector to obtain the "Great Black Woodpecker" in Yunnan; he sent 2 ♂♂, 3 ♀♀ Mekong-Salwin Divide, Sept. 1921.

161. *Picoides tridactylus funebris* Verr.

Picoides funebris Verreaux, *Nouv. Arch. Mus.* vol. vi, *Bull.* p. 33 (1870) (Mts. of Chinese Thibet).

Forrest also was the only collector to obtain this well-marked and very rare race of *tridactylus*. He sent 2 ♂♂ from the Mekong-Salwin Divide, and 1 ♂ Lichiang Range.

Note on *Dryobates semicoronatus* and races.

A great deal of confusion appears to exist as to the status of and number of the subspecies of *Dryobates semicoronatus* (Malh.). The following names have been applied to these birds within our limits: *scintilliceps* Swinh.; *kaleensis* Swinh.; *omissus* Rothsch.; *permixtus* La Touche; and *obscurus* La Touche.

Of these names *kaleensis* Swinh. is at once ruled out, as it was applied to the race confined to Formosa; *obscurus* La Touche stands for the smaller race from S.E. Yunnan, and the rest of S. and S.W. Yunnan; the birds named by Mr. La Touche *kaleensis* from Milati as being the same as the Fokhien race I refer provisionally to *scintilliceps* Swinh., though it is possible that the Peking birds will prove to be separable from the more southern examples. There remain the names *permixtus*, given by La Touche to the larger Milati and Yunnanfu examples, and my *omissus* given to the larger birds from the Lichiang Range; these birds are the same and both were described in 1922 in the *Bull. B.O.C.* vol. xliii, but as *omissus* appears on p. 10 and *permixtus* on p. 44 my name has priority.

162. *Dryobates semicoronatus scintilliceps* (Swinh.).

Picus scintilliceps Swinhoe, *Ibis*, 1863, p. 96 (Peking).

Anderson records a bird from Sanda under the name of *rubricatus*, which until the type is compared I can only record under this heading; Captain Wingate obtained this bird at Yunnan City, Feb. 1899; Ingram records 1 ♀ Mengtsh; Bangs & Phillips 10 examples from Mengtsh and Loukouchai; La Touche ♂♀ Milati under the name of *kaleensis*.

163. *Dryobates semicoronatus obscurus* La Touche.

Dryobates pygmaeus obscurus La Touche, *Bull. B.O.C.* vol. xliii, p. 14 (1921) (Hokow).

This bird has, it appears, only been got in Yunnan by Forrest, Wingate, La Touche, and Col. Rippon. Forrest sent 1 ♂, 2 ♀♀ Shweli-Salwin Divide, 1 ♂, 1 ♀ Shweli Valley, 1 ♂ Yangtze Valley, 1 ♀ Tsong-Shan, 1 ♂ Tengyueh Valley, 1 ♂, 6 ♀♀ vicinity of Tengyueh, 5 ♀♀ N.W. of Tengyueh.

♂ wing measurement, 93 mm.

In my articles on Forrest's collections all the examples of *semicoronatus* are quoted under *scintilliceps* or *omissus*, and not separated into their races.) Captain Wingate sent 1 example S.W. Yunnan, April 1899. In his 1925 collection Forrest sent 1 ♂ Shweli-Salwin Divide, 7,000 feet, July 1925; 1 ♂, 1 ♀ hills N. of Tengyueh, 7,000 feet, Oct.-Nov. 1925; 4 ♂♂ (1 sexed ♀), 4 ♀♀ Tengyueh Valley, 6,000 feet, Nov.-Dec. 1925; Colonel Rippon obtained 2 ♀♀ Yangpi-Chutung Road, April 1906, 1 ♀ Yangtze Big Bend, March 1906.

164. *Dryobates semicoronatus omissus* Rothschild.

Dryobates pygmaeus omissus Rothschild, *Bull. B.O.C.* vol. xliii, p. 10 (1922) (Lichiang Range).

I must amend the description of this form. I had distinguished it as being darker below and with heavier stripes; but after comparing larger series I find it only differs from *D. s. obscurus* in its much larger size. ♂ wing measurement, 108 mm.

Forrest sent 3 ♂♂, 8 ♀♀ Lichiang Range; La Touche records under the name of *permixtus* 1 ♂ Milati, 1 ♂, 1 ♀ Yunnanfu, and 1 ♀ ad., 1 ♂, 2 ♀♀ juv. Kopaotsun.

165. *Dryobates obscurior* Rothsch.

Dryobates obscurior Rothschild, *Bull. B.O.C.* vol. xliii, p. 10 (1922) (Lichiang Range).

Closely allied to the forms of *semicoronatus*, but the head is almost entirely black and the bill is different.

The ♀ sent by Forrest from the Lichiang Range remains unique.

166. *Dryobates hyperethrus hyperethrus* (Vigors).

Picus hyperethrus Vigors, *Proc. Comm. Zool. Soc. London*, pt. i, p. 23 (1831) (Himalayan Mts.).

Ingram, Outram Bangs, La Touche, and I myself have erroneously identified the Yunnan examples of this species with the Chinese *D. h. subrufinus* (Cab. & Hein.), whereas they agree with Himalayan and Shan States specimens. Hitherto up to 1924 the East Himalayan birds have been acknowledged as the typical race, and this led to Dr. Hartert in his second volume on *Palaearctic Birds* describing the West Himalayan and Cashmere birds as a new race under the name of *D. h. marshalli*. In 1924 in the *Ibis*, pp. 468-473, Messrs. Ticehurst & Whistler proceed to show that the hitherto accepted restricted "Type Localities" of Vigors' Himalayan birds could not be accepted, and that in view of the facts they bring the Type Locality of the collection could only be a district they propose to define as the Simla-Almora district. If this is admitted Dr. Hartert's *D. h. marshalli* becomes a synonym of *D. h. hyperethrus*, and the East Himalayan bird must get a name which they proceed to give as *Dryobates hyperethrus sikkimensis* nom. nov. However, the figure in Gould's *Century of Birds of the Himalayas* does not agree with West Himalayan examples, and as it was taken from Vigors's type I do not consider the case proved satisfactorily, and therefore retain here the name of *hyperethrus* as hitherto for the East Himalayan bird. Colonel Rippon collected an example at the Yangtze Big Bend, March 1906; Captain Wingate got a ♂ ad. S.W. Yunnan, April 1899; Oustalet enumerated it among the birds collected by Prince H. d'Orleans; Bangs & Phillips record 1 ♀ Mengtsh, March; Andrews & Heller obtained 2 ♂♂ ad. Lichiang Fu, Nov. 1916; Forrest sent 5 ♂♂, 3 ♀♀ from the Lichiang Range; La Touche enumerates 1 ♀ from Milati. In Forrest's 1925 collection is 1 ♂ juv. hills N. of Tengyueh, 8,000 feet, Oct. 1925.

There is also in the British Museum a ♀ Yunnan, Styan coll.

167. *Dryobates pernyi pernyi* (Verr.).

Picus pernyi Verreaux, *Rev. and Mag. Zool.* 1867, p. 271, pl. xvi (North China).

Colonel Rippon obtained this bird at the Yangtze Big Bend, March 1906; Andrews & Heller got 1 ♂ ad. Lichiang Fu, Nov. 1916.

168. *Dryobates atratus* (Blyth).

Picus atratus Blyth, *Journ. As. Soc. Bengal*, 1849, p. 803 (Tanasserim).

Captain Wingate obtained 1 ♂ ad. in S.W. Yunnan, April 1899.

169. *Dryobates darjellensis desmursi* (Verr.).

Picus desmursi Verreaux, *Nouv. Arch. Mus. Paris*, vol. vi, *Bull.* p. 33 (1870) (Mts. of Chinese Thibet).

In my former articles I recorded these birds simply as *darjellensis*, but Dr. Rensch has pointed out (*Zool. Erg. W. Stötz. Exp. in Abh. and Ber. Mus. Dresd.*

vol. xvi, No. 2, pt. iii, p. 38) that the Chinese examples have smaller bills; viz., *d. darjellensis* 33-36 mm., *d. desmursi* 26-30 mm.

Forrest sent 1 ♀ Tengyueh District; 1 ? juv. Mekong Valley; 1 ♂, 3 ♀♀ Shweli-Salwin Divide; 1 ♀ juv. Shweli Valley. In the 1925 collection are 1 ♂, 1 ♀ N. of Tengyueh, 6,000 feet, April 1925; 1 ♀ Shweli-Salwin Divide, 9,000 feet, July 1925.

170. *Dryobates cathpharius tenebrosus* subsp. nov.

♂. Differs from *c. cathpharius* in the less yellow, more greyish underside, which is much more heavily spotted with black.

In the 1925 collection Forrest sent 1 ♂ apparently ad. (type) Shweli-Salwin Divide, 7,000 feet, July 1925.

171. *Dryobates major stresemanni* Rensch.

Dryobates major stresemanni Rensch., *Zool. Erg. W. Stütz. Exp. in Abh. and Ber. Mus. Dresd.* vol. xvi, No. 2, pt. iii, p. 38 (1924) (Tsalila).

On p. 37 of above work Dr. Rensch gives his reasons for not retaining *cabanisi* Malh. as a species as Hartert does, and I am bound to say he appears to be correct. He says that the facts that induced Hartert to place *cabanisi* in a separate "Formenkreis," viz. the black scapulars and the narrower white wing-spots in view of the large series collected by Weigold during the above expedition, lose their value, as there are several with brown and white scapulars and larger spots. Moreover, the "Formenkreis" *cabanisi* and the forms placed under the "Formenkreis" *major* by Hartert exclude one another geographically.

Now as to *cabanisi* and the allied forms; Hartert retains them all under *cabanisi*, but Dr. Rensch has separated the extreme forms as *cabanisi* from N. China and *stresemanni* from Thibet and S.W. China, and says there may yet be some further recognisable races. I have examined our large series from Eastern and South Central China, etc., and certainly find that they stand intermediate between my Yunnan and Thibet birds, and true *cabanisi* from N. China. These for the present must stand as *Dryobates major mandarinus* Malh. At the B.O.C. meeting on Feb. 10, 1926, Mr. Stuart Baker described the birds collected by Forrest in Yunnan under the name of *cabanisi stephensoni*; as, however, Dr. Rensch's name has 14 months' priority, Mr. Baker's name cannot stand.

Colonel Rippon obtained 3 ♀♀ Yangtze Big Bend, March 1906, 1 ♂ Yangpi Valley, April 1906, and 1 ♂ Chutung-Yangpi Road, March 1902; Bangs & Phillips record 5 specimens Mengtsh, Shi-ping, and Linan Fu; Captain Wingate collected 2 ♂♂ ad. near Yunnan City; Forrest sent home 1 ♂, 3 ♀♀ Tengyueh District, 2 ♂♂ ad. Shweli-Salwin Divide, 1 ♂, 4 ♀ ad., 1 ♂ juv. Lichiang Range; M. & Mme. Comby obtained 1 example. In Forrest's 1925 collection are 2 ♀♀ (sexed ♂♂) Shweli-Salwin Divide, 9,000 feet, July 1925; 1 ♂ juv. N. of Tengyueh, 7,000 feet, April 1925; 1 ♂, 1 ♀ (sexed ♂) Tengyueh Valley, 6,000 feet, Dec. 1925.

172. *Picus canus guerini* (Malh.).

Chloropicus guerini Malherbe, *Rev. and Mag. Zool.* 1849, p. 539 (China).

Oustalet enumerates this subspecies among Princee H. d'Orleans' birds, and Ménégaux identified 1 ♀ collected by M. Pichon as also belonging to this form.

As, however, there are several Chinese races of *canus*, and the material in Paris from elsewhere is not in my opinion sufficient for accurate comparison, it is quite possible that in both these records the examples have been wrongly identified. Mr. La Touche also mentions a bird, under the name of *P. canus* subsp., as possibly this form.

173. *Picus canus sordidior* (Rippon).

Gecinus sordidior Rippon, *Bull. B.O.C.* vol. xix, p. 32 (1906) (W. Yunnan).

Colonel Rippon first described this bird from the Yangtze Big Bend, March 1906 and Lichiang, April 1906; Andrews & Heller collected 2 ♂♂, 1 ♀ ad. at Hui-yao and Malipa; Forrest sent 5 ♂♂, 2 ♀♀ ad., 5 ♂♂, 6 ♀♀ juv. Lichiang Range, 2 ♂♂ ad., 1 ♀ juv. Tengyueh District, 2 ♀♀ ad. Tengyueh Valley, 2 ♀♀ juv. Mekong Valley, 2 ♂♂, 2 ♀♀ ad. Shweli Valley. 1 ♂ Mekong-Salwin Divide, 1 ♀ Shweli-Salwin Divide.

In the 1925 collection are 1 ♂ Tengyueh Valley, 6,000 feet, Dec. 1925; 1 ♂ juv. N. of Tengyueh, 6,000 feet, April 1925; 1 ♂, 1 ♀ N.W. of Tengyueh, 9,000 feet, April 1925. Anderson enumerates 1 ♂ juv. under the name of *Picus striolatus* Blyth, June 1868, Momien. Hargitt identified this as *occipitalis* (nom. præocc.) = *barbatus* Gray & Hardwicke, but Mr. Kinnear is now convinced, and I am too, that it is really *canus sordidior* (see further *sub* No. 166). Colonel Rippon's specimens in the British Museum consist of 1 ♂ Gyi-dzin-shán, E. of Talifu, March 1902; 2 ♂♂, 2 ♀♀ Lichiang Valley, March and April 1906; 1 ♂ (type) Yangtze Big Bend, March 1906.

174. *Picus canus yunnanensis* La Touche.

Picus canus yunnanensis La Touche, *Bull. B.O.C.* vol. xliii, p. 44 (1922) (Milati (♂ type), Kopaotsun, Yunnanfu).

Mr. La Touche lays great stress on the much brighter coloration than in *c. sordidior*, and the larger size and brighter coloration than in *c. jacobsi* and *c. ricketti*.

Bangs & Phillips record 8 examples from Mengtshz and Shi-ping under the name of *canus sordidior* Ripp.; La Touche lists 1 ♂, 1 ♀ Milati, Jan. 1921, 4 ♂♂, 5 ♀♀ Kopaotsun and Yunnanfu, May 1921.

175. *Picus vittatus myrmecophoneus* Stresem.

Picus myrmecophoneus Stresemann, *Verh. Orn. Ges. Bay.* vol. xiv, pt. iv, p. 289 (1920) (nom. nov. for *P. striolatus* Blyth).

Anderson records under the name of *Picus striolatus* 1 ♂ ad. and 1 ♂ juv. (*a, b, ♂*), Momien, June 1868. Hargitt says (in *Cat. Birds Brit. Mus.* xviii, p. 56 footnote) that the young bird of Anderson's was wrongly identified, and that it is *gecinus occipitalis*, Vig. = *canus sanguiniceps* Stuart Baker. Mr. Kinnear, when kindly helping me with this paper, has, on re-examination of Anderson's bird, come to the conclusion that this young bird is neither *myrmecophoneus* nor *c. barbatus*, but is only a young *canus sordidior*. He also considers *myrmecophoneus* a subspecies of *vittatus*. Dr. Stresemann, however, when he replaced the preoccupied names *striolatus* Blyth and *xanthopygius* Bp. by the new name *myrmecophoneus*, treats this form as a species—I only provisionally, however, treat it as a race of *vittatus*, as the whole of the exotic "Green Woodpeckers"

Picus want thoroughly revising, and until then I do not wish to express a final opinion on this bird.

There remains as the only record for Yunnan Anderson's ♂ ad. Momien, June 1868; but until this is properly compared the right of this bird to a place in the avifauna of Yunnan is not definitely established.

176. **Chrysocolaptes guttaeristatus guttaeristatus** (Tick.).

Picus guttaeristatus Tickell, *Journ. As. Soc. Bengal*, 1833, p. 578 ().

Andrews & Heller collected 2 ♂♂ ad. Malipa, Feb. 1917.

177. **Micropternus fokiensis** (Swinh.).

Brachypternus fokiensis Swinhoe, *Proc. Zool. Soc. London*, 1863, p. 87 (Fokien).

M. Pichon collected 1 ♀.

178. **Sasia ochracea** Hodgs.

Sasia ochracea Hodgson, *Journ. As. Soc. Bengal*, vol. v, p. 778 (1836) (Nepal).

Bangs & Phillips record 1 ♂ ad. Loukouchai, Jan. 1911; La Touche obtained 1 ♂ Hokow, April 1921.

179. **Halcyon smyrnensis fusca** (Bodd.).

Alcedo fusca Boddaert, *Tabl. Pl. Enl.* p. 54 (1783) (Malabar Coast).

Anderson collected this Kingfisher at Mengoon, Jan. 1868; Ingram records 5 ♂♂ ad., 1 ? juv. Mengtsh, May-July 1910; Captain Wingate obtained 1 ♂ ad. at Mōng-Kon, April 1899; Colonel Rippon also got this bird; Bangs & Phillips enumerate 24 specimens from Mengtsh; M. Pichon sent home 1 example; Forrest got 2 ♂♂ Tengyueh District, 1 ♂ N. of Tengyueh, 1 ♂ Shweli Valley; La Touche brought back 8 examples Mengtsh, July 1920-March 1921, 1 ♂ Hokow, March 1921; 1 ♂, 1 ♀ Yuen Chang, Styau coll., are in the British Museum.

In Forrest's 1925 collection are 2 ♂♂ Tengyueh Valley, 5,300 feet, Dec. 1925, 1 ♂ hills N.W. of Tengyueh, 6,000 feet, June 1925. Streams. Bill deep crimson; feet scarlet; iris brown.

180. **Halcyon pileatus** (Bodd.).

Alcedo pileata Boddaert, *Tabl. Pl. Enl.* p. 41 (1783) (China).

Bangs & Phillips record 5 specimens Mengtsh; La Touche 1 ♀ Mengtsh, Sept. 1920.

Forrest's 1925 collection contains 1 ♀ hills N.W. of Tengyueh, 6,000 feet, June 1925. Streams. Bill deep crimson; feet scarlet; iris brown.

181. **Alcedo atthis bengalensis** Gm.

Alcedo bengalensis Gmelin, *Syst. Nat.* vol. i, pt. 1, p. 450 (1788) (Bengal).

Anderson obtained a single specimen at Muangla, May 1868; Colonel Rippon collected an example east of Talifu, March 1902; Ingram records 2 ♂♂ Mengtsh, April-May 1910; Bangs & Phillips enumerate 8 specimens from Mengtsh; M. & Mme. Comby obtained 1 example; M. Pichon also sent 1 specimen; Forrest collected 1 ♂ Lichiang Range; 1 ♂ ad., 1 ♂, 2 ♀♀ juv. Tengyueh

Valley, 1 ♂ vicinity of Tengyueh ; La Touche records 6 examples from Mengtze Aug. 1920–1921, and says it occurs all over S.E. plateau and at Hokow. In Forrest's 1925 collection are 7 ♂♂, 3 ♀♀ ad., 1 ♂ juv. Tengyueh Valley, 5,300–5,600 feet, Sept.–Dec. 1925. Streams. Bill black with some red on undermandible ; legs and feet crimson, claws black ; iris dark brown. In the British Museum is also 1 example Talifu Valley, Feb. 1906, Colonel Rippon.

182. *Ceryle rudis leucomelanura* Reichenb.

Ceryle leucomelanura Reichenbach, *Handb. Alced.* p. 21, pl. 409b, f. 3488 (1851) (Ceylon).

Forrest sent 4 ♂♂, 1 ♀ Tengyueh Valley, April 1919. In his 1925 collection Forrest sent 3 ♂♂, 3 ♀♀ Tengyueh Valley, 5,300–5,500 feet, Dec. 1925. Streams. Bill and feet black ; iris brown.

183. *Ceryle lugubris guttulata* Stejn.

Ceryle guttulata Stejneger, *Proc. U.S. Nat. Mus.* vol. xv, pp. 294, 295 (1893) (India and China).

Forrest collected 1 ♂ jun. Tung Chuan Valley, May 1921, and 1 ♂ jun. Ma-Chang Valley, Feb. 1922.

184. *Eurystomus orientalis calonyx* Sharpe.

Eurystomus calonyx Bowdler Sharpe, *Proc. Zool. Soc. London*, 1890, p. 551 (Nepal).

Bangs & Phillips enumerate 1 ♂ Mengtze, Oct. 1910 ; Forrest sent 1 ♂ ad., 2 ♀♀ juv. N.W. of Tengyueh, July 1924 ; La Touche records 1 ♂ imm. Mengtze, Oct. 1920. In Forrest's 1925 collection were sent 2 ♂♂, 1 ♀ hills N.W. of Tengyueh, 8,000 feet, Sept. 1925. Forests.

185. *Coracias benghalensis affinis* McClell.

Coracias affinis McClelland, *Proc. Zool. Soc. London*, p. 164 (1839) (Assam).

Some of Forrest's birds show traces of *benghalensis*.

Anderson records 3 examples from the Sanda Valley, May 1868 ; Captain Wingate obtained 1 ♂ ad. Ching-tung, March 1899 ; Andrews & Heller got 3 specimens at Hsiao, Mengting, and Cheng-kang, Salwin Divide, and Shuichai, Mekong River, Jan. and Feb. 1917 ; M. Pichon collected 1 specimen ; Forrest sent 1 ♂ ad., 1 ♀ juv. Shweli Valley, 1 ♂, 1 ♀ ad. Shweli-Salwin Divide, 3 ♂♂ Tengyueh District, 4 ♂♂, 1 ♀ Tengyueh Valley, 1 ♀ Lichiang Range ; La Touche has 1 example Yuangchiang, Nov. 1920. In Forrest's 1925 collection he sent 1 ♂ Shweli Valley, 6,000 feet, July 1925, 1 ♂, 1 ♀ Tengyueh Valley, 5,300–6,000 feet, Oct.–Dec. 1925, 3 ♀♀, north of Tengyueh, 5,000–6,000 feet, April 1925, 1 ♀ vicinity of Tengyueh, 6,000 feet, Aug. 1925. Open country.

186. *Serilophus lunatus elizabethae* La Touche.

Serilophus lunatus elizabethae La Touche, *Bull. B.O.C.* vol. xlii, p. 14 (1921) (Hokow).

This beautiful bird was described by Mr. La Touche, who obtained 2 ♂♂, 2 ♀♀ Hokow, March 1921 ; Mr. Kuroda records it from Laokay on the opposite bank of the Red River to Hokow ; Andrews & Heller obtained 1 ♂ at Mengting, Feb. 1917. (This may be the typical form or else M. Delacourt's recently described Annam race : Bangs identified it as the typical *lunatus lunatus*.)

187. *Upupa epops saturata* Lönnb.

Upupa epops saturata Lönnberg, *Arkiv. för. Zoologi*, vol. v, No. 9, p. 29 (1909) (Kjächta).

Ingram records 4 ♂♂, 1 ♀ Mengtsh, April–June 1910; Bangs & Phillips enumerate 10 examples from Mengtsh; Andrews & Heller got 1 ♂ ad. Yung-chang-Fu, Jan. 1917; in the British Museum is an example from Yunnan, Styan coll. In Forrest's 1925 collection is 1 ♂, 1 ♀ Tengyueh Valley, 5,300 feet, Dec. 1925.

188. *Upupa epops orientalis* Baker.

Upupa epops orientalis Stuart Baker, *Bull. B.O.C.* vol. xlii, p. 29 (1921) (new name for *Upupa indica* Reichenb. nec Latham).

Bangs & Phillips record 14 specimens from Mengtsh under the name *Upupa epops* subsp. ?; Oustalet records it from Prince H. d'Orleans' collection simply as *Upupa epops*; Forrest sent 1 ♂ Lichiang Valley; La Touche obtained 1 ♂, 1 ♀ imm.

189. *Melittophagus leschenaulti swinhoei* (Hume).

Merops swinhoei Hume, *Nests and Eggs Ind. Birds*, I, p. 102 (1873) (India).

Captain Wingate obtained 1 ♂ at Möng-sen, April 1899; Andrews & Heller 1 ♂, 2 ♀♀ ad. Chang-lung, Salwin River, March 1917.

190. *Merops philippinus* Linn.

Merops philippinus Linnaeus, *Syst. Nat.* edit. 13 (Vindob.), vol. i, p. 183 (1787) (Philippine Islands).

Ingram records 11 examples from Mengtsh, March–May 1910; Bangs & Phillips' 13 specimens also from Mengtsh, April–Sept.; La Touche got 13 specimens Mengtsh, July–Sept. 1920; M. & Mme. Comby collected 1 example.

191. *Merops orientalis ferrugiceps* Anders.

Merops viridis var. *ferrugiceps* Anderson, *Anat. and Zool. Res.* p. 582, No. 25 (in text) (1878) (Burma; and Sanda, Yunnan).

The name *ferrugiceps* was given to this race of *orientalis* (*viridis* auct.) already in 1844 by Hodgson, but it remained a *nomen nudum* until Anderson stated in the above-quoted work that all his Burmese and Yunnan birds belonged to the variety *ferrugiceps*, and stated the differences from the Indian typical subspecies. Anderson got one bird at Sanda Valley, May 1868; Captain Wingate collected 1 ♂ ad. Ching-tung, March 1899; M. Pichon sent 1 example.

192. *Cyanops franklinii franklinii* (Blyth).

Bucco franklinii Blyth, *Journ. As. Soc. Bengal*, vol. xi, p. 167 (1842) (Darjiling).

Bangs & Phillips enumerate 6 examples from Loukouchai, Jan.–Feb. 1911; Andrews & Heller collected 1 ♂ ad. Tai-ping-pu, April 1917; Forrest sent 2 ♂♂, 1 ♀ Shweli Valley, 1 ♂ Tengyueh District. In the 1925 collection are 3 ♂♂ hills N.W. of Tengyueh, 8,000 feet, April 1925; 2 ♂♂ hills N. of Tengyueh, 7,000 feet, Oct. 1925. Forcasts.

193. *Cyanops asiatica asiatica* (Lath.).

Trogon asiatica Latham, *Ind. Orn.*, vol. i, p. 201 (1790) (India)

Captain Wingate collected 2 ♂♂ ad. Wei-yüan, Upp. Mekong River, March 1899; Andrews & Heller collected 1 ♂, 1 ♀ Chang-lung Salwin River, March 1917; M. Pichon sent 2 examples from the Salwin Valley; Forrest obtained 1 ♂ Shweli Valley, 1 ♂ Tali Valley, and 1 ♂ vicinity of Tengyueh; Anderson obtained 3 examples at Ponsee and the neighbourhood; in the British Museum is an example Tengyueh, Howell coll., and 1 Yunnan, Styán coll.

194. *Cyanops asiatica davisoni* (Hume).

Megalaima davisoni Hume, *Stray Feathers*, vol. v, p. 108 (1877) (Central Tenasserim).

In my first Yunnan article I threw doubt on Oustalet's record, as does Ingram; but now Bangs & Phillips record 1 ♂ and ♀ from Loukouchai, and MM. Ménégauz and Didier in their list of M. Pichon's collection under *C. asiatica asiatica* say they have re-examined the bird got by Prince H. d'Orleans which came from Man-hao, Yunnan-Tonkin frontier, and it really is *davisoni*; 2 ♀♀ Yuen Chang, Styán coll., are in the British Museum.

195. *Megalaema virens virens* (Bodd.).

Bucco virens Boddaert, *Tabl. Pl. Enl.*, p. 53 (1783) (China!).

Forrest's 1925 collection contains 2 examples of this bird, new to the Yunnan list.

2 ♂♂ Shweli-Salwin Divide, 8,000-10,000 feet, Aug.-Oct. 1925. Forests. Bill, upper mandible slaty black, base yellow, lower mandible base yellow, remainder horn-grey; feet grey-black; iris brown.

196. *Psittacula cyanocephala* (Linn.).

Psittacus cyanocephalus Linnaeus, *Syst. Nat.* edit. xii, vol. i, p. 141, No. 10 (1766) (East Indies).

Anderson records 2 ♂♂ juv. Momien, July 1868. (It is quite possible that Anderson wrongly identified these young birds and that they are young *finschi*.)

197. *Psittacula schisticeps finschi* (Hume).

Palaeornis finschi Hume, *Stray Feathers*, vol. ii, p. 509 (1874) (Kollidoo, Salwin River).

Forrest collected 2 ♂♂, 1 ♀ ad. Yangtze Valley, 2 ♂♂ ad., 2 ♀♀ juv. Shweli-Salwin Divide, 4 ♂♂, 1 ♀ ad., 2 ♀♀, 1 ? juv. Lichiang Range, 5 ♂♂, 1 ♀ ad., 3 ♀♀ juv. N.W. of Tengyueh. In the 1925 collection are 3 ♂♂ ad. (1 sexed ♀ errore), 2 ♂♂, 2 ♀♀ juv. Shweli-Salwin Divide, 9,000 feet, Oct. 1925. Forests.

198. *Psittacula derbyana* (Fraser).

Palaeornis derbyanus Fraser, *Proc. Zool. Soc. London*, 1850, p. 245, pl. xxv (no locality), cage bird.

Oustalet separated the Upper Yangtze birds under the name of *P. salvadorii*, but I can find no constant difference in size or colour of under wing-coverts.

Oustalet records this bird from Prince H. d'Orleans' collection under the name *salvadorii*; Ogilvie Grant records a ♂ ad. Ching-tung, March 1899, obtained by Captain Wingate as *salvadorii*, saying it was quite different from *derbyana*,

but the differences he cites are those of the sexes. Forrest sent 1 ♂, 1 ♀ ad., 1 ♂ juv. Lichiang Range, Sept. 1922; in the British Museum there are 1 ♂ Kung-Tung, Aug. 1899, Styan coll., and 1 ? Tengyueh, E. B. Howell coll.

199. **Psittacula fasciata** (P. L. S. Müll.).

Psittacus fasciatus P. L. S. Müller, *Natursyst. Suppl.* p. 74, 6 f. (1776) (Pondichery).

Captain Wingate collected 1 ♂ ad. S.W. Yunnan, April 1899.

200. **Pyrotrogon erythrocephalus erythrocephalus** (Gould).

Trogon erythrocephalus Gould, *Proc. Zool. Soc. London*, Part II, 1834, p. 25 (Rangoon).

1 ♂ ad. was obtained at Namting River, March 1917, by Andrews & Heller, which Bangs emphasizes strongly to be the typical subspecies.

201. **Pyrotrogon erythrocephalus yamakensis** (Rick.).

Harpactes yamakensis Rickett, *Bull. B.O.C.* vol. viii, p. xlvi (1899) (Fokien).

Forrest sent 1 ♂, 2 ♀♀ Shweli-Salwin Divide, 1 ♂, 1 ♀ vicinity of Tengyueh.

The 1925 collection contains 1 ♂, 1 ♀ ad., 1 ♂ juv. Shweli-Salwin Divide, 9,000 feet, Oct. 1925. Forests. Bill black; feet pale brown; iris pale yellow.

202. **Anthracaceros malabaricus affinis** (Blyth).

Buceros affinis Blyth, *Journ. As. Soc. Bengal*, vol. xviii, p. 803 (1849) ("Deyra Doon").

Andrews & Heller collected 1 ad., ♂ 1 ? imm. on the Namting River, March 1917.

203. **Caprimulgus macrourus ambiguus** Hart.

Caprimulgus macrourus ambiguus Hartert, *Ibis*, p. 373 (1896) (Malay Peninsula, Burma, etc.).

Bangs & Phillips enumerate 1 ♀ Mengtsh, Dec. 1910; Forrest collected 1 ♂ T'ong Shán, 1 ♂ Lichiang Range.

204. **Caprimulgus indica jotaka** Temm. & Schleg.

Caprimulgus jotaka Temminck & Schlegel, *Siebold's Fauna Japonica Aves*, p. 37, pl. xii (1847) (Japan).

Anderson records an example of this species from Ponsec, April 1868; Forrest sent 1 ♀ Mekong-Salwin Divide; 2 ♀♀ Lichiang Range.

205. **Caprimulgus monticola** Frankl.

Caprimulgus monticolus Franklin, *Proc. Conn. Zool. Soc. London*, 1831, p. 116 (Vindhyan Hills).

Ingram records 1 ♂ Mengtsh, July 1910; Bangs & Phillips 1 ♂ Mengtsh, Aug. 1910.

206. **Lyncornis cerviniceps** Gould.

Lyncornis cerviniceps Gould, *Icones Avium*, pt. ii, pl. and text (1838) ("said to be from China or adjacent islands").

Forrest sent 1 ♀ Tengyueh District.

207. **Collocalia fucifuga brevirostris** (McClell.).

Hirundo brevirostris McClelland, *Proc. Zool. Soc. Lond.* pt. vii, p. 155 (1840) (Assam).

Forrest collected 1 ? juv. on the Mekong-Salwin Divide.

208. *Chaetura caudacuta nudipes* Hodgs.

Chaetura nudipes Hodgson, *Journ. As. Soc. Bengal*, vol. v, p. 779 (1836) (Nepal).

Forrest sent 1 ♂ Mekong-Salwin Divide Aug. 1921. In his 1925 collection is 1 ♂ hills N. of Tengyueh, 6,000 feet, Oct. 1925. Open country.

209. *Micropus affinis subfurcatus* (Blyth).

Cypselus subfurcatus Blyth, *Journ. As. Soc. Bengal*, vol. xviii, p. 807 (1849) (Penang and Malay Peninsula).

Ingram records 4 ♂♂, 2 ♀♀ Mengtsh, May-June 1910; Bangs & Phillips enumerate 7 examples Mengtsh and Loukouchai; La Touche says "exceedingly abundant at Mengtsh."

210. *Pitta cucullata* Hartl.

Pitta cucullata Hartlaub, *Rev. Zool*, 1843, p. 65 (Malacca).

La Touche records 1 ♂ Mengtsh, April 1921.

211. *Pitta (Hydromis) nipalensis* (Hodgs.).

Paludicola nipalensis Hodgson, *Journ. As. Soc. Bengal*, vol. vi, p. 103 (1837) (Nepal).

Baker enumerates this bird as from Yunnan.

212. *Hirundo rustica gutturalis* Scop.

Hirundo gutturalis Scopoli, *Del. Flor. et Faun. Insubr.* vol. ii, p. 96 (1786) (Antigua Panay).

Ingram enumerates 3 ♂♂, 1 ♀ Mengtsh, June-July 1910; Bangs & Phillips record 8 specimens from Mengtsh and Loukouchai; Andrews & Heller collected 1 ♂ Meng-ting, Feb. 1917; M. Pichon sent 1 example; M. & Mme. Comby got 1 specimen; Messrs. Uchida & Kuroda record 3 ♂♂, 2 ♀♀ from Mengtsh, Dec. 1910-1911, but erroneously identified them as the American subspecies *rustica erythrogastra* Bodd.; Forrest sent 1 ♂ juv., 2 ♀♀ Tengyueh Valley, 1 ♂ Tengyueh, 1 ♂ ad. Tali Valley, 1 ♂ juv. Lichiang Range; La Touche collected 1 ♂ ad., 1 ? imm. Mengtsh, 1 ♂ ad. Tachouang, 1 ♂, 2 ♀♀ juv. Yunnanfu. In Forrest's 1925 collection he sent 2 ♀♀ hills N.W. of Tengyueh, 6,000 feet, June 1925. In the British Museum is an example Talifu Plain, March 1902, Colonel Rippon.

213. *Hirundo rustica tyleri* Jerd.

Hirundo tyleri Jerdon, *B. Ind.* vol. iii, p. 870 (1864) (India).

Ingram records 1 ♂ Mengtsh, May 1910; Bangs & Phillips enumerate 4 examples, Mengtsh, Dec. 1910. Forrest sent in his 1924 collection 2 ♀♀ hills N.W. of Tengyueh, 6,000 feet, June 1925.

214. *Hirundo daurica nipalensis* (Hodgs.).

Hirundo nipalensis Hodgson, *Journ. As. Soc. Bengal*, vol. v, p. 780 (1837) (Central Nepal).

Andrews & Heller record 1 ? adult, Meng-ting, Salwin Drainage, Feb. 1917; M. Pichon sent 1 example from Tengyueh and says common everywhere in Yunnan; Forrest collected 1 ♂, 1 ♀ Tali Valley, 1 ♂ Mekong-Yangtze Divide.

215. *Hirundo daurica striolata* Temm. & Schleg.

Hirundo striolata Temminck & Schlegel, *Siebold's Faun. Jap. Aves*, p. 33 (1847) (Java).

Bangs & Phillips record 3 examples Mengtsh, June 1911; Uchida & Kuroda enumerate 4 ♂♂ from Loukouchai; La Touche has 1 ♂ imm. Mengtsh. Sept. 1920; Colonel Rippon obtained 1 example Talifu Valley, March 1902, and 1 Yangpi-Chutung Road, March 1906.

216. *Riparia rupestris* (Scop.).

Riparia rupestris Scopoli, *Annus Historico-Nat.* p. 167 (1769) (Tyrol).

Captain Wingate collected 2 ♂♂ ad. near Yunnan City, Feb. 1899; Andrews and Heller got 1 ♀ Chen-kang Salwin, Drainage, Feb. 1917; M. Pichon sent 2 examples.

217. *Cinclus pallasii souliei* Oust.

Cinclus pallasii var. *souliei* Oustalet, *Ann. Scienc. Nat. Zool.* ser. 7, vol. xii, p. 299 (1892) (Ta-tsien-lu and Moupin).

Colonel Rippon obtained an adult example of this bird in the Tali River Valley April 1906; La Touche says he saw a Dipper doubtless of this form on the Pataho below Kopaotsun; Colonel Rippon also collected an immature example in the Tali River Valley, April 1906.

218. *Tesia cyaniventer* Hodgs.

Tesia cyaniventer Hodgson, *Journ. As. Soc. Bengal.* vol. vi, p. 101 (1837) (Nepal).

Forrest collected 1 ♀ Salwin Valley, 1 ♂ Scheli-Salwin Divide, 1 ♀ ad., 2 ♂♂, 1 ♀ juv. Tengyueh District.

219. *Oligura castaneo-coronata* (Burton).*

Sylvia? castaneo-coronata Burton, *Proc. Zool. Soc. London*, vol. iii, p. 52 (1836) (Himalaya).

Although Dr. Hartert in his *Palaeartic Birds* unites *cyaniventer* and *castaneo-coronata* in the genus *Tesia*, and I am generally of his opinion that we should strive rather to REDUCE than to INCREASE the number of genera, I feel in this case that Outram Bangs has good reasons for re-separating these birds into two genera.

Forrest collected 1 ♂ Shweli-Salwin Divide, 6 ♂♂, 1 ♀, 1 ? Lichiang Range.

220. *Spelaeornis kauriensis* (Har.).

rocihla kauriensis Harington, *Ann. Mag. Nat. Hist.* (8), ii, p. 246 (1908) (Watan Bhamo District).

Forrest is the only collector to get this bird in Yunnan; he sent 1 ♀ Shweli-Salwin Divide, Dec. 1919, and 1 ♀ Tengyueh District, Nov. 1924.

221. *Spelaeornis souliei* Oust.

Spelaeornis souliei Oustalet, *Bull. Mus. d'Hist. Nat. Paris*, p. 257, No. 6 (1898) (Tsékou).

Andrews & Heller got 1 ♂ caught in a small mammal trap at Tai-ping-pu, April 1917; Père Soulié collected the type at Tsékou in Yunnan, and the only other known examples of this very rare bird up to 1926 are the ♂♀ and juv. sent

by Forrest. In his 1925 collection he sent 1 ♂ hills N. of Tengyueh, 8,000 feet, July 1925. Thicket. Bill, upper mandible brown, lower mandible bone-grey; feet dark olive; iris brown.

222. Pnoepyga albiventer magnirostris Rothshch.

Pnoepyga squamata magnirostris Rothschild, *Nov. Zool.* vol. xxxii, p. 297, No. 51 (1925) (Shweli Valley).

So far the type ♀ is the only known example of this bird; 1 ♀ ad. (rufous form) Shweli Valley, Nov. 1924; Forrest fourth collection.

223. Pnoepyga pusilla pusilla Hodgs.

Pnoepyga pusilla Hodgson, *Proc. Zool. Soc. London*, vol. xiii, p. 25 (1845) (Nepal).

Bangs & Phillips record 1 ♀ ad. Mengtsz, March 1911; Andrews & Heller obtained 1 ♂, 1 ♀ Ho-mo-shu Pass and Namting River, April 1917.

224. Troglodytes troglodytes talifuensis (Sharpe).

Anorthura talifuensis Sharpe, *Bull. B.O.C.* vol. xiii, p. 11 (1902) (Gyi-dzin-shán).

Colonel Rippon collected this species in the Talifu Valley, Feb. 1906, in the Lichiang Valley, March 1906, and on the Yangtze Big Bend, March 1906; Oustalet records this bird in the collection of Princee H. d'Orleans under the name of *Troglodytes nipalensis*; Forrest collected 1 ♂, 2 ♀♀ Mekong-Salwin Divide; 4 ♂♂, 2 ♀♀, 2 ? Lichiang Range.

225. Prunella immaculata (Hodgs.).

Accentor immaculata Hodgson, *Proc. Zool. Soc. London*, vol. xiii, p. 34 (1845) (Nepal).

Colonel Rippon brought home examples from the Chutung-Yangpi Road and Yangtze big bend, Feb.-March 1906, and 5 examples Gyi-dzin-shán, E. of Talifu, March 1902; Forrest collected 2 ♂♂ ad., 2 ? ad., 1 fledgling, Lichiang Range, 1 ♀ Tengyueh District, 1 ♂, 1 ♀ juv. Mekong-Salwin Divide.

226. Prunella strophata multistriata (David).

Accentor multistriatus David, *Ann. Mag. Nat. Hist.* (4), vii, p. 256 (1871) (Moupin).

Colonel Rippon obtained examples in the Lichiang Valley, at Lichiang and on the Yangpi Chutung Road, March-April 1906; and 3 examples Gyi-dzin-shán E. of Talifu, April 1902; Forrest sent 12 ♂♂, 5 ♀♀, 7 ? Lichiang Range, 1 ♂, 2 ♀♀ Mekong-Salwin Divide. In the British Museum there is also an example in the Styan collection, Tsékou Soulié 1897.

227. Prunella collaris ripponi Hart.

Prunella collaris ripponi Hartert, *Vög. palaäarkt. Faun.* vol. i, p. 766 (1910) (Gyi-dzin-sháu).

Colonel Rippon collected a series at Gyi-dzin-shán, April 1902; Forrest sent 6 ♂♂ Lichiang Range, 1 ♀ Mekong-Salwin Divide, Oct. 1918.

In the British Museum is an example from Tsékou coll. by Soulié, 1897.

228. Microcichla scouleri (Vig.).

Enicurus scouleri Vigors, *Proc. Comm. Zool. Soc. London*, pt. i, p. 174 (1832) (Himalaya).

Oustalet records this bird in the collection of Princee H. d'Orleans.

229. *Enicurus sinensis* Gould.

Enicurus sinensis Gould, *Proc. Zool. Soc. London*, p. 665 (1865) (Shanghai).

Colonel Rippon collected this bird in the Lichiang Valley, the Tali Valley, and on the Yangpi-Chutung Road, March 1906; Captain Wingate reports a ♂ ad. Yunnan City, Feb. 1899; Forrest sent 1 ♂, 1 ♀ juv. Mekong-Salwin Divide, 2 ♂♂, 2 ♀♀ ad. Lichiang Range; La Touche records 1 ♂ Yunnanfu, and says he observed an example on the edge of the Mengtshz Plateau.

230. *Enicurus maculatus guttatus* Gould.

Enicurus guttatus Gould, *Proc. Zool. Soc. London*, 1865, p. 664 (Sikkim).

Bangs & Phillips record 1 ♂, 1 ♀ Loukouchai, Feb., under the name *E. guttatus bacatus*, as a new subspecies, but the size of the spots varies individually and I cannot recognize this new form; Uchida & Kuroda record 1 ♂, 1 ♀ from Loukouchai under the name *maculatus*; Forrest collected 1 ♀ Shweli-Salwin Divide, 1 ♂, 1 ♀ ad., 1 ♂ juv. Tengyueh District.

231. *Enicurus schistaceus* Hodgs.

Enicurus schistaceus Hodgson, *Asiat. Res.* vol. xix, p. 189 (1836) (Nepal).

Bangs & Phillips record 7 examples from Loukouchai, Feb., Dec.; Andrews and Heller obtained 1 ♀ on the Namting River, Feb. 1917; Uchida & Kuroda enumerate 2 ♂♂, 2 ♀♀ from Loukouchai; Forrest sent 2 ♂♂ Shweli-Salwin Divide, 2 ♀♀ ad., 1 ♀ juv. Tengyueh District; La Touche obtained 1 ♂, 1 ♀ Loukouchai, Feb. 1921. In the British Museum are 2 examples, Yunnan, Styau coll.

232. *Hodgsonius phoenicuroides* (Gray).

Bradypterus phoenicuroides Gray, *Cat. Mamm., etc., Nepal Pres. Hodgs.* p. 70, No. 153 (Nepal).

Forrest collected 7 ♂♂, 6 ♀♀ ad. Lichiang Range.

233. *Luscinia brunnea* (Hodgs.).

Larvivora brunnea Hodgson, *Journ. As. Soc. Bengal*, vol. vi, p. 102 (1837) (Nepal) ♀.

Forrest collected 1 ? Tengyueh District, 1 ♂ ad. Yangtze Valley, 1 ♀ ad. T'ong-Shán, 2 ♂♂, 2 ♀♀, ad., 1 ? juv. Lichiang Range.

234. *Luscinia cyane* (Pall.).

Motacilla cyane Pallas, *Reise d. versch. Prov. Russ. Reichs.* vol. iii, p. 697 (1776) (Dauria).

La Touche collected 6 ♂♂, 8 ♀♀, 1 ? Mengtshz, Sept.-Oct. 1920 and April-May 1921.

235. *Luscinia davidi* (Oust.).

Calliope davidi Oustalet, *Bull. Mus. Paris*, 1892, p. 222 (Ta-tsién-lu).

Forrest alone of the explorers of Yunnan obtained this beautiful species; he sent 4 ♂♂, 2 ♀♀ ad. Lichiang Range. Since Forrest obtained the above 6 examples Dr. F. H. Rock has sent to the United States National Museum a very large collection of birds from the Lichiang Range, and neighbouring Mountain Ranges in N.W. Yunnan. Prof. Sushkin exchanged a ♂ ad. of this bird from Dr. Rock's

series of 5 ♂♂ ad. and ♀♀ and juv., and on comparing it in the Paris Museum he found Dr. Rock's bird different in having a more brilliant breast and the white in the tail was more extended. Prof. Sushkin at once described it under the name of *Luscinia davidi gloriosa* (*Auk*, vol. xliii, No. 2, p. 181 (1926)). On reading this description I was struck by the fact that our Lichiang birds did not all show these differences, and so I compared the British Museum birds and those at Tring consisting of 1 ♂ (topotype) Ta-t sien-lu, 1 ♂ Tsin-Ling Mts., and 1 ♂, 1 ♀ Lichiang (Tring Museum); 3 ♂♂, 1 ♀ Lichiang Range, 2 ♂♂ Chumbi Valley (British Museum). I find that the 3 British Museum Lichiang ♂♂ and the Tring Tsin-Ling and Ta-t sien-lu ♂♂ agree exactly in colour of throat and breast, while the Tring Lichiang ♂ is brighter orange; the 1 British Museum Chumbi ♂ is as pale as the topotypical Ta-t sien-lu bird, while the other, instead of having the throat and breast golden orange, has it bright orange-scarlet. As regards the white in the tail the Ta-t sien-lu bird at Tring has more white than the 4 Lichiang birds, while the Chumbi ♂ with the scarlet breast has much less white, in fact hardly any, while the paler Chumbi bird has as much white as the whitest Lichiang ♂. Now in addition to these facts, I find that of the 8 ♂♂ examined the only one that has the upper wing-coverts and outer webs of the quills blackish slate-blue like the upper surface is the Chumbi bird with scarlet breast; the other 7 have these feathers more or less umber-brown. It is therefore clear that the blue coverts and quill vanes and the more brilliant breast-colour are entirely questions of age, while the white in the tail is variable, and that Sushkin's *gloriosa* is a pure synonym of *davidi*.

236. *Luscinia pectoralis pectoralis* (Gould).

Calliope pectoralis Gould, *Icones Avium*, pt. ii, pl. and text I (1838) (Himalaya).

Anderson records 1 ♀ from Ponsee, March 1868.

237. *Luscinia calliope calliope* (Pall.).

Motacilla calliope Pallas, *Reise d. versch. Prov. Russ. Reichs.* vol. iii, p. 697 (1776) (Yenisei-Lena Rivers).

Bangs & Phillips record 11 specimens Mengt sz, April and May; Andrews & Heller obtained 1 ♂, 1 ♀ ad. Namting River, and Chang-lung, March 1917; Uchida and Kuroda record 5 ♂♂, 1 ♀ Mengt sz; Forrest collected 1 ♂ Lichiang Range; La Touche mentions 1 ♂ Hokow, April 1921.

238. *Luscinia sibilans* (Swinh.).

Larvivora sibilans Swinhoe, *Proc. Zool. Soc. London*, 1863, p. 292 (Macao, China).

Mr. La Touche collected 2 ♂♂, 1 ♀ Mengt sz, Jan.-Feb. 1920-21, 1 ♂ Milati, March 1921.

239. *Phoenicurus schisticeps* (Gray).

Ruticilla schisticeps Gray, *Cat. Mamm. B. Nepal Coll. Hodgson*, p. 69, No. 153 (1846) (Nepal).

Colonel Rippon obtained 4 examples Lichiang, March 1906, and 1 Yangtze Big Bend, March 1906; Forrest collected 8 ♂♂, 9 ♀♀ ad., 1 ♂, 4 ? juv. Lichiang Range, 1 ♀ Mekong-Salwin Divide, 1 ♀, 2 ? Yangtze Valley.

240. *Phoenicurus frontalis frontalis* Vig.

Phoenicurus frontalis Vigors, *Proc. Comm. Zool. Soc. London*, pt. i, p. 172 (1832) (Himalaya).

Dr. Hartert, in the *Bull. B.O.C.* for 1918, separated the Chinese *frontalis* as a new subspecies under the name of *frontalis sinae*, and La Touche and I have recorded his and Forrest's Yunnan examples under that name. Mr. Kinneer, however, drew my attention to the fact that the birds in the British Museum share of Forrest's collections could not be distinguished from typical *frontalis*. I have now compared Forrest's birds at Tring, 18 ♂♂, 9 ♀♀, 3 juv., with my typical Himalayan series, and I also cannot separate them. Therefore, if *frontalis sinae* can be maintained at all, this name must apply to birds from the more northern parts of China, and the Yunnan birds must be called *frontalis frontalis*.

Colonel Rippon obtained examples on the Chung-tung-Yangpi Road, in the Talifu Valley, at Lichiang, at the Yangtze Big Bend, and in the Lichiang Valley, Feb.-April 1906; Oustalet records it from Prince H. d'Orleans' collection; Bangs & Phillips enumerate 2 specimens Mengtsh, Mareh; M. Pichon sent 1 ♀; Forrest collected 5 ♂♂ Shweli Valley, 1 ♀ Salwin Valley, 2 ♀♀ Yangtze Valley, 1 ♂ ad. Tengyueh Valley, 4 ♂♂, 3 ♀♀ Tengyueh District, 1 ♂ ad., 1 ♀ juv. Mekong-Salwin Divide, 20 ♂♂, 10 ♀♀ ad., 2 ♂♂, 1 ♀ juv. Lichiang Range; La Touche obtained 1 ♀ Milati, March 1921.

241. *Phoenicurus aureus leucopterus* Blyth.

Phoenicurus leucopterus Blyth, *Journ. As. Soc. Bengal*, vol. xii, pt. i, p. 962 (1843) (Malacca).

Colonel Rippon obtained examples on the Yangtze Big Bend, and in the Lichiang Valley, April 1906; also 2 ♀♀ Yangpi-Chutung Road, April 1902; Oustalet records it among Prince H. d'Orleans' birds; Bangs & Phillips enumerate 18 specimens from Mengtsh; Forrest sent 7 ♂♂, 1 ♀ ad., 4 ? juv. Lichiang Range, 1 ♂ ad. Yangtze Valley, 1 ♂ ad. Tong Shán, 1 ♀ Mekong-Salwin Divide, 5 ♂♂, 2 ♀♀ ad. Tengyueh District, 2 ♂♂, 2 ♀♀ ad. Tengyueh Valley; La Touche collected 7 ♂♂, 3 ♀♀ Mengtsh, Oct.-Nov. 1920, 1 ♂ Loshuitang, Feb. 1921.

242. *Phoenicurus hodgsoni* (Moore).

Ruticilla hodgsoni Moore, *Proc. Zool. Soc. London*, vol. xxii, p. 26, pl. Aves 58 (1854) (Nepal).

Colonel Rippon records examples from Chutung-Yangpi Road, Talifu Valley, and Lichiang, Feb.-March 1906; Andrews & Heller secured 1 ♂, 1 ♀ at Yung-chiang-ehou, Jan. 1917; Forrest collected 1 ♂, 2 ♀♀ Lichiang Range, 1 ♂ Tengyueh District, 4 ? Yangtze Valley.

243. *Phoenicurus ochrurus rufiventris* (Vieill.).

Oenanthe rufiventris Vieillot, *Nouv. Dict. d'Hist. Nat. Nouv. Ed.* vol. xxi, p. 431 (1818) (India).

Colonel Rippon collected this bird on the Yangtze Big Bend, March 1906.

244. *Chaimarrornis fuliginosa fuliginosa* (Vig.).

Phoenicurus fuliginosa Vigors, *Proc. Comm. Zool. Soc. London*, pt. i, p. 35 (1831) (Himalaya).

Colonel Rippon obtained this species in the Lichiang Valley, April 1906; at Talifu, March 1902 and Feb. 1906, and on the Chutung-Yangpi Road, March 1906; Oustalet records it from the collection of Prince H. d'Orleans; Bangs &

Phillips enumerate 14 examples from Mengtsh and Loukouchai; Forrest sent 5 ♂♂ Tengyueh District, 1 ♀ ad. Tengyueh Valley, 2 ♀♀ ad. Shweli Valley, 3 ? juv. Mekong Valley, 4 ? juv. Mekong-Salwin Divide, 5 ♂♂ ad., 1 nestling Lichiang Range; La Touche records 1 ♂. 2 ♀♀ Mengtsh, Oct.-Nov. 1920, 6 ♂♂, 3 ♀♀ Loukouchai, Dec. 1920, 1 ♀ Milati, Jan. 1921.

245. **Chaimarrornis leucocephala** (Vig.).

Phoenicura leucocephala Vigors, *Proc. Comm. Zool. Soc. London*, pt. i, p. 35 (1831) (Himalaya).

Colonel Rippon collected this bird in the Chutung Valley, March 1902, and in Lichiang Valley and in the Tali River Valley, April 1906; Bangs & Phillips record 14 examples from Mengtsh and Loukouchai; Andrews and Heller obtained 1 ♂, 1 ♀ at Mu-cheng, Salwin Drainage, and Yuan-chiang-Chou, Jan.-Feb. 1917; M. Pichon sent 1 example; Forrest collected 1 ♂ Salwin Valley, 1 ♂ ad. Tengyueh District, 2 ♀♀ ad. Shweli Valley, 1 ♂, 4 ♀♀ ad., 1 ♂, 1 ♀ juv. Lichiang Range; La Touche records 1 ♂, 1 ♀ Mengtsh, 1 ? Milati, 3 ♂♂, 1 ♀ Loukouchai, 1 ♀ Loshuitang, and 1 specimen Poutoutsing.

246. **Notodela leucura leucura** (Hodgs.).

Muscisylva leucura Hodgson, *Proc. Zool. Soc. London*, 1845, p. 27 (Nepal).

Ingram records 2 ♀♀ Mengtsh, June-July 1910; Oustalet enumerates it among Prince H. d'Orleans' birds; Bangs & Phillips list 2 ♂♂ Mengtsh, July-Aug.; Andrews & Heller obtained 2 ♂♂ ad. Namting River, Feb. 1917; Forrest collected 1 ? juv. Lichiang Range; 3 ? juv. Tengyueh District; La Touche records 1 ♂ Mengtsh, Oct. 1920, 1 ♂ Loukouchai, April 1921, 1 ♀ Lotukow, May 1921. In the British Museum are 1 example Yunnan, Styann coll., and 1 Yung Chang, Salwin Road, April 1906, Colonel Rippon.

247. **Tarsiger chrysaeus** Hodgs.

Tarsiger chrysaeus Hodgson, *Proc. Zool. Soc. London*, 1845, p. 28 (Nepal).

Forrest collected 1 ♂ ad., 1 ♀ juv. Tengyueh District, 1 ♂, 8 ♀♀ ad., 1 ♂ juv. Lichiang Range, 5 ♂♂ ad., 1 ♂, 1 ♀ juv. Mekong-Salwin Divide.

248. **Tarsiger indicus yunnanensis** Rothschild.

Tarsiger indicus yunnanensis Rothschild, *Bull. B.O.C.* vol. xliii, p. 10 (1922) (Lichiang Range).

Forrest collected 1 ♂ ad. (type), 1 ♂ juv. Lichiang Range, 1 ♀ Mekong-Salwin Divide.

249. **Tarsiger rufilatus practicus** (Bangs & Phillips).

Ianthia practica Bangs & Phillips, *Bull. Mus. Comp. Zool.* vol. lviii, p. 292 (1914) (Loukouchai).

Colonel Rippon records this bird from the Chutung-Yangpi Road and the Yangtze Big Bend, Feb.-March 1906; Oustalet enumerates the species among Prince H. d'Orleans' birds; Bangs & Phillips list 1 ♂, 1 ♀ Mengtsh, April, Loukouchai, Feb.; Andrews & Heller collected 1 ♂, 1 ♀ ad. Mu-cheng, Feb. 1917; M. Pichon sent 1 example; Forrest collected 1 ♀ Tengyueh District, 1 ♂ Shweli Valley, 2 ♀♀ Mekong Valley, 1 ♂, 1 ♀ ad., 1 ♂, 2 ♀♀ juv. Mekong-Salwin Divide, 4 ♂♂, 11 ♀♀ ad., 2 ♂♂, 1 ? juv. Lichiang Range; La Touche obtained 1 ♂ Mengtsh,

1 ♂, 1 ♀ Milati, 1 ♂ Loshuitang 1920–1921. There are also in the British Museum 1 ♂ Meechu; 1 ♀ Tsekou Soulié, Styan coll., and 4 ♂, 5 ♀♀ Gyi-dzin-Shán, April 1902, Colonel Rippon.

250. *Tarsiger cyanurus* (Pall.).

Motacilla cyanurus Pallas, *Reise Versch. Prov. Russ. Reichs.* vol. ii, p. 709 (1773) (Yenissei).

Colonel Rippon got this bird at Lichiang, March 1906; Bangs & Phillips record 11 examples from Mengtsz and Loukouchai; Forrest sent in his second collection 1 ♂ ad., 3 ♂♂ juv., 4 ? Lichiang Range, and he sent also some in his first collection, but I have unaccountably failed to record them. La Touche records 9 ♂♂, 3 ♀♀ Mengtsz, 17 ♂♂, 1 ♀ Milati, Nov. 1920–Feb. 1921.

251. *Dendrobiastes hyperythra hyperythra* (Blyth).

Muscicapa hyperythra Blyth, *Journ. As. Soc. Bengal*, vol. xi, p. 885 (1842) (India).

Forrest collected 1 ♂ ad., 1 ♀ juv. Tengyueh District.

252. *Copsychus saularis saularis* (Linn.).

Grucula saularis Linnaeus, *Syst. Nat.* edit. x, p. 109, No. 5 (1758) (Asia).

Ingram records 3 ♂♂, 1 ♀ Mengtsz, April–July 1910; Bangs & Phillips enumerate 20 examples from Mengtsz, Loukouchai, Linan Fu, and Shi-ping; Andrews & Heller obtained 1 ♀ Mengting, Feb. 1917; M. Pichon sent 1 specimen and remarked "fairly common"; Forrest collected 3 ♂♂, 1 ♀ ad. Tengyueh District, 7 ♂♂, 2 ♀♀ ad., 1 ♂, 1 ♀ juv. Tengyueh Valley, 1 ♂, 2 ♀♀ ad., 2 ♀♀ juv. Shweli–Salwin Divide, 2 ♂♂, 5 ♀♀ Shweli Valley; La Touche 2 ♂♂, 2 ♀♀ Mengtsz, Aug.–Oct. 1920, 1 ♂, 1 ♀ Hokow, March 1921; Colonel Rippon collected 1 ♂, 2 ♀♀ Talifu Valley, Feb. and April 1906, 2 ♂♂ Chutung–Yangpi Road, April 1902.

253. *Oreicola jerdoni* Blyth.

Oreicola jerdoni Blyth, *Ibis*, 1867, p. 14 (Upper India)

Andrews & Heller collected 1 ♂ ad. at Namting River, Feb. 1917.

254. *Oreicola ferrea haringtoni* Hart.

Oreicola ferrea haringtoni Hartert, *Vög. paläark. Faun.* vol. i, p. 711, No. 1080 (1910) (Lien-kiang, China).

Anderson records 1 ♂, 3 ♀♀ Pensee, May 1868; Captain Wingate collected 1 ♂ Yunnan City Feb. 1899; Bangs & Phillips enumerate 11 examples Mengtsz Jan.–Dec.; Andrews & Heller procured 1 ♂, 2 ♀♀ at Malipa and Wan-tien; Forrest sent 1 ♂, 1 ♀ ad. Tengyueh Valley, 12 ♂♂, 5 ♀♀ ad., 1 ♀, 3 ? juv. Tengyueh District, 2 ♂♂ ad. Salwin Valley, 7 ♂♂ ad. Shweli–Salwin Divide, 1 ♂, 1 ♀ ad., 1 ? juv. Mekong–Salwin Divide, 4 ♀♀ ad. Tali Valley, 1 ♂ ad. Mekong Valley, 1 ♂ juv. T'ong Shán, 7 ♂♂, 3 ♀♀ ad., 1 ♂ 5 ? juv. Lichiang Range; La Touche collected 6 ♂♂, 4 ♀♀ ad. Mengtsz, 2 ♂♂ Loukouchai, 1 ♀ Milati, 1 ♂, 1 ♀ Tachuang, and 2 ♂♂, 1 ♀ Lotukow; M. & Mme. Comby obtained 3 examples.

In the British Museum are 1 ♂ Yung Mo Chang, March 1903, Styan coll.; 2 examples Yangpi Valley, April 1902, 3 Gyi-dzin-Shán, April 1902, 1 Yangpi–Chutung Road, March 1902, 1 ♂, 1 ♀ Shayang–Chutung Road, March 1902, 1 Lichiang Range, April 1906, Colonel Rippon.

255. *Saxicola caprata burmanica* Baker.

Saxicola caprata burmanica Baker, *Bull. B.O.C.* xliii, p. 9 (1923) (Pegu).

Captain Wingate collected ♂♀ at Ching-tung, March 1899; Anderson obtained the ♀ at Momien, June 1868; M. Pichon sent home 1 example.

256. *Saxicola caprata bicolor* Sykes.

Saxicola bicolor, Sykes, *Proc. Zool. Soc. London*, 1832, p. 92 (Deccan).

Bangs & Phillips record 2 ♂♂ Mengtsz, Feb.–March.

257. *Saxicola caprata burmanica* Baker.

Saxicola caprata burmanica Stuart Baker, *Bull. B.O.C.* xliii, p. 9 (1923) (Pegu).

La Touche records 2 ♂♂ Mengtsz, Oct.–Nov. 1920, and says not uncommon in winter near Mengtsz.

In the British Museum are 1 ♂ Ching Tung, April 1899, Captain Wingate; 1 ♂ Yuen Chang, Styran coll.

258. *Saxicola torquata przewalskii* (Pleske).

Pratincola naura var. *prezawalskii* Pleske, *Wiss. Res. Przewalski's Reisen, Vögel*, vol. i, p. 46, pl. iv. ff. 1, 2, 3 (1889) (Gansu and East Turkestan).

Andrews & Heller obtained 2 ♂♂, 1 ♀ Yung-Chang-Fu, Jan. 1917; Forrest collected 2 ♂♂, 1 ♀ Lichiang Range; La Touche records 7 ♂♂, 2 ♀♀ Mengtsz, Sept.–Nov. 1920, 3 ♂♂ Milati, Sept. 1920.

259. *Saxicola torquata indica* (Blyth).

Pratincola indica Blyth, *Journ. As. Soc. Bengal*, vol. xvi, p. 129 (1847) (India).

Anderson collected this bird, 1 ♀ Ponsee, March, and 3 examples, Momien, May 1868; Colonel Rippon obtained examples in the Talifu and Lichiang Valleys, Feb.–March, and on the Yungchang-Chutung Road, Jan. 1906; Ingram records 1 ♂ Mengtsz, July 1910; Bangs & Phillips enumerate 8 specimens from Mengtsz and Loukouchai; M. Pichon sent home 4 ♂♂, 1 ♀; Forrest collected 1 ♂ ad. Mckong Valley, 4 ♂♂, 3 ♀♀ ad., 1 ? Tengyueh District, 1 ♂, 2 ♀♀ ad., 1 ♀ juv. Lichiang Range.

260. *Saxicola torquata stejnegeri* (Parrot).

Pratincola rubecula stejnegeri Parrot, *Verh. orn. Ges. Bayern*, vol. viii, p. 124 (1908) (Iterup and Yesso, Japan).

La Touche obtained 1 ♂, 1 ♀ Hokow, March 1921.

261. *Saxicola torquata yunnanensis* (La Touche).

Pratincola torquata yunnanensis La Touche, *Bull. B.O.C.* vol. xliii, p. 134 (1923) (Mengtsz, etc.).

La Touche enumerates 1 ♂, 3 ♀♀ Mengtsz, 1 ♀ Milati, 1 ♂, 1 ? juv. Shuitang, 1 ? Poutoutsing, 1 ? juv. Kopaotsing, 1 ? Lotukow; and says he suspects Bangs & Phillips' *indica*, which I have quoted antea under *indica*, rightly belong here.

262. *Myiophoneus caeruleus* (Scop.).

Gracula caerulea Scopoli, *Del. Fl. et Faun. Insubr.* vol. ii, p. 88 (1786) (China).

Bangs & Phillips record 1 ♂ ad. Mengtsz, May 1911; Uchida & Kuroda enumerate 2 ♂♂ March and April, from Mengtsz.

263. *Myiophoneus eugeniae* (Hume).

Myiophoneus eugeniae Hume, *Stray Feathers*, vol. i, p. 475 (1873) (Thayetmyo).

The status of *temmincki*, *eugeniae*, and *caeruleus* is a very puzzling one ; in the light of our present knowledge, I do not think it would be wise to treat them all as subspecies of *caeruleus* because in certain areas *caeruleus* and *eugeniae* or *temmincki* and *eugeniae* are found together in the same area ; but again in certain areas undoubted crosses occur either between *eugeniae* and *temmincki* or *caeruleus* and *temmincki* ; this fact is proved by the long series collected by Dr. Weigold on the Stoetzner expedition. At Tring we have an intermediate between *caeruleus* and *eugeniae* collected by Weigold, and one between *eugeniae* and *temmincki* obtained by Forrest. For the present I am therefore treating these 3 birds as species, and the intermediates as hybrids.

Colonel Rippon records examples from the Talifu Valley, Talifu River Valley, and the Yangpi Valley, Feb. and April 1906 ; Oustalet enumerates this species among the collection of Prince H. d'Orleans ; Bangs and Phillips list 8 specimens Mengtsh and Loukouchai ; Andrews & Heller record 4 examples from the Namting River and Yung-chang, Jan.-March 1917 ; M. Pichon collected 1 young bird ; M. & Mme. Comby obtained 1 example ; Forrest collected, including the " hybrid," 2 ♂♂, 2 ♀♀ ad., 1 ? juv. Lichiang Range, 1 ♂, 2 ♀♀ Tengyueh District, 2 ♂♂ ad., 1 ♂ juv. Mekong Valley, 1 ♀ ad. Salwin Valley, 1 ♂, 1 ♀ ad. Shweli Valley, 3 ♂♂ ad., 1 ? Shweli-Salwin Divide ; La Touche obtained 1 ♀ Mengtsh, Nov. 1920, 1 ♂ Loukouchai, March 1921.

In Forrest's 1925 collection are 2 ♂♂ hills N.W. of Tengyueh, 8,000 feet, April 1925 ; 1 ♀ N. of Tengyueh, 6,000 feet, April 1925 ; 1 ♀ Shweli-Salwin Divide, 8,000 feet, July 1925. Shady Ravines. Bill orange ; feet and legs black ; iris brown.

In the British Museum are 2 ♂♂ Meechu, Styan coll.

264. *Myiophoneus temmincki temmincki* Vig.

Myiophoneus temmincki Vigors, *Proc. Zool. Soc. London*, 1831, p. 171 (Himalaya).

M. Pichon sent home 1 specimen, and says " these birds live in flocks in the hot valleys and perch on the trees in great numbers."

265. *Cochoa purpurea* Hodgs.

Cochoa purpurea Hodgson, *Journ. As. Soc. Bengal*, vol. v, p. 359 (1836) (Nepal).

Forrest collected 1 ♂ ad. Lichiang Range.

266 *Monticola erythrogastra* (Vig.).

Turdus erythrogaster Vigors, *Proc. Zool. Soc. London*, 1831, p. 171 (Himalayas).

Colonel Rippon obtained this bird at Gyi-dzin-Shan, April 1902 ; Bangs & Phillips record 1 ♂ ad. Loukouchai, Dec. 1910 ; Andrews & Heller collected 1 ♂ ad. Ho-mu-shu Pass, April 1917 ; M. Pichon got 1 specimen and records it as very common ; Forrest sent 2 ♂♂ ad. Lichiang Range, 1 ♀ juv. T'ong-Shán, 1 ♀ juv. Shweli Valley.

[*Monticola solitarius* and its forms.]

In the articles on the former collections of Forrest I treated the red-bellied forms of the *solitarius* group as a separate species from *solitarius*, giving as my reason that according to La Touche they breed side by side over large areas in S. and S.E. China. Hartert and Stuart Baker do not consider this to be correct, because of the even larger area in which intermediate birds of all intergradations are found breeding. Stuart Baker separates these intermediate birds as a distinct subspecies, under the name of *M. solitaria affinis* Blyth; I cannot at present agree with this, for the following reason: as in the cases of the two Rollers *Coracias indicus indicus* and *C. indicus affinis*, the two Birds of Paradise *Paradisaea apoda novaeguineae* and *P. apoda raggiana*, and the two Crows *Corvus corone corone* and *C. corone cornix*, in the territory between the two breeding areas, we certainly find a large area inhabited by an intermediate form, but instead of being a more or less constant intermediate form we cannot find 2 examples exactly alike and we get every intergradation of coloration between the blue *M. s. pandoo* and the red-bellied *philippensis*. I have certainly come round to Hartert's view that we must treat *philippensis* as a subspecies of *solitarius* in the same way as we do *pandoo*, but I prefer for the present to treat the mixed intermediates as "Racial Hybrids," and consider that in those districts where at present only such intermediates occur the parent subspecies have died out and the intermediate "Racial Hybrids" are in the process of becoming a valid "subspecies," but that the form is not sufficiently fixed yet to be treated as such.]

267. *Monticola solitarius philippensis* (P. L. S. Müll.).

Turdus philippensis P. L. S. Müller, *Natursystem Anhang*, p. 145 (1776) (Philippine Islands).

Forrest obtained 1 ♂ T'ong Shán.

268. *Monticola solitarius pandoo* (Sykes).

Petrocincla pandoo Sykes, *Proc. Zool. Soc. London*, 1832, p. 87 (Ghats, India).

Colonel Rippon records this thrush from Talifu Valley, Feb. 1906, and Lichiang, April 1906; Captain Wingate obtained 1 ♂ ad. Yunnan City, Feb. 1899, 1 ♂ ad. M'ong-sen, March 1899; Ingram enumerates immature examples, Mengtsh; Bangs & Phillips list 19 specimens Mengtsh, Loukouchai, Shi-ping, and Linan Fu; Andrews & Heller collected 1 ♂ ad. Tung-chang-Fu, Jan. 1917; M. Pichon sent home 3 specimens and states they were winter migrants; Forrest collected 1 ♀ ad., 4 ? juv. Shweli Valley, 1 ♀ ad. Shweli-Salwin Divide, 1 ♂ ad., 4 ? juv. Mekong Valley, 2 ? juv. Lichiang Range, 1 ♂, 1 ♀ ad. Tengyueh Valley, 2 ♂♂ ad. Lang Bong Valley, 1 ? juv. vicinity of Tengyueh; La Touche records 2 ♂♂, 3 ♀♀ ad., 1 ♂ juv. Mengtsh, Oct. and Dec. 1920, 2 ♂♂ ad. Loukouchai, Dec. 1920, 1 ♂ Milati, Jan. 1921, 1 ♂ Tachouang, March 1921, 2 ♀♀ Poutontsing, April 1921.

In Forrest's 1925 collection there are 1 ♀ (sexed ♂) Tengyueh Valley, 7,000 feet, Dec. 1925; 1 ♂ juv. hills N. of Tengyueh, 7,000 feet, Dec. 1925; 2 ♂♂ juv. Shweli-Salwin Divide, 6,000 feet, July 1925.

269. *Monticola solitarius pandoo* × *solitarius philippensis*.

Forrest collected 1 ♂ Lichiang Range, 1 ♂ Mekong Valley.

270. *Turdus merula mandarinus* Bp.

Turdus mandarinus Bonaparte, *Consp. Ar.* vol. i, p. 275 (1850) (S. China).

Ingram records 1 ♂ Mengtsz, April 1910; Bangs & Phillips enumerate 11 examples from Shi-ping and Linan Fu; Andrews & Heller collected 1 ♂, 1 ♀ ad. Yung-chang, Jan. 1917; La Touche obtained 1 ♂, 1 ♀ juv. Mengtsz, Oct. and Dec. 1920, 1 ♂ juv. Yunnan Fu, May 1921.

271. *Turdus castaneus gouldi* (Verr.).

Merula gouldi Verreaux, *Nouv. Arch. Mus. d'Hist. Nat. Paris*, vol. vi, *Bull.* p. 34 (1871) (W. Szetschuan).

Colonel Rippon obtained examples Yangpi Valley, Feb. 1906, and Lichiang Valley, April 1906; Oustalet records the species in the collection of Prince H. d'Orleans; Andrews & Heller record 3 ad. and 1 imm. ♂ and ♀ Lichiang Range, Yoa-kuan, and Taiping-pu, Nov. 1916 and Jan. and April 1917; Forrest collected 22 ♂♂, 13 ♀♀ ad., 8 ? juv. Lichiang Range, 1 ♂ Shweli-Salwin Divide, 1 ? juv. Mekong-Salwin Divide. In the British Museum are 1 ♂ Chu-men-ehin-tra Tsekou Soulié, 1 ♀ Yuen Chang, Styan coll.

272. *Turdus eunomus* Temm.

Turdus eunomus Temminck, *Pl. Col.* pl. 514 (1830) (Japan).

Colonel Rippon obtained this bird on the Chutung-Yangpi Road, Feb. 1906; Bangs & Phillips record 12 examples Mengtsz, Shi-ping, Linan Fu, and Loukouehai, Forrest collected 4 ♂♂ ad., 2 ? Lichiang Range, 3 ♂♂, 1 ♀ ad. Shweli Valley. 5 ♂♂ ad. vicinity of Tengyueh, 1 ♀ ad. Salwin Valley; La Touche records 1 ♂ 1 ♀ Milati, Jan. 1921. In Forrest's 1925 collection are 2 ♂♂, 2 ♀♀ hills N.W. of Tengyueh, 8,000 feet, April 1925.

273. *Turdus naumanni* Temm.

Turdus naumanni Temminck, *Man. d'Orn.* vol. i, p. 170 (1820) (Eastern Europe).

Forrest obtained 1 ♂ Tengyueh Valley, 5,500 feet, March 1919.

274. *Turdus eunomus* × *naumanni*.

Forrest obtained 1 ♀ Shweli Valley, 1 ♂, 1 ♀, 1 ? Lichiang Range.

Forrest's 1925 collection contains 1 ♀ hills N.W. of Tengyueh, April 1925.

275. *Turdus obscurus* Gm.

Turdus obscurus Gmelin, *Syst. Nat.* vol. i, pt. ii, p. 816 (1789) (east of Lake Baikal).

Bangs & Phillips record 6 examples Mengtsz, Oct.-Nov.; Uchida & Kuroda enumerate 5 ♂♂, 1 ♀ Mengtsz, Oct.-Nov.; Forrest collected 1 ♂, 3 ♀♀ Lichiang Range, 2 ♂♂, 6 ♀♀ Shweli Valley, 2 ♀♀ Tengyueh District; La Touche collected 2 ♂♂, 1 ♀ Mengtsz, Oct.-Nov. 1920; Forrest's 1925 collection contains 1 ♀ ad., 1 ♂ juv. Shweli-Salwin Divide, 8,000 feet, Oct. 1925.

All the birds Forrest collected are darker above, dark olive, not rufous-olive, and the ♂♂ have the head less grey, not so distinct from the back, but breeding birds from N. China are required before we can safely separate this form.

276. *Turdus dissimilis dissimilis* Blyth.

Turdus dissimilis Blyth, *Journ. As. Soc. Bengal*, vol. xvi, p. 144 (1844) (♂ nec ♀) (Lower Bengal).

Andrews & Heller record 1 ♂, 1 ♀ ad. Chang-lung, Salwin River, March 1917; Forrest collected 2 ♂♂, 1 ♀ ad. Tengyueh Valley, 5 ♂♂, 1 ♀ ad., 2 ♂♂ juv. Tengyueh District, 1 ♀ ad., 1 ♂ juv. Shweli Valley, 3 ♂♂, 1 ♀ ad. 1? juv. Shweli-Salwin Divide, 1 ♀ juv. Lichiang Range. In Forrest's 1925 collection are 1 ♂, 2 ♀♀ ad., 1 ♂ juv. hills S. of Tengyueh, 7,000 feet, May 1925; 1 ♂ juv. hills N. of Tengyueh, 8,000 feet, Oct. 1925.

277. *Turdus dissimilis yunnanensis* (La Touche).

Merula protomomelaena yunnanensis La Touche, *Bull. B.O.C.* vol. xlii, p. 30 (1921) (Milati).

Ingram records 1 ♀ Mengtsh, July 1910; La Touche collected 5 ♂♂, 2 ♀♀ ad. Milati, Jan., Feb. 1921, 1 ♂ juv. Mengtsh, Feb. 1921. This race is very doubtfully distinct from *d. dissimilis*, and it requires a series from S.E. Yunnan from different seasons of the year to decide this point definitely.

278. *Turdus bouboul* (Lath.).

Lanius bouboul Latham, *Ind. Orn.* vol. i, p. 80 (1790) (India).

Mr. La Touche collected 1 ♀ ad. Mengtsh, Jan. 1921.

279. *Turdus cardis lateus* (Thay. & Bangs).

Merula cardis lateus Thayer & Bangs, *Bull. Mus. Comp. Zool. Harvard*, vol. llii, p. 140 (1909).

1 ♂ juv. was obtained by La Touche, Mengtsh, Nov. 1920.

280. *Turdus mupinensis conquisitus* Bangs.

Turdus auritus conquisitus Bangs, *Bull. Amer. Mus. Nat. Hist.* vol. xlv, p. 591 (1921) (Lichiang Range).

[The typical race from Moupin Szetehuan has been renamed *mupinensis* by Laubmann, as *Turdus auritus* Verr. is preoccupied by *Turdus auritus* Gm.]

Andrews & Heller obtained 1 ♀ Lichiang Range, Nov. 1916 (type of *Turdus auritus conquisitus*); Forrest collected 3 ♂♂, 1 ♀ ad., 2 ♂♂, 3? jun. Lichiang Range. 1 ♀ Yunnan, Styann coll., is in the British Museum.

281. *Turdus pallidus* Gm.

Turdus pallidus Gmelin, *Syst. Nat.* vol. i, p. 815 (1789) (Lake Baikal).

Oustalet records this bird from the collection of Prince H. d'Orleans.

282. *Turdus ruficollis ruficollis* Pall.

Turdus ruficollis Pallas, *Reise versch. Prov. Russ. Reichs.* vol. iii, p. 694 (1776) (Dauria).

Colonel Rippon collected this bird in the Talifu Valley, Feb. 1906, at Lichiang March 1906, at the Yangtze Big Bend, March 1906, and in the Lichiang Valley, April 1906; Oustalet received it in the collection of Prince H. d'Orleans. Forrest sent 1 ♂ Tengyueh Valley, 2 ♀♀ juv. Yengyueh District.

283. *Turdus mollissimus* Blyth.

Turdus mollissimus Blyth, *Journ. As. Soc. Bengal*, vol. xi, p. 188 (1842) (Darjeeling).

Colonel Rippon obtained an example on the Chutung-Yangpi Road, Feb. 1906; Andrews & Heller obtained 1 ♀ ad. Lichiang Range, Nov. 1916; Forrest collected 1 ♂, 1 ♀, 3 ? ad., 1 ? juv. Lichiang Range, 1 ♂ ad., 2 ♂♂, 1 ♀ juv. Mekong-Salwin Divide.

284. *Turdus dauma socius* (Thay. & Bangs).

Oreocinclla dauma socia Thayer & Bangs, *Mem. Mus. Comp. Zool. Harv.*, vol. xl (some Chinese Vertebrates), No. 4, Aves, p. 174 (1912) (Tatsienlu).

Forrest was the only collector in Yunnan to obtain this race of *dauma*; he collected 2 ♂♂, 1 ? Lichiang Range.

In my second and third articles I recorded the above birds as *dauma dauma*, but the deeper olive-ground colour and the heavier black markings especially on the head distinguish the Indo-Chinese form easily from the Continental Indian race.

285. *Turdus dauma aureus* Hol.

Turdus aureus Holandre, *Faune Dép. Moselle* in *Ann. de la Mos.* 1925, p. 60 (Metz).

Colonel Rippon collected an example at Shan Kuan, March 1902; Bangs and Phillips record 5 examples, Mengtsz, Oct.-Nov.; La Touche collected 1 ♂ Mengtsz, Nov. 1920, 1 ♂ Milati, Jan. 1921.

Mr. Stuart Baker upholds *aureus* as a species on account of its 14 tail-feathers, a character it shares with *major* of Amomioshima; until, however, someone has found *aureus* and *dauma* breeding in the same area, I prefer to treat them as subspecies.

[Note on some of the Chinese races of *Pomatorhinus ruficollis*.

In his *Handbook of the Birds of Eastern China*, pt. i, pp. 66-69, Mr. La Touche goes fully into two races, viz. *P. ruficollis stridulus* Swinh., and *P. r. styani* Seeb., but gives a synopsis of the five Chinese races, to which I now add a sixth, three of which, *r. reconditus* Bangs & Phillips, *r. laurentei* La Touche, and *r. albipectus* La Touche, are given as occurring in Yunnan. In my first article (Nov. Zool. xxviii, pp. 32-33, 1921), I referred the 9 examples collected by Forrest in the Lichiang Range, 1918, and Tengyueh District, 1919, to *P. r. stridulus*, and in the second article I also referred Forrest's 9 birds collected in 1921 to *stridulus*; this was entirely wrong, as *stridulus* has the streaks on the breast, and the flanks chestnut, whereas the W. and N. West Yunnan birds have them olive-grey or olive-brown. In my third article (Nov. Zool. xxx, p. 256) on the birds collected in 1922, I corrected this error, but fell into one just as bad by naming these 14 birds and the previous ones *P. ruficollis bakeri* Har. This error I continued by enumerating Forrest's 16 birds collected in 1924 (Nov. Zool. xxxii, p. 299, 1925) as *r. bakeri*. Mr. Kinnear, however in going through the present manuscript pointed out to me that all these birds from W. Yunnan were of a more or less uniform coloration much more so than the other races of *ruficollis*, and had no red or almost none below, whereas *ruficollis bakeri* always has some and often a good deal. He suggested that the bird from Tengyueh and Lichiang and the intervening portions

of W. Yunnan was a new race. I have gone carefully through my considerable series at Tring and find they are indistinguishable, except for having the upper mandible black at base only, from 1 ♂ from Kansu and 1 ? Szechuan Berezowsky coll., 1 ♂, 1 ? Kuikiang ex coll. F. W. Styan, and 1 ♂, 2 ♀♀ E. China, Captain (Admiral) Hubert Lynes, and all 7 of which are undoubtedly *ruficollis styani*. Therefore we have 4 forms of *ruficollis* occurring in Yunnan, viz. *similis* Rothsch. in W. and N.W. Yunnan; *reconditus* in S.E. Yunnan; *albipectus* La Touche in South Yunnan, and *laurentei* La Touche from East Central Yunnan. In addition there are two single specimens about which some doubt exists, viz. 1 ♂ Milati, La Touche coll. and 1 Howlik, West River, Captain Vaughan coll. This latter has the upperside of *stridulus*, but the underside of *reconditus*, and has a remarkably short bill. Of the Milati bird La Touche says that it resembles *styani*, but lacks the black on the upper mandible, except at the base; this is precisely the difference shown between my W. Yunnan birds and my series of *styani*.]

286. *Pomatorhinus ruficollis similis* subsp. nov.

Differs from *r. styani* in having the upper mandible never more than two-thirds black, and mostly all yellow, only the base being black; whereas in *r. styani* the whole upper mandible is black. It also averages slightly larger ♂♂ of *styani*, having a wing of 75–78 mm.; *similis* a wing of 77–83. (Type ♂ hills round Tengyueh, March 1922, No. 1391.)

Anderson obtained 1 example at Momien; Onstalet records specimens from Tsékou collected by Rev. Father Souhié; Forrest collected 8 ♂♂, 4 ♀♀, 1 ? Tengyueh District, 1 ♂ E. of Lichiang Plain, 7 ♂♂, 5 ♀♀, 2 ? Lichiang Range, 1 ♂ Tali Valley, 1 ♀ Mekong Valley, 1 ♂, 1 ♀ Shweli Valley, 3 ♂♂ Shweli-Salwin Divide. In his 1925 collection Forrest sent 1 ♂ Shweli-Salwin Divide, 7,000 feet, Oct. 1925. M. Pichon collected 1 example. La Touche records 1 ♂ Milati, Jan. 14, 1921, as *Pomatorhinus ruficollis* subsp. ? but his description leaves no doubt that it is a stray bird of the W. Yunnan race.

287. *Pomatorhinus ruficollis reconditus* Bangs & Phillips.

Pomatorhinus ruficollis reconditus Bangs & Phillips, *Bull. Mus. Comp. Zool. Harvard Camb.* vol. lviii, p. 286 (1914) (Mengtsz).

Bangs & Phillips record 9 examples from Mengtsz, Shi-ping, and Loukouchai; La Touche collected 4 ♂♂, 3 ♀♀ Hokow, March 1921, 2 ♂♂ Loukouchai, Feb. 1921, 1 ♀ Lotukow, May 1921, 2 examples Loshuitang, Feb. 1921.

This bird has the deepest rufous breast stripes of any of the races of *ruficollis*.

288. *Pomatorhinus ruficollis albipectus* La Touche.

Pomatorhinus ruficollis albipectus La Touche, *Handb. Birds East China*, pt. i, p. 69 (1925) (Szemao, S. Yunnan).

The birds on which this form was based were obtained at Szemao by M. Laurente, 2 specimens Szemao.

289. *Pomatorhinus ruficollis laurentii* La Touche.

Pomatorhinus ruficollis laurentei La Touche, *Ibis*, 1923, p. 318, No. 20 (Kopaotsun).

The characters of a pink bill and obsoletely barred tail appear to distinguish this race from all the other *ruficollis* forms.

1 ♂, 1 ♀, 1 ? juv. Kopaotsun, Yunnan-fu, May 1921.

Pomatorhinus ruficollis subsp. ?

There is a specimen in the British Museum collected by Captain Vaughan at Howlik, West River. This bird was reeorded by La Touche as *reconditus*. Mr. Kinnear thinks it is an example of *stridulus*. I have examined the bird, and I consider it is an abnormal specimen; it has a very short bill, the back is coloured like the majority of *stridulus*, but the breast has the deep maroon rufous stripes of *reconditus*, not the chestnut rufous ones of *stridulus*. Therefore I personally think it is an abnormal *reconditus*.

290. Pomatorhinus erythrognis imberbis Salvad.

Pomatorhinus imberbis Salvadori, *Ann. Mus. Genov.* (2), vii, p. 410 (1889) (Yado Karen Hills).

Anderson's locality Momien is the same as Tengyueh, whence one of Forrest's young birds was procured; it is therefore clear that the W. Yunnan bird is the same as the Burmese one.

Anderson collected 1 example Momien, June 1868; Forrest sent 1 fledgling from Lichiang Range, and 1 from Tengyueh.

291. Pomatorhinus maccelelandi odicus Bangs & Phillips.

Pomatorhinus maccelelandi odicus Bangs & Phillips, *Bull. Mus. Comp. Zool. Harvard Camb.* vol. lviii, p. 286 (1914) (Mengtsz).

Captain Wingate collected 1 ♂ ad. Yunnan City, Feb. 1899, 1 ♀ ad. S.W. Yunnan, April 1899; Oustalet records this bird among Prince H. d'Orleans' birds under the name of *maccelelandi* var. *armandi*? Ingram lists 1 worn ♀ Mengtsz, July 1910, under the name of *m. gravivox*; Bangs & Phillips enumerate 9 examples Mengtsz, Shi-ping, Loukouchai; Andrews & Heller collected 1 ♂, 1 ♀ ad. Mucheng, Salwin Drainage, Feb. 1917; Forrest sent 16 ♂♂, 16 ♀♀, 3 ? Lichiang Range, 2 ♂♂, 2 ♀♀ Tengyueh and vicinity, 2 ♂♂, 1 ♀ ad. Mekong Valley, 1 ♂, 1 ♀ Shweli Valley, 3 ♀♀ Shweli-Salwin Divide.

In Forrest's 1925 collection are 1 ♂, 1 ♀ hills of N.W. of Tengyueh, 7,000 feet, June 1925. M. & Mme. Comby obtained 1 example recorded by Ménégauz & Didier as *Pomatorhinus gravivox*.

Besides those listed above, there are in the British Museum 3 ♂♂, 3 ♀♀, 3 ? Yunnan, Styan collection; 3 ♂♂, Jan. 1903, Styan coll.; 1 example Chutung-Yangpi Road, March 1902, 2 Gyi-Dzin-Shan, Feb.-March 1902, 1 example hills N. of Talifu, March 1902, 1 Lichiang Valley, April 1906, and 1 Shunpi Valley, March 1906.

292. Xiphirhynchus superciliaris forresti subsp. nov.

♂♀. Differ from *s. superciliaris* Blyth in having a much shorter bill, and in the paler more cinnamon underside.

Bill along exposed culmen, *s. superciliaris*, ♀ 50 mm.

Bill along exposed culmen, *s. forresti*, ♀ 30 mm.

Type ♀, Forrest coll. 1925, No. 6000, Shweli-Salwin Divide, 10,000-11,000 feet, July 1925.

Forrest sent 2 ♀♀ Shweli-Salwin Divide, 10,000-11,000 feet, July 1925, 1 ♂ (bill damaged) hills N.W. of Tengyueh, 8,000 feet, Oct. 1925. Forests.

Bill black, tip brown; feet dark brownish olive; iris greyish yellow.

This was a very great surprise.

There is a Bhamo example in the British Museum with the breast as pale as *forresti*, but the bill is as long as in the longest Sikkim bird.

293. *Ianthocincla albogularis albogularis* Gould.

Ianthocincla albogularis Gould, *Proc. Zool. Soc. London*, 1835, p. 187 (Nepal).

Oustalet records this among the birds collected by Prince H. d'Orleans.

294. *Ianthocincla phoenicea wellsii* (La Touche).

Trochalopteron phoeniceum wellsii La Touche, *Bull. B.O.C.* vol. xlii, p. 15 (1921) (Mengtsz).

Uchida & Kuroda record 1 ♂ juv. Mengtsz, July, and 1 ♂ ad. Loukouehai, Feb., under the name of *Trochalopteron ripponi*; Forrest collected 2 ♂♂, 3 ♀♀ vicinity of Tengyueh, July–Aug. 1924. I have retained Forrest's birds under La Touche's name for the present, as there is not sufficient material to warrant my separating a fifth race of *phoenicea* (for further details cf. *Nov. Zool.* xxxii, p. 299, 1925).

La Touche records 1 ♀ Mengtsz, Feb. 1921 (type). It is very daring to found a SUBSPECIES on a SINGLE ♀.

In the 1925 collection is 1 ♂ hills N. of Tengyueh, 7,000 feet, July 1925. Bill dark brown, feet brown, iris crimson.

295. *Ianthocincla milnei sharpei* (Rippon).

Trochalopteron sharpei Rippon, *Bull. B.O.C.* vol. xii, p. 13 (1901) (Kengtung State).

Forrest collected 2 ♂♂ Shweli–Salwin Divide, Dec. 1924; Uchida & Kuroda record 1 ♂, 1 ♀ Loukouehai, Feb. under the name *milnei*; Bangs & Phillips enumerate 1 example 1 ♂ ad. Loukouehai, Feb. 1911, and describe it under the name of *Ianthocincla lustrabila*, having overlooked Colonel Rippon's description.

296. *Ianthocincla subunicolor griseata* Rothseh.

Ianthocincla subunicolor griseata Rothschild, *Nov. Zool.* vol. xxviii, p. 33, No. 110 (1921) (Shweli–Salwin Divide).

Forrest sent in his first collection 3 ♀♀ Shweli–Salwin Divide, 1 ♂, 1 ♀ Tengyueh District.

In the 1925 collection are 2 ♂♂, 3 ♀♀ Shweli–Salwin Divide, 7,000–9,000 feet, June–July and Oct. 1925. Bill and feet black; iris brown.

The characters given as distinguishing this race from *s. subunicolor* are more than confirmed in this series, which also shows it to be larger.

Wing, *s. subunicolor*, 87–88 mm.

Wing, *s. griseata*, 92–93 mm.

297. *Ianthocincla affinis oustaleti* Hart.

Ianthocincla affinis oustaleti Hartert, *Vög. palaärk. Fauna*, vol. i, p. 633, No. 970 (1909) (Tsékou, Yunnan).

Colonel Rippon obtained this bird in the Liehiang Valley, April 1906; Forrest collected 20 ♂♂, 6 ♀♀, 3 ? Liehiang Range, 3 ♂♂ Shweli–Salwin Divide, 2 ♂♂, 1 ♀ ad., 1 ? juv. Mekong–Salwin Divide.

In the 1925 collection are 11 ♂♂, 5 ♀♀ ad., 2 ? juv., 2 fledglings Shweli-Salwin Divide, 8,000-9,000 feet, July-Sept. 1925. Plumage of the fledglings differs from adults by the brown, not black crown, the absence of grey patch at side of neck, and the uniform brown upper- and underside.

298. *Ianthocincla ellioti ellioti* (Verr.).

Trochalopteron ellioti Verreaux, *Nouv. Arch. Mus. Paris*, vol. vi, *Bull.* p. 36 (1870) (Mts. of Chinese Thibet).

Oustalet records this species among Prince H. d'Orleans' birds; Andrews & Heller obtained 1 ♂ ad. Lichiang Range, Nov. 1916; Forrest collected 12 ♂♂ T'ong Shan, 20 ♂♂ 15, ♀♀ ad., 1 ? juv. Lichiang Range, 6 ♂♂, 2 ♀♀ ad., 1 ♀ juv. Mekong-Salwin Divide.

Colonel Rippon's 8 Lichiang examples in the British Museum and Forrest's from Lichiang Range and T'ong-Shán above appear intermediate between *e. ellioti* and *e. yunnanensis*; the latter appears to be a very poor subspecies.

299. *Ianthocincla ellioti yunnanensis* (Ripp.).

Trochalopteron yunnanensis Rippon, *Bull. B.O.C.* vol. xix, p. 32 (1906) (Yangtze River, Yunnan).

Trochalopteron bonvaloti Oustalet, *Ann. Sci. Nat.* (7), xii, p. 275, 276 (1892) (Tioungen, Thibet).

Ianthocincla elliotii honoripeta Hartert, *Vög. palaärk. Fauna*, vol. i, p. xlv (1910) (nom. nov. for *bonvaloti* Oust. proce.).

Colonel Rippon records this bird from Yangtze Big Bend, Talifu Valley, Shayang-Chutung Road, all Feb., March 1906; Forrest sent 13 ♂♂, 8 ♀♀, 7 ? ad. Lichiang Range.

300. *Ianthocincla cineracea cinereiceps* (Styan).

Trochalopteron cinereiceps Styan, *Ibis*, 1887, p. 167, pl. vi (?).

Bangs & Phillips record 1 ♂ Loukouchai, Feb., under the name *c. styani*, afterwards corrected; Uchida & Kuroda also record 1 ♂ from Loukouchai.

In his *Handbook of the Birds of Eastern China*, pt. i, pp. 62, 63, La Touche has written exhaustively of the three races of *Ianthocincla cineracea* (Godw.-Aust.). He there makes a statement that *styani* Oust. (partim) is a synonym of *cinereiceps* Styan. This is entirely due to the type of Styan (a cage bird without exact locality) being stated by his informant to be identical with Yunnan birds as a whole, whereas if any bird from Yunnan is identical with Styan's *cinereiceps* it can only be South-East Yunnan birds. If La Touche had compared the plate in the *Ibis* of *cinereiceps* he could not have made the error he did, as the ear-coverts and superciliary line are there shown of a brilliant chestnut, whereas in N.W. Yunnan birds (*styani* Oust.) and true Manipur *cineracea* the ear-coverts and superciliary line are olive-grey or pale olive-brown. David & Oustalet's description of their *ningpoensis* makes special mention of the chestnut ear-coverts and superciliary line, so that it is identical with Styan's *cinereiceps*, but as Styan's name has three years priority it must stand for the S. and S.E. Chinese and S. Yunnan bird, and *styani* Oust. for the W. and N.W. Yunnan bird. The key to the forms will be as follows:

- (1) Cheeks, ear-coverts, and superciliary line olive-grey. 2
Ear-coverts and superciliary line chestnut.

Ianthocincla cineracea cinereiceps.

- (2) Back more olive-grey.

Ianthocincla cineracea cineracea.

- Back more olive-brown.

Ianthocincla cineracea styani.

La Touche records 2 examples collected by M. Laurente at Szemao, S. Yunnan.

301. *Ianthocincla cineracea styani* (Oust.).

Trochulopteron styani Oustalet, *Bull. Mus. Paris*, p. 226 (1898) (Ta-Tsien-Lu).

Colonel Rippon collected this bird at Gzi-dzin Shán, April 1902, and in the Lichiang Valley in April 1906; Oustalet records 7 examples sent from Tsékou by the Rev. Father Soulié; Andrews & Heller obtained 1 ♂ ad. Malipa, March 1917; Forrest collected 1 ♂, 1 ♀ Mekong Valley, 4 ♂♂, 1 ♀ Lichiang Range, 1 ♂, 2 ♀♀ ad., 1 ? juv. vicinity of Tengyueh.

In the 1925 collection are 2 ♂♂, 1 ♀ Shweli-Salwin Divide, 8,000-9,000 feet, Oct. 1925.

302. *Ianthocincla bieti* Oust.

Ianthocincla bieti Oustalet, *Bull. Mus. Paris*, p. 163 (1897) (Upper Mekong River).

Oustalet records a single unsexed example (the type) from Tsékou sent home by the Rev. Father Soulié.

Forrest collected 1 ♂, 1 ♀ Lichiang Range, 1 ♂, 1 ♀ Mekong-Salwin Divide.

303. *Ianthocincla lanceolata lanceolata* (Verr.).

Pterorhinus lanceolatus Verreaux, *Nouv. Arch. Mus. Paris*, vol. vi, *Bull.* p. 36 (1871) (Mts. of Chinese Thibet).

In my articles on Forrest's first three collections I kept *I. lanceolata* and *I. bonvaloti* separate on account of differences in size, viz. *I. lanceolata* was supposed to have a wing-measurement of 91-98 mm. and *I. bonvaloti* of 106-113. In my account of Forrest's 1924 collection I state that Dr. Hartert and I, after carefully measuring our considerable series at Tring, have come to the conclusion that these differences in size are sexual and not racial. This proportionate sexual difference is most certainly a fact in the case of the Formosan *taiwanus* and the gigantic Tyangtze *waddelli*, and there appears to be no reason to suppose that the case of *lanceolata* is different. The type of *yunnanensis* Sharpe has a wing of 94 mm., and a Ta-Tsien-Lu one has it 100 mm. In the Styen coll. is a ♂ of 96 and ♀ of 105, and in fact all measurements run into one another. I therefore, after considerable hesitation, must differ from Outram Bangs and others, and finally say that I consider *I. lanceolata* and *I. bonvaloti* one and the same bird.

In view of these extraordinary intergradations of the measurements, I think it is very possible that a number of the specimens quoted have been wrongly sexed; if this is not so, *lanceolata* is a species varying greatly in size. Colonel Rippon collected 1 example hills east of Tengyueh, W. Yunnan, 7,000 feet, 1902 (type of his *yunnanensis* wing, 94 mm.), 1 Chutung-Yangpi Road, Feb. 1906 (wing 97 mm.), 1 example Lichiang Valley, April 1906 (wing 103 mm.); 1 Shweli-Salwin Divide, May 1906 (wing 95 mm.); M. Pichon sent home 1 example; Andrews & Heller got 1 ♂ ad. Lichiang Range, Nov. 1916, 1 ♂ ad. Mucheng, Salwin Drainage, Feb. 1917; Forrest obtained 8 ♂♂, 6 ♀♀ Lichiang Range, 1 ♂ Salwin Valley, 3 ♂♂, 4 ♀♀ Shweli-Salwin Divide, 2 ♀♀ Shweli Valley.

In his 1925 collection there are 1 ♂, 2 ♀♀ hills round Tengyueh Valley, 7,000 feet, Dec. 1925. In the British Museum are 3 Yunnan, 1 Ta-tsien-lu? Styen collection.

The red or black moustachial line is purely an individual variation, as we find examples with the line of mixed coloration.

304. *Ianthocincla chinensis leucogenys* (Blyth).

Crateropus leucogenys Blyth, *Journ. As. Soc. Bengal*, vol. xi, p. 180 (1842) (Upper Bengal err.).

Forrest obtained 1 ♀ Shweli-Salwin Divide in his first collection which I inadvertently recorded under the name of *chinensis chinensis*; Andrews & Heller collected 1 ♂, 1 ♀ ad. at Chang-lung, Salwin River, also recorded as *chinensis chinensis*.

305. *Ianthocincla chinensis lowei* (La Touche).

Dryonastes chinensis lowei La Touche, *Bull. B.O.C.*, vol. xlii, p. 52 (1921) (Hokow).

La Touche records 1 ♂, 2 ♀♀ Hokow, March 1921 (♂ type), and remarks that his collectors had seen the bird also at Loukouehai.

306. *Ianthocincla leucolophus leucolophus* (Hardw.).

Corvus leucolophus Hardwicke, *Trans. Linn. Soc. London*, vol. xi, p. 208 (1815) (Mt. above Hardwar).

One would have expected either *l. diardi* or *l. belangeri* to be the form from Yunnan, but apparently the three records I have are all *l. leucolophus*. Mr. Stuart Baker records both the former from Yunnan, but unfortunately gives no particulars, as Yunnan is outside his range.

Captain Wingate obtained the bird at Mōng-Kou 1 ♀ ad. April 1899. Andrews & Heller record 2 ♂♂ Malipa, March 1917, and state they are absolutely typical; M. Pichon sent 1 from Taiping Valley, Kanai. On his way home in 1926, Forrest obtained 3 examples near Man-Hsien, West Yunnan, and these are most valuable, for they confirm absolutely that the Yunnan bird is typical *leucolophus leucolophus* and not either of the Burmese-Tenasserim races *l. belangeri* or *l. diardi*.

“3? Thickets on hills around Man-Hsien, 3,500 feet, lat. 24° 40' N., long. 97° 40' E., 16. i. 1926.”

307. *Ianthocincla pectoralis pectoralis* Gould.

Ianthocincla pectoralis Gould, *Proc. Zool. Soc. London*, 1835, p. 186 (Nepal).

Oustalet records this species from the collection of Princee H. d'Orleans; Andrews & Heller obtained 1 ♀ ad. Malipa, March 1917.

308. *Ianthocincla canora nantiensis* (La Touche).

Trochalopteryx canorum nantiense La Touche, *Ibis*, 1923, p. 317, N. 17 (Hokow).

Ingram records 1 ♂ Mengtsz, April 1910; Bangs & Phillips enumerate 1 ♂ Loukouehai, June 1911 (both these records under *canora*); La Touche collected 2 ♂♂ Hokow, Feb.-March 1921; M. & Mme. Comby obtained 1 example.

309. *Ianthocincla caerulata latifrons* subsp. nov.

The two examples sent by Forrest in his 1925 collection have unfortunately very defective tails; in both the two pair of outer tail-feathers are missing, but in each there is present one of the third outer pair, and this has the tip pale cinnamon, NOT cinnamon, and white as in *c. kaurensis*. Upperside bright rufous as in *c. caerulatus* ear-coverts in ♂ black, in ♀ almost white. Is at once distinguished from the other three races by the very broad black frontal band.

1 ♂, 1 ♀ Shweli-Salwin Divide, 8,000 feet, July 1925. Bill black; feet pale brown; iris brown.

310. *Ianthocincla erythrocephala woodi* (Baker).

Trocholopteryx erythrocephalum woodi Stuart Baker. *Bull. B.O.C.* vol. xxxv, p. 17 (1914) (Loi-Sing, N. Shan States).

Andrews & Heller obtained 1 ♂ ad. Mu-cheng, Salwin Drainage, Feb. 1917.

311. *Ianthocincla squamata* Gould.

Ianthocincla squamata Gould, *Proc. Zool. Soc. London*, 1835, p. 48 (Himalaya).

Oustalet enumerates this bird among Prince H. d'Orleans' collection ; Forrest collected 1 ♀ Shweli-Salwin Divide, Dec. 1924.

312. *Ianthocincla forresti* Rothsch.

Ianthocincla forresti Rothschild, *Nov. Zool.* vol. xxviii, p. 35, No. 116 (1921) (Shweli-Salwin Divide).

This very distinct species has so far only been found by Forrest, and in view of the series in the 1925 collection it does not seem to be rare in its breeding area.

In the 1919 and 1924 collections there are 3 ♂♂, 1 ♀ Shweli-Salwin Divide, and 1 ♂, 1 ♀, 3 ? Tengyueh District.

In the 1925 collection are 7 ♂♂, 4 ♀♀, 1 ? ad., 2 juv. Shweli-Salwin Divide, 7,000-10,000 feet, June, July, and Oct. 1925. Bill black-brown ; feet and legs dark brown ; iris pale yellow. Young in first plumage, head and throat black, occiput and hind neck chestnut whole body above and below sooty brown-black, washed with olive ; outer web of remiges and upper coverts yellowish olive-green.

313. *Ianthocincla ocellata similis* Rothsch.

Ianthocincla ocellata similis Rothschild, *Nov. Zool.* vol. xxviii, p. 34, N. 114 (1921) (Shweli-Salwin Divide)

Forrest collected 1 single ♂ (the type) in 1919. In his 1925 collection he has sent 3 ♂♂, 2 ♀♀ Shweli-Salwin Divide, 10,000 feet, Oct. 1925. Bill, upper mandible black-brown, lower greyish ; feet brown ; iris yellow.

These extra examples confirm all the differences I gave except size ; the measurements are as follows : wing ♂♂, No. 6361, 128 mm. ; No. 6362, 139 mm. No. 6363, 133 mm. ; ♀♀ No. 6364, 132 mm. ; No. 6365, 125 mm.

314. *Ianthocincla maxima* (Verr.).

Pterorhinus maximus Verreaux, *Nouv. Arch. Mus. Paris*, vol. vi, *Bull.* p. 36, pl. iii, f. 1 (1870) (Mts. of Thihet).

Colonel Rippon obtained this bird at Yangtze Big Bend, March 1906 ; Forrest collected 18 ♂♂, 16 ♀♀, 9 ? Lichiang Range ; 2 ♂♂, 3 ♀♀ Mekong-Salwin Divide.

315. *Ianthocincla sannio* (Swinh.).

Garrulax sannio Swinhoe, *Ibis*, p. 403 (1867) (Amoy).

Garrulax albosuperciliaris Godwin-Austen, *Proc. Zool. Soc. London*, 1874, p. 45

Outram Bangs (*Bull. Amer. Mus. Nat. Hist.* vol. xlv, p. 588, declares that Swinhoe's *sannio sannio* from Central and S.E. China is distinct from Yunnan and Indo-Chinese birds, the latter being more olive above and on the tail.

Anderson records this bird 2 ad. Muangla, July 1868 ; Ingram enumerates 8 ♂♂, ♀♀ Mengtsz, March, April and July 1910 ; Bangs & Phillips list 23 speci-

mens Mengtsh and Loukouchai; Andrews & Heller collected 2 ♀♀ ad. Wan-tien and Mu-cheng, Feb. and May 1917; M. & Mme. Comby collected 1 example; M. Pichon sent home 2 specimens; Forrest collected 8 ♂♂, 3 ♀♀, 3 ? Lichiang Range, 2 ♂♂, 1 ♀ Yangtze Valley, 5 ♂♂, 5 ♀♀ Tengyueh Valley, 3 ♂♂ Tengyueh District, 1 ♂, 1 ♀ Shweli Valley, 1 ♂ Shweli-Salwin Divide, 2 ♀♀ Mekong-Salwin Divide, 1 ♂, 1 ♀ Tali Valley, La Touche records 1 ♂, 1 ♀ Mengtsh, July 1920, 1 ♂ Milati, Feb. 1921, 1 ♀ Hokow, 1 ? Loukouchai, March 1921.

In Forrest's 1925 collection are 1 ♂, 1 ♀ Tengyueh Valley, 6,000 feet, Dec. 1925. In the British Museum are 2 ♂♂ Mee Chee, Jan. 1903, Styan coll.; Colonel Rippon coll. 4 examples Talifu Valley, Feb. 1906, 3 Gyi-Dzin-Shan, April 1902, 1 Lichiang Valley, April 1902, 1 Chutung-Yangpi Road, March 1902. Mr. Kinnear and I have been quite unable, in the large series in the British Museum from China and Assam, and in the large series at Tring from the same areas, to find any differences at all; I therefore treat of the Yunnan examples under *sannio* Swinh. relegating *albosuperciliaris* Godw.-Aust. to a synonym as had been done hitherto till Outram Bangs dug it up again.

316. *Stactocichla merulina merulina* (Blyth).

Garrulax merulina Blyth, *Journ. As. Soc. Bengal*, vol. xx, p. 521 (1851) (Manipur).

Forrest collected 1 ♀ hills N.W. of Tengyueh, Nov. 1924.

317. *Leiothrix lutea lutea* (Scop.).

Sylvia lutea Scopoli, *Del. Flor. et Faun. Insulr.*, vol. ii, p. 96 (1786) (China).

Bangs & Phillips record 3 examples from Mengtsh, Feb.; La Touche collected 1 ♂, 1 ♀ Loukouchai, Feb. and April 1921.

318. *Leiothrix lutea yunnanensis* Rothschild.

Leiothrix luteus yunnanensis Rothschild, *Nov. Zool.*, vol. xxviii, p. 36, No. 119 (1921) (Shweli-Salwin Divide).

Anderson collected 6 examples of this bird at Poncee, March 1868 (of which 1 ♂, 1 ♀ are in the British Museum); Oustalet enumerates it under Prince H. d'Orleans' birds (both these are quoted under the name *luteus*); Forrest collected 13 ♂♂, 3 ♀♀ ad., 1 ♀ juv. Shweli-Salwin Divide. In his 1925 collection there are 3 ♂♂, 2 ♀♀ ad., 1 ? juv. Shweli-Salwin Divide, 10,000 feet, July and Oct. 1925. Bill orange-scarlet; feet pale brown; iris crimson. 1 ex. Tsékou (Soulié), Styan coll., is in the British Museum.

319. *Timelia pileata intermedia* Kinnear.

Timelia pileata intermedia Kinnear, *Bull. B.O.C.*, vol. xlv, p. 9 (1924) (Tonghoo).

La Touche records 1 ♀ ad., 1 ♀ juv. Hokow, March 1921.

320. *Pyctorhis sinensis sinensis* (Gm.).

Parus sinensis Gmelin, *Syst. Nat.*, vol. i, p. 1012 (1788) (Sina = China).

Captain Wingate obtained 1 ♂ ad. Ching-tung, March 1899; Ingram records 8 examples, Mengtsh, April-June 1910; Bangs & Phillips enumerate 22 specimens Mengtsh and Loukouchai; Forrest sent 1 ♂ Salwin Valley; La Touche collected 9 ♂♂, 5 ♀♀, 1 ♀ juv. Mengtsh, July-Dec. 1920 and Feb. 1921, 1 ♂ Milati, Dec. 1920, 1 ♂ Hokow, April 1921.

321. *Turdinulus brevicaudatus venningi* Har.

Turdinulus brevicaudatus venningi Harington, *Bull. B.O.C.* vol. xxxix, p. 269 (1870) (Shan States).

Anderson obtained 1 ♂ Pensee, April 1868; Colonel Rippon collected 1 ♂ ad. Salwin Valley, May 1906.

322. *Fulvetta chrysolis forresti* Rothsch.

Fulvetta chrysolis forresti Rothschild, *Bull. B.O.C.* vol. xlvi, p. 64 (1926) (Shweli-Salwin Divide).

Both in 1921 and 1923 I enumerated this bird (*Nov. Zool.* vol. xxviii, p. 37, and vol. xxx, p. 45) as *Proparus swinhoei*, but I have since received the true *swinhoei* from Kwantsien, Minho River, China; I find that there have never been any examples of this extremely rare bird in England before, and Forrest's 17 examples belong to an undescribed race (see as above for full particulars). *Proparus* was first applied to a species of *Minla*, and is a pure synonym of that genus. As the next in priority therefore we must use *Fulvetta* David & Oustalet. Forrest sent 2 ♂♂, 3 ♀♀ Shweli-Salwin Divide, 1 ♂ Tengyueh District, 1 ♂ Lichiang Range.

323. *Fulvetta ruficapillus sordidior* (Ripp.).

Proparus sordidior Rippon, *Bull. B.O.C.* vol. xiii, p. 60 (1903) (Gyi-dzin-Shán).

Colonel Rippon collected 1 Yangtze Big Bend, April 1906, 13 examples Gyi-dzin-Shán, April 1902, 1 Talifu Valley, March 1902, 1 Ranges E. of Talifu, April 1902, 6 Lichiang Valley, March-April 1906, 1 Shayang-Chutung Road, March 1902; in the British Museum are 3 ♂♂ Meechu, Jan. 1902, and 5 Yunnan, Styan coll.; Forrest sent 3 ♂♂ T'ong-Shán, 2 ♂♂ Yangtze Valley, 2 ♂♂, 2 ♀♀ Tengyueh District, 9 ♂♂, 5 ♀♀, 8 ? ad. Lichiang Valley, 5 ♂♂, 5 ♀♀ Mekong Valley and Mekong-Salwin Divide; La Touche enumerates 1 ♂ Yunnanfu, May 1922, and 2 ? Kopaotsun, June 1921.

324. *Fulvetta striaticollis yunnanensis* (Rothsch.).

Proparus striaticollis Rothschild, *Bull. B.O.C.* vol. xliii, p. 11 (1922) (Mekong Valley).

Oustalet records 3 examples from Tsékou, collected by the Rev. Father Soulié; Forrest sent 1 ♀ Mekong Valley, 1 ♂ Mekong-Salwin Divide.

325. *Fulvetta vinipectus bieti* (Oust.).

Alcippe (Proparus) bieti Oustalet, *Ann. Sci. Nat.* ser. 7, vol. xii, pp. 283, 304, pl. ix, f. 2 (1892) (Tatsien-Lou).

Colonel Rippon collected 7 examples Talifu Valley, Feb. 1906, 5 Yangtze Big Bend, March 1906, 3 Lichiang Valley, April 1906; Captain Wingate obtained 1 specimen ♂ ad. at Ching-tung, March 1899; Oustalet says it is common at Tsékou, and probably breeds there; Forrest sent 19 ♂♂, 16 ♀♀, 9 ? ad. Lichiang Range, 1 ♀ hills near Lichiang Valley, 3 ♂♂ Tengyueh District, 3 ♂♂, 1 ♀ ad. Mekong-Salwin Divide, 2 ♂♂ Shweli-Salwin Divide.

In his 1925 collection are 2 ♂♂, 2 ♀♀ Shweli-Salwin Divide, 9,000 feet, July-Aug. 1925. In the British Museum in addition are 4 examples Gyi-dzin-Shán, March and April, 1902, Colonel Rippon; 1 Tsékou Soulié; and 1 Hoa-tron Dejean.

326. *Moupinia poecilotis sordidior* Rothsch.

Moupinia poecilotis sordidior Rothschild, *Nov. Zool.* vol. xxviii, p. 36, No. 120 (1921) (Lichiang Range).

Forrest collected 23 ♂♂, 4 ♀♀, 6 ? ad. Lichiang Range ; 1 ♂ ad. hills E. of Lichiang Valley.

327. *Schoeniparus dubius genestieri* (Oust.).

Aciippe genestieri Oustalet, *Bull. Mus. d'Hist. Nat. Paris* vol. iii, p. 210 (1897) (Tsékou).

In the first article on Forrest's collections (Nov. Zool. xxviii, 1921), I sank *intermedius* Ripp. as a synonym ; in the two subsequent articles (Nov. Zool. xxx, 1923) I left the matter doubtful, but the large series (23) sent in the 1924 collection finally enabled Dr. Hartert and myself to come to the firm opinion that *intermedius* is nothing but an immature stage of plumage of *genestieri*.

Colonel Rippon obtained this bird as follows : 1 example hills E. of Yungchang, Jan. 1906, 2 Lichiang, March 1906, 4 Lichiang Valley, April 1906, 1 Yungchang-Salwin Road, April 1906 ; Ingram records 3 ♂♂, 2 ♀♀ Mengtsz, June-July 1910 ; Bangs & Phillips enumerate 13 examples Mengtsz and Loukou-chai ; Andrews & Heller obtained 2 ♂♂, 1 ♀ Ho-mu-shu Pass, and Mueheng, Salwin Drainage, Feb. and April 1917 ; M. Pichon sent 1 specimen ; Forrest collected 1 ♂, 2 ♀♀ T'ong-Shán, 1 ♂ Yangtze Valley, 4 ♂♂, 1 ♀, 3 ? ad., 1 ? juv. Tengyueh District, 3 ♂♂, 5 ? ad., 1 ? juv. Lichiang Range, 2 ♂♂, 3 ♀♀, 1 ? juv. Mekong-Salwin Divide, 8 ♂♂, 6 ♀♀, 1 ? ad., 2 ♂♂, 1 ♀ juv. Shweli-Salwin Divide.

Uchida & Kuroda record 3 ♂♂, 2 ♀♀ Mengtsz, 1 ♀ Loukou-chai under the name of *variegatus* Styan. In addition there are in the British Museum 1 example Shan-Kwun Tali Valley, March 1902, 1 Chutung-Yangpi Road, Jan. 1902, 8 Gyi-dzin-Shán, April 1902, Colonel Rippon ; 3 examples Yunnan, and 4 ♂♂, 2 ♀♀ Mee chu, Jan. 1903, Styan coll.

328. *Pseudominla castaneiceps castaneiceps* (Hodgs.).

Minla castaneiceps Hodgson, *Ind. Rev.* 1838, p. 38 (Nepal).

Forrest was the only collector to find this bird in Yunnan ; he sent home 3 ♂♂ Shweli-Salwin Divide ; 3 ♂♂, 2 ♀♀ Tengyueh District.

[On the genera **Brachypteryx** and **Heteroxenicus**.

Mr. Stuart Baker has kept the above genera separate, and gives as distinctive characters that *Brachypteryx* has shorter and thicker tarsi and a longer tail than *Heteroxenicus*. On comparing the ♂♂ of *montana* and *cruralis*, the respective genotypes, I fail to see any but specific differences in these characters, whereas the concealed or partially concealed white eyebrow and general coloration shows that they are very closely allied. I therefore consider that *Heteroxenicus* is a synonym of *Brachypteryx*. Mr. Kinnear pointed out to me that, as shown by the British Museum series of *Brachypteryx nipalensis*, the ♂♂ in some areas of its range are blue, while in others they are like the ♀♀. According to the above-mentioned series, the ♂♂ are brown in Assam and Yunnan, in China and in Java, whereas they are blue in Nepal and Sikkim, and the Malay Peninsula. The number of subspecies are as follows :

Brachypteryx nipalensis nipalensis. Nepal-Tenasserim.

B. n. carolinae. Fokhien.

B. n. harterti (2 ♀♀ only known). Szechuan and Yunnan.

B. n. wrayi. Malay Peninsula.

B. n. leucophrys. Java.

The Tring Museum series does not entirely confirm this, as we have a ♂ from Margherita, Assam, showing blue feathers. It is therefore only safe to say that the ♂♂ are never blue in Java, and very seldom in Assam.

Mr. Kinnear suggested that I had mistaken Yunnan *nipalensis* for *cruralis*, owing to blue ♂♂ occurring in both, but my 2 adult ♂♂ and 2 adult ♀♀ at Tring are undoubtedly *cruralis* and the 1 ♀ *nipalensis* is Weigold's *n. harterti*.]

329. *Brachypteryx cruralis cruralis* Blyth.

Brachypteryx cruralis Blyth. *Journ. As. Soc. Bengal*, vol. xvi, p. 136 (1847) (Nepal).

Oustalet records this bird from the collection of Prince H. d'Orleans: Forrest sent 8 ♂♂ ad., 1 ♂, 1 ? juv. Lichiang Range, 1 ♀ Tengyueh District, 1 ♀ Shweli-Salwin Divide. In the 1925 collection are 1 ♀ ad. (sexed ♂) Shweli-Salwin Divide, 9,000 feet, July 1925, 1 ? juv. Tengyueh District, 7,000 feet, Aug. 1925.

330. *Brachypteryx cruralis laurentei* (La Touche).

Heteroxenicus cruralis laurentei La Touche. *Bull. B.O.C.* vol. xlii, p. 29 (1921) (Mengtsz).

This form is said by its author to differ from *c. cruralis* in its "conspicuously heavier" bill, "much larger" wing, and "almost uniform belly." I have not examined the type, but can quite well believe that Mengtsz birds should be different from West Yunnan examples; but it was very bold indeed to describe this as distinct from 1 example. 1 ♂ Mengtsz, Oct. 31, 1920 (Laurent coll.).

331. *Brachypteryx nipalensis harterti* Weig.

Brachypteryx nipalensis harterti Weigold, *Ornith. Monatsb.* vol. xxx, p. 63 (1922) (Omeischan).

Forrest sent 1 ♀ hills round Tengyueh, 6,000 feet, July 1925, Thickets. "Bill dark brown; feet olive-brown; iris brown." This is the first record for Yunnan, and the second specimen known.

332. *Brachypteryx joannae* (La Touche).

Heteroxenicus joannae La Touche, *Bull. B.O.C.* xliii, p. 21 (1922) (Mengtsz).

La Touche's type remains unique. 1 ♀ ad. Mengtsz, May 3, 1921.

333. *Leioptila desgodinsi* (Dav. & Oust.).

Sibia desgodinsi David & Oustalet, *Bull. Soc. Philom. Paris* (7), 1, p. 139 (1877) (Yer-ka-lo).

Colonel Rippon obtained 1 example Yungchang-Chutung Road, Jan. 1906, 6 Lichiang Valley, March-April 1906, 2 Yungchang-Salwin Road, Jan. and April 1906; Captain Wingate collected 1 ♂ ad. S. Yunnan, March 1899, 1 ♀ ad. Môngsen, March 1899; Oustalet records it among Prince H. d'Orleans' birds; the Rev. Father Soulié sent 10 specimens from Tsékou, where it was very common; Bangs & Phillips record 4 examples from Loukouchai, Feb.; Andrews & Heller collected 1 ♂, 1 ♀ ad. Tai-ping-pu and Yao-kuan, Jan. and April 1917; Forrest sent 21 ♂♂, 11 ♀♀, 11 ? Lichiang Range, 1 ♀ Tali Valley, 1 ♂, 2 ♀♀ Tengyueh District, 1 ♂, 2 ♀♀ Shweli Valley, 1 ♂ Shweli-Salwin Divide, 1 ♀ Mekong-Salwin Divide.

In his 1925 collection are 2 ♂♂, 2 ♀♀ Tengyueh Valley, 6,000 feet, Dec. 1925,

2 ♂♂, 1 ♀ hills N.W. of Tengyueh, 7,000 feet, May 1925, 1 ♂, 1 ♀ Shweli-Salwin Divide, July-Aug. 1925, 9,000 feet.

Colonel Rippon also got 9 examples at Gyi-dzin-Shán, March, April, and Sept. 1902, and 3 examples Ta-lau-pa, Chntung-Yangpi Road, March 1902. In the British Museum are specimens from Tsékon collected by Soulié, Styan coll., and 1 Yunnan, Styan coll.

334. *Leioptila pulchella coeruleotincta* Rothsch.

Leioptila pulchella coeruleotincta Rothschild, *Nov. Zool.* vol. xxviii, p. 38, No. 128 (1921) (Shweli-Salwin Divide).

Oustalet records this bird, among those obtained by Prince H. d'Orleans, under the name of *pulehella* Godw.-Aust.

Forrest collected 2 ♂♂ Tali Valley, 1 ♂, 3 ♀♀, 1 ? Tengyueh District, 3 ♂♂, 2 ♀♀ Shweli-Salwin Divide. In his 1925 collection are 4 ♂♂, 5 ♀♀ Shweli-Salwin Divide, 9,000 feet, June-Oct. 1925.

335. *Leioptila gracilis* (McClell.).

Hypsipetes gracilis McClelland, *Proc. Zool. Soc. London*, 1839, p. 159 (Assam).

Forrest secured 1 ♂ hills N. of Tengyueh in 1924, which is the only Yunnan record.

336. *Staphidea striata striata* (Blyth).

Ixulus striatus Blyth, *Journ. As. Soc. Bengal*, vol. xxviii, p. 413 (1859).

Andrews & Heller obtained 1 ♂ ad. Chang-lung, Salwin River, 2,000 feet, March 1917.

337. *Staphidea torquola* (Swinh.).

Siva torquola Swinhoe, *Ann. Mag. Nat. Hist.* (4) v, p. 174 (1870) (Tingchow).

Oustalet records this bird among Prince H. d'Orleans' collection, but there appears to be some doubt as to whether it was got on the Yunnan side or the Tonkin side of the Tonkin-Yunnan Boundary.

338. *Stachyris nigriceps coltarti* Har.

Stachyris nigriceps coltarti Harington, *Bull. B.O.C.* vol. xxxiii, p. 61 (1913) (Margherita).

Anderson records 2 ♂♂, 1 ? Ponsee, March-April 1868.

339. *Stachyris nigriceps yunnanensis* La Touche.

Stachyris nigriceps yunnanensis La Touche, *Bull. B.O.C.* vol. xlii, p. 18 (1921) (Hokow).

La Touche records 1 ♂ Hokow, April 2, 1921 (the type); Bangs & Phillips record 1 ♂ Loukouchai, Feb. 1911.

340. *Stachyris chrysoea* subsp. ?

Anderson collected 1 example Ponsee, April 1868, but whether it is *chrysoea binghami* Ripp., *c. assimilis* Wald., or *c. chrysoeps* Richm. it is impossible to say without a comparison of the Ponsee specimen which was in the Calcutta Museum.

341. *Stachyridopsis ruficeps bhamoensis* Har.

Stachyridopsis bhamoensis Harington, *Ann. Mag. Nat. Hist.* (S), ii, p. 245 (Bhamo).

Colonel Rippon obtained 1 example at Shayang, March 1902; 1 example Gyi-dzin-Shán, April 1902, and 1 example Salwin-Shweli Divide, May 1906; Forrest collected 4 ♂♂, 3 ♀♀ Shweli-Salwin Divide, 2 ♂♂, 3 ♀♀, 1 ? Mekong-Salwin Divide, 1 ? Lichiang Range, 3 ♂♂, 2 ♀♀, 1 ? Tengyueh District.

342. *Stachyridopsis ruficeps bangsi* La Touche.

Stachyridopsis ruficeps bangsi La Touche, *Bull. B.O.C.* vol. xliiv, p. 32 (1923) (Milati).

Bangs & Phillips record 4 specimens Mengtsh, Feb. and Dec., under the name of *ruficeps*; La Touche records (*Ibis*, 1923) 1 ♂ Milati (type), Feb. 1921, 2 ♂♂, 1 ♀ Loukouchai, April 1921, under the name of *ruficeps davidi* Oust. (altered later as above). Mr. La Touche in the above Bulletin also mentions an example sent him in 1923 from Yunnanfu, which he says is nearer to *r. davidi* than to his *r. bangsi*, but is too worn to decide upon.

343. *Actinodura egertoni ripponi* O.-Grant.

Actinodura ripponi Ogilvie-Grant, *Ibis*, 1907, p. 166 (Mount Victoria).

Anderson obtained 1 example Pensee, March 1868; Oustalet records a specimen collected in N. Yunnan in 1896 by Prince H. d'Orleans (both these are recorded under the name *egertoni*); Forrest collected 6 ♂♂, 5 ♀♀ ad., 2 ♀♀, 1 ? juv. Tengyueh District, 1 ♀ Shweli Valley, 4 ♂♂, 3 ♀♀, 1 ? ad. Shweli-Salwin Divide. (I identified the 4 ♂♂, 2 ♀♀ of the 1919 collection wrongly as *egertoni egertoni* Gould.)

In the 1925 collection are 1 ♂ hills N. of Tengyueh, 8,000 feet, Oct. 1925; 3 ♂♂, 2 ♀♀ Shweli-Salwin Divide, 7,000-10,000 feet, June-Aug. 1925. Bill bone yellow, upper mandible darker; feet brown; iris pale grey.

344. *Actinodura ramsayi yunnanensis* Bangs & Phillips.

Actinodura ramsayi yunnanensis Bangs & Phillips, *Bull. Mus. Comp. Zool. Harvard Camb.* vol. lviii, p. 288 (1914) (Loukouchai).

Bangs & Phillips record 18 examples Mengtsh, May, Loukouchai, Jan., Feb., Dec. (type ♂, Jan. 29, 1911, Loukouchai); La Touche collected 8 ♂♂, 2 ♀♀, 1 ? ad. Loukouchai, Dec. 1920, and Jan.-April 1921.

345. *Actinodura souliei* Oust.

Actinodura souliei Oustalet, *Bull. Mus. d'Hist. Nat. Paris*, vol. iii, p. 164, No. 2 (1897) (Tsékou).

Oustalet described this still unique species from a bird sent him from Tsékou by the Rev. Father Soulié.

[*Ixops nipalensis* (Hodgs.) and *I. waldeni* (Godw.-Aust.).

Mr. Kinnear is of opinion that the barred feathers in the crest of the 3 birds I place under *waldeni* and the rufous of their breast feathering are not sufficient to be of specific importance; and that the traces of dark markings on the breast of *daflaensis* prove that the 2 birds I place under *nipalensis* and the 3 mentioned

above are all 5 subspecies of *nipalensis*, as Baker has said. I am still not yet convinced, especially in view of the poor and scanty material known of *dafluensis*. I therefore prefer for the present to uphold both *nipalensis* and *waldeni* as two species.]

346. *Ixops waldeni saturatior* Rothsch.

Ixops poliotis saturatior Rothschild, *Nor. Zool.* vol. xxviii, p. 38, No. 130 (1921) (Shweli-Salwin Divide).

Forrest collected 4 ♂♂, 2 ♀♀ of this bird in 1919, 2 ♂♂ Shweli-Salwin Divide, June and Dec., 2 ♂♂, 2 ♀♀ Tengyueh District, and these were all known of this bird till his 1925 collection, which includes a large series, 9 ♂♂, 6 ♀♀, ad. 2 ♀♀ juv. Shweli-Salwin Divide, 8,000-10,000 feet, June-Oct. 1925. Bill dark brown; feet brown; iris creamy grey. The adult ♀♀ appear to have the edges of the elongated feathers on the crown pale or greyish brown, NOT clear grey as in the ♂♂. The crown feathers in the youngest ♀ are less elongated and uniform umber-brown; in the next youngest ♀ the crown feathers dark slate uniform without trace of barring and edged with paler slate.

This form is at once distinguished from *w. poliotis* by the deep chestnut, NOT cinnamon, breast, each feather edged with cinnamon buff; 1 ♂ No. 6401, however, has the edgings of the feathers so wide that the breast appears much paler, but still not at all uniform.

347. *Ixops nipalensis nipalensis* (Hodgs.).

Cinlosoma nipalensis Hodgson, *As. Res.* vol. xix, p. 145 (1836) (Nepal).

Mr. Stuart Baker makes *waldeni* and *poliotis* subspecies of *nipalensis*, but I cannot agree to this. I consider there are two species *nipalensis* and *waldeni*, and they stand as follows:

Ixops nipalensis nipalensis (Hodgs.). Nepal, Sikkim, Bhutan, and W. Yunnan.

Ixops nipalensis dafluensis (Godw.-Aust.). Daffa and Miri Hills.

Ixops waldeni waldeni (Godw.-Aust.). Naga Hills and Manipur.

Ixops waldeni poliotis Ripp. Chin Hills and Mt. Victoria.

Ixops waldeni saturatior Rothsch. N.W. Yunnan.

Anderson secured 1 example at Pensee, March 1868. (Anderson's specimen is or was in Calcutta, and therefore I cannot be absolutely sure of the identification.)

348. *Minla ignotinca ignotinca* Hodgs.

Minla ignotinca Hodgson, *Ind. Rev.* 1838, p. 33 (Nepal).

Colonel Rippon obtained 1 example, Chutung-Yangpi Road, March 1902. 1 Ta-lau-pa Chutung, March 1902; Forrest collected 3 ♂♂, 1 ♀ ad. Salwin Valley, 10 ♂♂, 4 ♀♀ Shweli-Salwin Divide, 6 ♂♂, 6 ♀♀ Tengyueh District. In my account of the 1918-1919 and 1921 collections I treated *jerdoni* and *ignotinca* as the same; while in my account of the 1924 collection I recognised three local races: *ignotinca ignotinca* Hodgs. from Himalayas, Assam, etc., to Western Yunnan; *i. jerdoni* Verr. Szechuan; and *i. mariae* La Touche, S.E. and S. Yunnan

and Tonkin (fide Charles Oberthür). This I feel sure is correct, and the key to the subsp. is as follows :

- | | | |
|----|---------------------------------|---------------------|
| 1. | { Baek olive. | 2. |
| | { Baek dark vinaceous chestnut. | ignotinca ignotinca |
| 2. | { Breast white or cream. | ignotinca jerdoni |
| | { Breast yellow. | ignotinca mariae |

In Forrest's 1925 collection are 2 ♂♂ (1 sexed ♀), 5 ♀♀ (1 sexed ♂) Shweli-Salwin Divide, 9,000-10,000 feet, June-Aug. 1925 ; 1 ♂ hills N.W. of Tengyueh, 8,000 feet, Nov. 1925.

349. *Minla ignotinca mariae* La Touche.

Minla ignotinca mariae La Touche, *Bull. B.O.C.* vol. xlii, p. 30 (1921) (Milati).

Bangs & Phillips record 8 examples from Mengtsz. Jan., Feb., and Sept., under the name of *jerdoni* ; La Touche enumerates 2 ♂♂, 1 ♀ Milati, Jan. 1921, 2 ♂♂ 1 ♀ Loukouchai, Feb., March, April 1921.

350. *Mixornis rubricapilla rubricapilla* (Tieck.).

Motacilla rubricapilla Tieckell, *Journ. As. Soc. Bengal*, vol. ii, p. 576 (1833) (Maunbhúm).

Oustalet records this species among the birds of Prince H. d'Orleans ; Andrews & Heller collected 1 ♂, 1 ♀ ad. Namting River, and Chang-lung, Salwin Drainage, Feb.-March 1917.

351. *Mixornis rubricapilla minor* Gyldst.

Myxornis gularis minor Gyldenstolpe *Kungl. Sven. Vet. Hand.* vol. I, No. 8 (*Birds Swedish Zool. Exp. Siam*, 1911-1912, p. 60, No. 105 (1913) (Pak Koh, N. Siam).

Bangs & Phillips record 1 ♂ Mengtsz., June 1911, under the name of *rubricapilla* ; La Touche collected 3 ♂♂, 1 ♀ ad., 1 ♀ juv. Hokow, March-April 1921.

352. *Siva cyanuroptera wingatei* O.-Grant.

Siva wingatei Ogilvie-Grant, *Bull. B.O.C.* vol. x, p. 38 (1900) (Yunnan City).

Anderson obtained 1 ♀ Ponce, March 1868 ; 1 ♂ ad. Yunnan City, Feb. 1899, was collected by Captain Wingate (type of the subspecies) ; Ingram enumerates 4 ♂♂, 2 ♀♀ Mengtsz., June-July 1910 ; Bangs & Phillips record 19 examples from Mengtsz., March-Dec. 1910 ; Andrews & Heller got 1 ♂, 1 ♀ ad. Hui-yao and My-cheng, Feb. and May 1917 ; Forrest collected 1 ♀ Shweli Valley, 10 ♂♂, 7 ♀♀ Shweli-Salwin Divide, 5 ♂♂, 3 ♀♀ Tengyueh District, 4 ♂♂, 4 ♀ Lichiang Range ; La Touche records 1 ♂, 1 ♀ Mengtsz., July and Oct. 1920, 11 ♂♂, 5 ♀♀ Milati, Dec. 1920, Jan.-Feb. 1921, 1 ♀ Loukouchai, Feb. 1921, 1 ♀ Lotukow, May 1921.

In Forrest's 1925 collection are 1 ♂, 2 ♀♀ hills N.W. of Tengyueh, 6,000-7,000 feet, July 1925, 2 ♀♀ Shweli-Salwin Divide, 7,000-9,000 feet, July 1925. Bill dark brown, base of lower mandible orange-brown ; feet greyish olive ; iris yellowish grey.

In the British Museum are 2 examples from Yangpi-Talifu Road, March 1902 and April 1906 ; 1 Gyi-dzin-Shán, March 1902 ; hills E. of Talifu, March 1902 ; 4 ♂♂, 2 ♀♀ Mu-chu, Jan. 1903, all from Colonel Rippon.

353. *Siva strigula yunnanensis* Rothsch.

Siva strigula yunnanensis Rothschild, *Nov. Zool.* vol. xxvii, p. 40, No. 134 (1921) (Lichiang Range).

In the freshly moulted birds the dark olivaceous orange head easily distinguishes the Yunnan birds from *castaneicauda* and *malayana*. Oustalet records this species among Prince H. d'Orleans' birds under the name of *strigula*; Colonel Rippon obtained 3 examples Lichiang, March 1906, 1 Lichiang Valley, April 1906, 1 Yangpi Chutung, April 1906; Captain Wingate collected 1 ♂ ad. Chingtung, March 1899 (both Colonel Rippon's birds and Captain Wingate's 1 ♂ are recorded under the name *castaneicauda*); Bangs & Phillips record 1 ♂, 1 ♀ Mengtsh, Jan.-Feb., under the name of *castaneicauda*; Forrest sent 42 ♂♂, 25 ♀♀, 12 ? Lichiang Range, 2 ♂♂, 5 ♀♀ Tengyueh District, 1 ♂ T'ong-Shán, 7 ♂♂, 5 ♀♀ Shweli Valley, 4 ♂♂, 2 ♀♀ ad., 1 ? juv. Shweli-Salwin Divide. In the 1925 collection are 7 ♂♂, 4 ♀♀ Shweli-Salwin Divide, 9,000-10,000 feet, June-Aug. 1925.

[On the genera *Yuhina* and *Ixulus*.

In my former four articles on Forrest's birds, I united the genera *Yuhina* and *Ixulus*. Mr. Stuart Baker, in his new edition of the birds in the *Fauna of British India*, however, keeps them separate. I do not consider his differentiating characters of "shorter, deeper, and more curved at the tip" for the bill, and for the rictal bristles and hairs over bill of "weaker and less developed," of any diagnostic value at all; the only point of difference I find in the 3 species placed in *Ixulus*, viz. *occipitalis*, *flavicollis*, and *humilis*, as opposed to the 4 species *gularis*, *diademata*, *occipitalis*, and *nigrimentum* which are placed in *Yuhina*, is that the feathers of the crest are much broader, and almost truncated at the ends, while those of the *Yuhina* group are narrow and more or less sharply pointed. If we consider the shape of the crests in other groups of birds, such as the Peacocks, Monaul Pheasants, Cockatoos, etc., I think the majority of ornithologists will agree with me that this alone is not sufficient reason for keeping *Ixulus* and *Yuhina* separate. I therefore consider that *Ixulus* is a synonym of *Yuhina*. This brings about that two *occipitalis* occur in the same genus, neither of which has any synonyms. The bird included by Mr. Baker under *Ixulus*, i.e. described by Blyth, is not so old as Hodgson's, so I herewith name Mr. Baker's "Chestnut-headed *Ixulus*" *Yuhina bakeri* nom. nov.]

354. *Yuhina gularis yangpiensis* Sharpe.

Yuhina yangpiensis Sharpe, *Bull. B.O.C.* vol. xiii, p. 12 (1900) (Yangpi).

Colonel Rippon obtained the type-specimen at Yangpi, March 22, 1902.

He afterwards collected a large series on Mt. Victoria in April 1904.

The type and the series from Mt. Victoria are darker on the back and much more strongly washed with rufous below than *g. gularis*.

355. *Yuhina gularis griseotincta* Rothsch.

Yuhina gularis griseotincta Rothschild, *Nov. Zool.* vol. xxviii, p. 42, No. 141 (1921) (Shweli-Salwin Divide).

This form differs from both *g. gularis* and *g. yangpiensis* in having the sides of the head and neck much greyer and the throat and chest more vinaceous;

it apparently is a mountain form occurring at higher elevations and more in N.W. Yunnan.

Oustalet records this bird among those of Prince H. d'Orleans, under the name of *gularis*; he also records it as procured at Tsékou by the Rev. Father Soulié; Forrest collected 1 ♂ Salwin Valley, 4 ♂♂, 5 ♀♀ Shweli-Salwin Divide, 2 ♂♂, 1 ♀ Tengyueh District, 14 ♂♂, 11 ♀♀, 5 ? ad. Lichiang Range.

In his 1925 collection are 1 ♂ Hills N. of Tengyueh, 9,000 feet, Oct. 1925; 3 ♂♂, 1 ♀ Shweli-Salwin Divide, 8,000-9,000 feet, Aug. 1925.

356. *Yuhina bakeri* Rothsch.

Yuhina bakeri Rothschild *antea* p. 276 (nom. nov. for *occipitalis* Blyth) (1926) (Nepal).

Oustalet records under the name of *occipitalis* 3 specimens from Tsékou sent by Rev. Father Soulié. Oustalet points out some slight differences between these Yunnan birds and some Indian examples in the Paris Museum, collected by Hodgson. It must remain for the future, however, by means of comparing fresh Indian and Yunnan material, for ornithologists to decide if the Yunnan birds are really distinct.

357. *Yuhina flavicollis rouxi* (Oust.).

Ixulus rouxi Oustalet, *Bull. Mus. d'Hist. Nat.* vol. ii, pp. 184 and 186 (1896) (Ly-Sien-Kiang or Black River).

Oustalet records only the type ♀ as above, but in 1901 (*Nouv. Arch. Mus. d'Hist. Nat. Paris* (4) 3), he enumerates a second specimen also obtained by Prince H. d'Orleans; Bangs & Phillips record 10 examples from Mengtsh, Jan.-March; Andrews & Heller obtained 1 ♂ ad. Tai-ping-pu, April 1917; Forrest collected 2 ♂♂, 2 ♀♀, 1 ? ad. Tengyueh District, 8 ♂♂, 1 ♀ Shweli-Salwin Divide; La Touche records 3 ♂♂, 2 ♀♀ Loukouchai, April 1921.

In Forrest's 1925 collection are 5 ♂♂, 3 ♀♀ Shweli-Salwin Divide, 10,000-11,000 feet, July-Aug. 1925.

358. *Yuhina diademata ampelina* Ripp.

Yuhina ampelina Rippon, *Bull. B.O.C.* vol. xi, p. 12 (1900) (WararBum, 6,000 feet, E. of Bhamo).

Hitherto, in my first two articles on Forrest's collections, I maintained the subspecies *ampelina*, whereas in my third article I sank it as a synonym of *diademata diademata* after Mr. Kinnear, and I had compared a very large series from both areas of distribution. This view I kept up in my article on Forrest's 1924 collection. But now I have been able to examine freshly moulted birds from the same month of the year and from localities from which *d. diademata* and *d. ampelina* respectively are supposed to come. At the same time I have examined absolutely worn birds of both just before the moult, and I state frankly in this stage they are indistinguishable. The freshly moulted birds, however, can easily be distinguished as *d. diademata* is much more rufous in tone than *d. ampelina*, some of which are almost sooty black. As our knowledge of the distribution of the two forms in China is still very imperfect, I shall assume for the present that all Yunnan birds are *ampelina*. Oustalet records it as *diademata* from Tsékou from Rev. Father Soulié, and Captain Wingate collected 1 ♂ ad. Yunnan City, Feb. 1899; Colonel Rippon collected 1 example Talifu Valley,

Feb. 1906, 8 Lichiang, March–April 1906; Bangs and Phillips record 4 examples under the name of *diademata* from Mengtsz and Loukouchai; Andrews & Heller got 1 ♂, 1 ♀ ad. Lichiang Snow Mts., Nov. 1917; Forrest collected 18 ♂♂, 20 ♀♀, 12 ? ad. Lichiang Range, 2 ♂♂, 1 ♀ hills E. of Lichiang Plain, 2 ♂♂ ad., 1 ♀ juv. Tengyueh District, 1 ♂ Salwin Valley, 1 ♂, 2 ♀♀ Mekong–Salwin Divide.

In the 1925 collection are 4 ♂♂, 2 ♀♀ ad., 1 ♀ juv. Shweli–Salwin Divide, 7,000–9,000 feet, July–Aug. 1925, 1 ♂, 1 ♀ Tengyueh Valley, 7,000 feet, Dec. 1925.

Colonel Rippon also collected 4 Shan–Kwan Tali Valley, March 1902, 1 Mekong–Yuchang Divide, March 1906, 4 Chutung–Yangpi Road, March 1902, 12 Gyi–dzin–Shán, March–April 1902, 1 Ta–lan–pa, March 1902, 1 ♂ Yungchang, Styán coll., is in the British Museum.

359. *Yuhina occipitalis obscurior* Rothschild.

Yuhina occipitalis obscurior Rothschild, *Nov. Zool.* vol. xxviii, p. 42, No. 144 (1921) (Lichiang Range).

Some Sikkim examples have the crest feathers and hindneck almost as grey as in Yunnan birds, but they can easily be distinguished as the Sikkim *o. occipitalis* always has the throat, foreneck and breast washed or suffused with rusty brown, whereas *o. obscurior* from Yunnan has these parts suffused with a strong vinaceous shade. Colonel Rippon obtained 1 example on the Chutung–Yangpi Road, Feb. 1906; Bangs & Phillips record 2 specimens Mengtsz, Jan.; Andrews & Heller collected 1 ♂, 1 ♀ ad. Lung–ling March 1917; Forrest sent 3 ♀♀ Tengyueh District, 2 ♂♂, 1 ♀ Mekong–Salwin Divide, 29 ♂♂, 30 ♀♀, 12 ? ad. Lichiang Range. In the 1925 collection are 1 ♂, 2 ♀♀ Shweli–Salwin Divide, 9,000–11,000 feet, June–July 1925.

(The ear-coverts of *o. obscurior* are grey, not brown, as in *o. occipitalis*.)

360. *Yuhina nigrimentum intermedia* Rothschild.

Yuhina nigrimentum intermedia Rothschild, *Nov. Zool.* vol. xxx, p. 46, No. 93 (1923) (Mekong–Salwin Divide).

Forrest only obtained this bird in 1921. Oustalet records this bird under the name of *nigrimentum* from Tsékou, collected by the Rev. Father Soulié; Forrest sent 1 ♂ ad. Mekong Valley, 2 ♂♂, 2 ♀♀, 1 ? ad. Mekong–Salwin Divide.

361. *Erpornis xantholeuca xantholeuca* Hodgs.

Erpornis xantholeuca Hodgson, *Journ. As. Soc. Bengal*, vol. xiii, p. 380 (1844) (Nepal).

Mr. La Touche is the only collector who procured this bird in Yunnan, 2 ♀♀ Loukouchai, Feb. and April 1921.

362. *Myzornis pyrrhoura* Hodgs.

Myzornis pyrrhoura Hodgson, *Journ. As. Soc. Bengal*, vol. xii, p. 984. (1843) (Nepal).

Oustalet records an example sent by the Rev. Father Soulié in 1900 from Tsékou; Forrest collected 2 ♂♂, 2 ♀♀ Mekong–Salwin Divide in 1921.

In his 1925 collection he sent 3 ♂♂, 3 ♀♀ Shweli–Salwin Divide, 11,000–12,000 feet, July–Aug. 1915. Bill black; feet brownish olive; iris dark brown.

363. *Cutia nipalensis nipalensis* Hodgs.

Cutia nipalensis Hodgson, *Journ. As. Soc. Bengal*, vol. v, p. 774 (1836) (Nepal).

Oustalet records this bird among those obtained by Prince H. d'Orleans; Andrews & Heller record 1 ♂ ad. Ho-mu-shu Pass April 1917; Forrest obtained it for the first time in 1925. There are 3 ♂♂ (1 sexed ♀) Shweli-Salwin Divide, 9,000-10,000 feet, Oct. 1925. Forests. Bill black; feet orange to brownish yellow; iris brown. Here again the Yunnan bird is the Himalayan race and not the Malayan one.

364. *Pteruthius rufiventer* Blyth.

Pteruthius rufiventer Blyth, *Journ. As. Soc. Bengal*, vol. xi, p. 18 (1843) (Darjeeling).

Mr. Stuart Baker has adopted Oates' generic name of *Hilarocichla* for this species, as he considers the longer and more graduated tail a sufficient generic distinction. I cannot see the slightest difference in this case from that of *Paradigalla carunculata* and *P. brevicauda* and *Parotia helenae* and *P. wahnesi* in the Birds of Paradise, where in *Paradigalla carunculata* and *Parotia wahnesi* the tail is long and graduated, while in *Paradigalla brevicauda* and *Parotia helenae* it is quite short and square. If we were to acknowledge genera based entirely on such characters as length and graduation of tail, we should end up by having a genus for almost every species, and entirely lose the object of genera, viz. to help the worker in demonstrating relationship.

Oustalet records this species among Prince H. d'Orleans' birds; Forrest collected 1 ♀ Shweli-Salwin Divide in 1919.

In his 1925 collection he sent 1 ♂, 1 ♀ Shweli-Salwin Divide, 9,000 feet, Oct. 1925. Bill black; feet dark brown; iris purplish black.

365. *Pteruthius aeralatus ricketti* O.-Grant.

Pteruthius ricketti Ogilvie-Grant, *Bull. B.O.C.*, vol. xxxi, p. 110 (1904) (S. China, etc.).

Anderson obtained 1 ♂ Pensee, March 1868, 1 ♀ Sanda, July 1868; Bangs & Phillips record 1 ♂ Loukouchai, Feb. 1911; Andrews & Heller collected 1 ♀ ad. Ho-mu-shu Pass, April 1917; Forrest sent 1 ♂, 1 ♀ Shweli Valley, 2 ♂♂, 2 ♀♀ Shweli-Salwin Divide, 3 ♂♂ Yangtze Valley, 2 ♀♀ Lichiang Range, 2 ♂♂, 2 ♀♀ Tengyueh District.

In his 1925 collection 2 ♂♂ (1 sexed ♀), 3 ♀♀ Shweli-Salwin Divide, 9,000-10,000 feet, Aug. and Oct. 1925. La Touche collected 1 ♀ Milati, Jan. 1921, 1 ♂, 1 ♀ Loukouchai, Feb. 1921.

Colonel Rippon collected 1 example Gyi-dzin-Shán, April 1902.

366. *Pteruthius melanotis melanotis* Hodgs.

Pteruthius melanotis Hodgson, *Journ. As. Soc. Bengal*, vol. xxiv, p. 267 (1855) (Terai, Eastern Himalayas).

Mr. Kinnear has suggested to me that both *melanotis* Hodgs. and *tahanensis* Hart. are subspecies of *aenobarbus*. I should at once have agreed with this view if it had not been for Hume's *intermedius*, which undoubtedly is the representative of *aenobarbus* on the mainland. Now *intermedius* goes north over East Burma, while *tahanensis* is found far south in the Malay Peninsula on Mt. Tahan (Gunong Tahan). Thus we have a bird with red forehead and no black subauricular patch

in between two birds with no red forehead and black subauricular patches. I therefore think it quite possible that somewhere between the Himalayas and the southern part of the Malay Peninsula the two forms will be found together. I therefore for the present treat them as two species with two subspecies each, thus :

1. { No chestnut band on forehead 3.
Chestnut band on forehead 2.
2. { With no grey nuchal band, red on throat only *aenobarbus aenobarbus*.
With partial grey nuchal band, red extending on to breast *aenobarbus intermedius*.
3. { Chestnut throat paler, less extended *melanotis tahananensis*.
Chestnut throat darker, more extended *melanotis melanotis*.

Bangs & Phillips record 1 ♂, 1 ♀ Loukouchai, Feb.; Uchida & Kuroda enumerate 1 ♂, 1 ♀ Feb., also from Loukouchai; Forrest collected 1 ♀ Shweli-Salwin Divide, 1 ♂, 1 ♀ Tengyueh District.

367. *Pteruthius xanthochloris pallidus* (Dav.).

Allotrius xanthochloris var. *pallidus* Armand David, *Nouv. Arch. Mus. Paris*, vol. vii, *Bull.* p. 14 (1871) (frontiers of Kookonor).

Colonel Rippon obtained 2 examples at Gyi-dzin-Shán, March 1902; Forrest collected 1 ♂ Lichiang Range, 1 ♀ T'ong-Shán, 1 ♀, Mekong Valley, 2 ♂♂ 3 ♀♀, Mekong-Salwin Divide; La Touche records 1 ♂, 1 ♀ Milati, Jan.-Feb. 1921, 1 ♀ Lotukow, May 1921.

368. *Mesia argenteauris argenteauris* Hodgs.

Mesia argenteauris Hodgson, *Ind. Rev.* 1838, p. 88 (Nepal).

Anderson collected 1 example Poonsee, April 1868; Bangs & Phillips record 1 ♂ Loukouehai, Feb.; Andrews & Heller got 1 ♂ ad., 20 miles S. of Chen-kang, Salwin Drainage, Feb. 1917.

369. *Cisticola cisticola tintinnabulans* (Swinh.).

Calamanthella tintinnabulans Swinhoe, *Journ. As. Soc. N. China Branch*, vol. ii (1859) (Amoy, etc.).

Bangs & Phillips record 10 examples Mengtsz, March-July; Uchida & Kuroda record 3 ♂♂, 3 ♀♀, Mengtsz, March-April and July; Forrest collected 2 ♂♂ Tali Valley, 1 ♀, 1 ? ad., 2 ? juv. Tengyueh District, 3 ♂♂, 2 ♀♀ ad.; La Touche obtained 1 ♂, 1 ♀ juv. Mengtsz, Sept.-Dec. 1920.

370. *Cisticola exilis tyleri* Jerd.

Cisticola tyleri Jerdon, *Birds Ind.* vol. ii, p. 176 (1863) (Assam).

Anderson obtained 2 examples in the Sanda Valley, July 1868; La Touche records 1 ♂ Hokow, March 1921.

371. *Suya crinigera bangsi* La Touche.

Suya crinigera bangsi La Touche, *Bull. B.O.C.* vol. xlii, p. 53 (1921) (Mengtsz).

Bangs & Phillips record 3 examples from Mengtsz, March-May (under the name of *Suya crinigera yunnanensis*); La Touche enumerates 3 ♂♂ ad., 2 ♂♂ juv. Mengtsz, Sept.-Oct. and Feb. 1920-1921.

372. *Suya crinigera yunnanensis* Har.

Suya crinigera yunnanensis Harington, *Bull. B.O.C.* vol. xxxi, p. 110 (1913) (Yunnan) Momien.

Anderson obtained 1 ♂, 3 ♀♀ Momien, June–July 1868; Forrest collected 2 ♀♀ juv. Mekong Valley, 4 ♂♂ ad. Yangpi Valley, 6 ♂♂ Tengyueh District. In his 1925 collection is 1 ♂ ad. hills around Tengyueh, 6,000 feet, July 1925.

Colonel Rippon collected 1 example Yangpi Valley, April 1906, 3 Chutung-Yangpi Road, March 1902 and April 1906, 1 Tali Valley, April 1906.

373. *Suya parvirostris* La Touche.

Suya crinigera parvirostris La Touche, *Bull. B.O.C.* vol. xlii, p. 53 (1921) (Shuitang).

La Touche described *parvirostris* as a subspecies of *crinigera*, because he only found it at Milati and Shuitang, whereas he only got *bangsi* on the Mengtsh plateau. As *bangsi* has the larger bill of *crinigera* this must stand as *crinigera bangsi*; but it is otherwise with *parvirostris*. Mr. La Touche found *parvirostris*, it is true, the only form occurring at Milati, but Forrest collected it together with *crinigera yunnanensis* in the Mekong Valley and the Tengyueh District, therefore it must stand as a distinct species. Forrest collected 1 ♀ Mekong Valley, 1 ♀ Tali Valley, 1 ♀ Lichiang Range, 3 ? Tengyueh District; La Touche enumerates 2 ♂♂, 1 ♀ ad., 1 ♂ juv. Milati Sept.–Dec. 1920, Feb. 1921, 1 ♂ (type) Shuitang May 1921.

374. *Suya atrogularis khasiana* Godw.-Aust.

Suya khasiana Godwin-Austen, *Ann. Mag. Nat. Hist.* (4), xviii, p. 412 (1876) (Shillong).

Uchida & Kuroda record 5 ♂♂, 2 ♀♀ Mengtsh, Jan.–Aug.

375. *Suya superciliaris superciliaris* Anders.

Suya superciliaris Anderson, *Zool. Res. Two Exp. W. Yunnan*, p. 642, pl. li, f. 1 (1878) (Momien).

Anderson collected 2 ♂♂ Momien, June 1868; Bangs & Phillips record 7 examples Mengtsh, April–Aug.; Forrest sent 2 ♂♂ Tali Valley, 1 ♀ N. of Tali, 7 ♂♂, 9 ♀♀, 4 ? ad. Tengyueh District; La Touche enumerates 1 ♂, 2 ♀♀ Loukouchai, Dec. 1920, April 1921, 1 ♂, 1 ♀ Milati, Sept. & Dec. 1920, 2 examples Mengtsh, Aug.–Sept. 1920, 2 ♂♂ Yunnanfu, May 1921. Colonel Rippon obtained 1 example Talifu Valley, Feb. 1906.

376. *Prinia inornata exter* Thayer & Bangs.

Prinia inornata exter Thayer & Bangs, *Mem. Mus. Comp. Zool.* xl, p. 182, pl. v, ff. 4–5 (1912) (W. Szechuan).

Anderson procured 1 ♂ Momien, May 1868; Ingram records 8 ♂♂, 1 ♀ Mengtsh, April–July 1910; Bangs & Phillips enumerate 12 examples from Mengtsh, Jan.–Sept.; Andrews & Heller collected 2 ♀♀ Yung-chang-Fu, Jan. 1917; Forrest sent 1 ♂, 2 ♀♀ Lichiang Range, 1 ♀ Teng-Chuan Valley, 3 ♂♂, 3 ♀♀, 8 ? ad., 3 ? juv. Tengyueh District; La Touche obtained 11 ♂♂, 2 ♀♀ ad., 10 ? juv. Mengtsh, Aug.–Dec. 1920, Jan.–March 1921, 3 ♂♂, 1 ♀ Milati, Dec. 1920, Feb.–March 1921; Colonel Rippon procured 1 example on the Yangpi–Talifu Road, March 1902, and 1 example is in the British Museum from Mecchu, Jan. 1903, Styau coll.

377. *Alcippe poiocephala magnirostris* Wald.

Alcippe magnirostris Walden in Blyth's *Birds of Burm.* p. 115 (1875) (Karennee).

Andrews & Heller obtained 1 ♂ ad. Namting River, Feb. 1917.

378. *Alcippe poiocephala phayrei* Blyth.

Alcippe phayrei Blyth, *Journ. As. Soc. Bengal*, vol. xiv, p. 601 (1845) (Arrakan).

Oustalet records this bird among those collected by Prince H. d'Orleans.

379. *Alcippe nipalensis yunnanensis* Har.

Alcippe fratercula yunnanensis Harington, *Bull. B.O.C.* vol. xxxiii, p. 63 (1913) (Gyi-dzin-Shán).

Colonel Rippon collected this bird at Talifu, Shweli Divide, May 1906, and 12 examples at Gyi-dzin-Shán, April 1902, and recorded it as *Alcippe fratercula*; M. Pichon obtained 1 specimen and Menegaux and Didier recorded it as *A. nipalensis fratercula*; Forrest sent 2 ♂♂ Shweli-Salwin Divide, 1 ♂ Salwin Valley, 1 ♂, 1 ♀, 1 ? ad. Lichiang Range, 22 ♂♂, 23 ♀♀, 1 ? ad. Tengyueh District.

In the 1925 collection are 1 ♂ hills round Tengyueh, 7,000 feet, July 1925, 4 ♂♂ Shweli-Salwin Divide 7,000-10,000 feet, July-Aug. 1925.

Colonel Rippon also collected an example on the Talifu-Tengyueh Road, May 1900; and in the Styán collection are 2 ♂♂, 1 ♀ Yunnan.

380. *Alcippe nipalensis schaefferi* La Touche.

Alcippe nipalensis schaefferi La Touche, *Bull. B.O.C.* vol. xlii, p. 81 (1922) (South-East Yunnan).

Bangs & Phillips record 11 examples Mengtsh, Jan.-Feb., under the name of *A. n. hueti*; Uchida & Kuroda enumerate 3 ♂♂, 3 ♀♀ Loukouchai, Jan., Feb., and Sept.; La Touche collected 8 ♂♂, 1 ♀ Milati, Jan.-March 1921, 4 ♂♂, 2 ♀♀ Loukouchai, Feb.-April 1921, 2 examples, Lotukow, May 1921.

381. *Megalurus palustris andrewsi* Bangs.

Megalurus palustris andrewsi Bangs, *Bull. Amer. Mus. Nat. Hist.* vol. xlv, p. 592 (1921) (Malipa and Meng-ting).

Captain Wingate collected 1 ♂ Ching-tung, 1 ♂ Mông-sen March 1899; Andrews & Heller obtained 1 ♂ ad. Malipa, 1 ♂ ad. Meng-ting, Feb.-March 1917; Forrest collected 1 ♀ Tengyueh Plain. *In the British Museum is one example King-Tung-Ting, March 1899, Styán coll. Mr. Kinnear after careful comparison of the large series of *Megalurus* in the British Museum declares he is unable to separate birds from Java, Burma, Assam, and India; though the Yunnan birds are larger, therefore if valid Bang's name only applies to Yunnan examples.

382. *Phyllergates coronatus coronatus* (Jerd. & Blyth).

Orthotomus coronatus Jerdon & Blyth, *Proc. Zool. Soc. London*, p. 200 (1861) (Darjeeling).

Ingram records 1 ♂ Mengtsh, June 1910; Bangs & Phillips enumerate 1 ♂ Mengtsh, July 1911; Forrest collected 1 ♂ Tengyueh Valley; La Touche collected 1 ♂ Tengyueh Valley; La Touche collected 1 ♂, 1 ♀ ad., 1 ♀ imm. Mengtsh, Sept. and Dec. 1920, Feb. 1921, 1 ♂ Tachouang, March 1921, 1 ♀ Loukouchai, April 1921.

383. *Orthotomus sutorius inexpectatus* La Touche.

Orthotomus sutorius inexpectatus La Touche, *Bull. B.O.C.* vol. xliii, p. 42 (1922) (Mengtsz).

Colonel Rippon obtained a bird of this species, Salwin Valley, May, 1906, and Ingram records 1 ♂, 1 ? Mengtsz, May and July 1910 (both under the name *O. s. phyllorrhaphaea*); Bangs & Phillips enumerate under the same name 8 examples from Mengtsz, April–Aug.; La Touche collected 10 ♂♂, 4 ♀♀ Mengtsz, July–Dec. 1920, Feb. 1921, 1 ♀ Tachouang, March 1921. Colonel Rippon's bird, however, has striated ear-coverts like *maculicollis*, but is as large as *sutoria* and *phyllorrhaphia*, so I think it does not belong here, but under *longicaudus*.

384. *Orthotomus sutoria maculicollis* Moore.

Orthotomus maculicollis Moore, *Proc. Zool. Soc. London*, 1854, p. 309 (Malay Peninsula).

When a series is procured it is most likely that this race will require a new name, as it has either no white streaks at all or only a few faint ones on the ear-coverts, but at present the available material (3 examples) is too scanty to decide definitely.

La Touche records 2 ♂♂ Hokow, March 1921, under his *s. inexpectatus*, but states they are much smaller.

385. *Orthotomus sutorius longicaudus* (Gm.).

Motacilla longicauda Gmelin, *Syst. Nat.* vol. i, p. 954 (1788) (China).

Stuart Baker has failed to differentiate the birds described by La Touche as *s. inexpectatus* from Mengtsz from Fokhien *longicaudatus*, but I think this will prove wrong, and I am therefore using the name for the W. Yunnan form, and the name of La Touche for the S.E. Yunnan bird.

Oustalet records this bird among the birds collected by Prince H. d'Orleans; Colonel Rippon collected 1 example in the Salwin Valley, May 1906. 1 ♂, 1 ♀ Styau coll. are in the British Museum.

386. *Acrocephalus stentoreus orientalis* (Temm. & Schleg.).

Salicaria turdina orientalis Temminck & Schlegel in Siebold's *Faun. Jap. Aves*, p. 50, pl. xxb (1847) (Japan, etc.).

Bangs & Phillips enumerate 2 ♂♂ Mengtsz, April and Aug.; La Touche records 1 ♂ Nov. 1920, Mengtsz (M. Laurente); Uchida & Kuroda record 2 ♂♂ Mengtsz, April and Aug., under the name of *stentoreus stentoreus*, having rightly concluded that their birds had a wing formula of *stentoreus*, but they failed to connect them with *orientalis*.

387. *Phragmaticola aedon* (Pall.).

Muscicapa aedon Pallas, *Reise versch. Prov. Russ. Reichs.* vol. iii, p. 695 (1776) (Dauria).

Ingram records 1 ♂ Mengtsz, May 1910; Forrest collected 3 ♂♂ Tengyueh District; La Touche obtained 1 ♂ Yunnanfu, May 1921, 1 ♂ Lotukow, May 1921.

388. *Lusciniola thoracica* (Blyth).

Dumeticola thoracica Blyth, *Journ. As. Soc. Bengal*, vol. xiv, p. 584 (1845) (Nepal).

Forrest appears to be the only collector to get this little brown bird, 1 ♂ Yangtze Valley, 1 ♂ juv. Mekong–Salwin Divide, 9 ♂♂, 4 ♀♀ Lichiung Range.

389. *Horeites cantans canturians* (Swinh.).

Arundinax canturians Swinhoe, *Ibis*, 1860, p. 52 (Amoy, Shanghai).

Bangs & Phillips record 1 ♂ Mengtsz, Nov. 1910; La Touche enumerates 2 ♂♂ Mengtsz, Dec. 1920 and March 1921, 1 ♂ Tachouang, March 1921.

390. *Horeites fortipes davidiana* (Verr.).

Arundinax davidiana Verreaux, *Nouv. Arch. Mus. Paris Bull.* vol. vi, p. 37 (1870) (Moupin).

Bangs & Phillips record 2 ♂♂ Mengtsz, May-June; La Touche enumerates 3 ♂♂, 4 ♀♀, 1 ? ad. Mengtsz, Nov.-Dec. 1920, Jan.-Feb. 1921, 3 ♂♂, 1 ♀ Milati, Dec. 1920, Feb.-March 1921.

391. *Horeites flavolivacea intricatus* Hart.

Horeites flavolivacea intricatus Hartert, *Vög. Palaërk. Fauna*, vol. i, p. 533, No. 828 (1909) (Tai-pai-shán).

Forrest collected 1 ♀ Mekong-Salwin Divide, 1 ♀ juv. Tengyueh District.

392. *Horeites acanthizoides acanthizoides* (Verr.).

Abrornis acanthizoides Verreaux, *Nouv. Arch. Mus. Paris Bull.* vol. vi, p. 37 (1871) (W. Szetsehuan).

Forrest collected 1 ♀ Tengyueh District.

393. *Horeites pallidipes laurentei* (La Touche).

Urosphena laurentei La Touche, *Bull. B.O.C.* vol. xlii, p. 30 (1921) (Poutoutsing).

La Touche records 1 ♀ (type) Poutoutsing, April 1921 (Laurent).

394. *Horeites brunneifrons umbraticus* Baker.

Horeites brunneifrons umbraticus Baker, *Bull. B.O.C.* vol. xliv, p. 63 (1924) (Shweli-Salwin Divide).

Forrest collected 1 ♀ ad. Teng Chuan Valley; 1 ♂ juv. Mekong-Salwin Divide; 1 ♂, 1 ♀ Shweli-Salwin Divide, 4 ♂♂, 4 ♀♀ ad., 1 ♂ juv. Lichiang Range.

395. *Horeites major* Moore.

Horeites major Moore, *Proc. Zool. Soc. London*, 1854, p. 105 (Nepal).

Forrest collected 1 ♂ Lichiang Range, 1 ♂ Shweli-Salwin Divide.

396. *Urosphena squameiceps* (Swinh.).

Tribura squameiceps Swinhoe, *Proc. Zool. Soc. London*, 1863, p. 292 (Canton).

La Touche procured 2 ♂♂ Mengtsz, March 1921.

397. *Herbivocula schwarzi* (Radde).

Sylvia (Phyllopneuste) schwarzi Radde, *Reise Süden Ost-Sib.* vol. ii, p. 260, pl. ix (1863) (Tarei-Nor and Bureja Mts.).

Colonel Rippon obtained 1 example of this bird at Chutung, March 1902, and 2 Yangpi Valley, April 1902; La Touche collected 1 ♀ Mengtsz, Oct. 1920.

398. *Phylloscopus armandii* (Milne-Edw.).

Abrornis armandii Milne-Edwards, *Nouv. Arch. Mus. Paris Bull.* vol. i, p. 22, pl. ii, f. 1 (1865) (N. China).

Forrest sent 1 ♂, 1 ♀ Lichiang Range, 1 ♀ Chien Chuan Valley.

399. *Phylloscopus subaffinis* (Grant).

Oreopneuste subaffinis Grant, *Bull. B.O.C.* vol. x, p. 37 (1900) (Pu-an-ting, S.W. Kweichu).

Colonel Rippon collected examples of this species at Gyi-dzin-Shán, March 1902, at Shan Kwan, Tali Valley, April 1902, in the Nechong Valley, and on the Chutung-Yangpi and Chutung-Shayang Roads, March–April 1902; Bangs & Phillips record 1 ♂ Mengtsz, July 1910; M. Pichon obtained 1 example; Forrest sent 5 ♂♂, 6 ♀♀ Lichiang Range, 1 ♀ Tengyueh District, 1 ♀ Shweli Valley; La Touche enumerates 2 ♂♂ Mengtsz, Oct. and Dec. 1920, 1 ♀ Milati, Dec. 1920, 1 ♀ Lankouchai, Dec. 1920.

In the British Museum are also from Colonel Rippon 1 example Yangpi Valley, April 1906, 2 Lichiang Valley, April 1906. 1 Mecchu, Jan. 1903, 1 Shayang-Yang Chang Road, April 1906.

400. *Phylloscopus humei praemium* Math. & Ired.

Phylloscopus humei praemium Mathews & Iredale, *Austral Av. Rec.* vol. iii, pt. ii, p. 45 (1915) (nom. nov.).

Motacilla superciliosa Gmelin, *Syst. Nat.* vol. i, p. 975 (1789) (Russia).

Anderson obtained 1 example Ponsee, April 1868; Bangs & Phillips record 4 specimens Mengtsz, April, July, Sept., Oct.; Andrews & Heller procured 1 ♂ Chang-Lung, Salwin River; Forrest collected 1 ♀ Tengyueh District, 1 ♀ Lichiang Range; M. Pichon sent 1 example. There is 1 example in the British Museum collected by Colonel Rippon, Gyi-dzin-Shán, April 1902.

401. *Phylloscopus fuscatus* Blyth.

Phyllopneste fuscata Blyth, *Journ. As. Soc. Bengal*, vol. xi, p. 113 (1842) (Calcutta).

Anderson obtained 1 ♂ Ponsee, April 1868; Ingram records 1 ♂ Mengtsz, April 1910; Bangs & Phillips enumerate 5 examples Mengtsz, April–May; Andrews & Heller obtained 1 ♀ Yuan-chiang-Chow, Jan. 1917; Forrest collected 2 ♂♂ Yangtze Valley, 1 ♂ Tali Valley, 1 ♂, 1 ♀ Mekong Valley and Salwin Divide, 1 ♂ Lichiang Range, 1 ♂, 1 ♀ Tengyueh District; La Touche procured 5 ♂♂, 2 ♀♀, 2 ? ad. Mengtsz, Oct. and Dec. 1920, Jan.–April, 1921, 1 ? Tachouang, March 1921, 1 ♂, 2 ♀♀ Yunnanfu, May, 1921, 1 ? Kopaotsun, May 1921.

402. *Phylloscopus maculipennis debilis* (Thay. & Bangs).

Reguloides maculipennis debilis Thayer & Bangs, *Mem. Mus. Comp. Zool. Harvard*, vol. xl, No. 4, p. 180 (1912) (Kiating, W. Szechuan).

Colonel Rippon obtained examples at Gyi-dzin-Shán and Chutung, April and May, 1902; Forrest collected 1 ♀ Tengyueh District, 1 ♂ Mekong Valley, 1 ♀ Mekong–Salwin Divide, 1 ♂ Shweli–Salwin Divide; La Touche records 3 ♀♀ Mengtsz, March 1921. Colonel Rippon also collected an example Shayang, March 1902.

403. *Phylloscopus subviridis* (Brooks).

Reguloides subviridis Brooks, *Proc. As. Soc. Bengal*, 1872, p. 148 (N.W. Provinces, especially near Etawah, India).

Uchida & Kuroda record 1 ♂ Mengtsh, Sept., but the record requires confirmation.

404. *Phylloscopus occipitalis coronatus* (Temm. & Schleg.).

Ficedula coronata Temminck & Schlegel in Siebold's *Faun. Jap. Aves*, p. 48, pl. xviii (1847) (Japan).

Bangs & Phillips record 4 examples Mengtsh, Aug.; Forrest collected 1 ? Lichiang Range; La Touche obtained 20 specimens Mengtsh, July–Sept. 1920 and March 1921.

405. *Phylloscopus trochiloides trochiloides* (Sund.).

Acanthiza trochiloides Sundeval, *Physiogr. Sölskap. Tidskr.* vol. i, 1838 (1846) (Calcutta).

Anderson collected 1 example Pensee, April 1868; Colonel Rippon obtained 21 specimens Gyi-dzin-Shán, March and April 1902, 1 example Yangi, March 1902, 1 Yuehangfu, May 1902, 1 Yangpi-Chutung Road, March 1906, 2 Yangtze Big Bend, March 1906, and 1 Lichiang Valley, April 1906.

406. *Phylloscopus trochiloides davisoni* (Oates).

Acanthopneuste davisoni Oates, *Faun. Brit. Ind. Birds*, vol. i, p. 420 (1889) (Muleyit).

Colonel Rippon obtained examples at Yangtze Big Bend, Lichiang Valley, Yungchang, and the Yangpi-Chutung Road, March–April 1906; Oustalet records it among Prince H. d'Orleans' birds; Bangs & Phillips record 1 ♂ Mengtsh, Oct. 1910; Andrews & Heller procured 1 ♂ Wan-tien, May 1917; Forrest collected 2 ♂♂, 3 ♀♀ Tengyueh District, 1 ♂ Lichiang Range, 1 ♀ Shweli–Salwin Divide; La Touche records 4 ♂♂, 1 ♀ Mengtsh, Oct. 1920, March 1921, 1 ♂ Loukouchai, April 1921, 2 examples, Lotukow, May 1921.

407. *Phylloscopus trochiloides disturbans* (La Touche).

Acanthopneuste trochiloides disturbans La Touche, *Bull. B.O.C.* vol. xliii, p. 22 (1922) (Mengtsh).

La Touche records 2 ♂♂, 3 ♀♀ of this bird Mengtsh, Sept.–Oct. 1920.

408. *Phylloscopus trochiloides claudiae* (La Touche).

Phylloscopus trochiloides claudiae La Touche, *Bull. B.O.C.* vol. xliii, p. 22 (1922) (Mengtsh).

Bangs & Phillips record 1 ♂, 1 ♀ Mengtsh, June & Oct.; La Touche collected 31 ♂♂, 20 ♀♀ Mengtsh, Sept.–Oct. 1920, March–April 1921.

409. *Phylloscopus yunnanensis* La Touche.

Phylloscopus proregulus yunnanensis La Touche, *Bull. B.O.C.* vol. xliii, p. 21 (1922) (Mengtsh).

La Touche collected 5 ♂♂ Mengtsh, Oct. 1920, April 1921.

410. *Phylloscopus proregulus proregulus* (Pall.).

Motacilla proregulus Pallas, *Zoogr. Rosso-Asiat.* vol. i, p. 499 (1827) (Ingoda River, Dauria).

Bangs & Phillips record 1 ♂, 1 ♀ Mengtsh, June, Loukouchai, Dec. 1910; La Touche collected 5 examples Mengtsh, Nov.–Dec. 1920, March 1921, 1 example Milati, Feb. 1921, 1 ♀ Tachouang, March 1921.

411. *Phylloscopus proregulus newtoni* Gätke.

Phylloscopus newtoni Gätke, *Ibis*, 1889, p. 579 (Darjeeling).

I enumerate the 3 Mengtsh birds recorded by Ingram under this heading, as they are certainly not typical *proregulus*, and have been doubted even by Ingram when he identified them as *proregulus*.

2 ♂♂, 1 ♀ Mengtsh, July 1910.

412. *Phylloscopus proregulus forresti* Rothschild.

Phylloscopus proregulus forresti Rothschild, *Nor. Zool.*, vol. xxviii, p. 45, No. 161 (1921) (Lichiang Range).

Captain Wingate obtained 1 ♂ Yunnan City, Feb. 1899; Oustalet enumerates it among Prince H. d'Orleans' birds; Andrews & Heller collected 1 ♂ Yungchang-Fu, Jan. 1917; Forrest sent 6 ♂♂, 2 ♀♀ Lichiang Range, 2 ♂♂ ad. Salwin Valley, 1 ♀ Tengyueh District; Colonel Rippon collected 3 Lichiang, March and April 1906, 1 Shayang-Chutung Road, March 1902, 7 Gyi-dzin-Shán, April 1902, 1 hills E. of Yung Chang, Jan. 1906, 1 hills N.E. of Talifu, March 1902, 2 Yung Chan-Salwin Road, April 1902, 1 Chutung-Yangpi Road, March 1906, 1 Shan Kwan, March 1902.

413. *Phylloscopus borealis borealis* (Blas.).

Phyllopeuste borealis Blasius, *Naumannia* 1858, p. 313 (Sea of Ochotsk).

Ingram records 2 ♂♂, 1 ♀ Mengtsh, May 1910; Bangs & Phillips enumerate 1 ♀ March 1911; Forrest collected 1 ♂, 4 ♀♀ Lichiang Range; La Touche obtained 1 ♂, 1 ♀ Mengtsh, Aug.-Sept. 1920, 1 ♂, 1 ♀ Yunnanfu, May 1921.

414. *Phylloscopus nitidus saturatus* (Baker).

Acanthopneuste nitidus saturatus Baker, *Bull. B.O.C.*, vol. xlv, p. 62 (1924) (Dalan, S. Annam).

Colonel Rippon obtained 4 examples at Gyi-dzin-Shán, April 1902.

415. *Phylloscopus nitidus plumbeitarsus* (Swinh.).

Acanthopneuste plumbeitarsus Swinhoe, *Ibis*, 1861, p. 330 (Taku and Peking).

La Touche records 3 examples, Yunnanfu, May 1921; 1 ♂, 1 ♀ Kopaotsun, May 1921.

416. *Phylloscopus trivirgatus ricketti* (Slater).

Cryptolopha ricketti Slater, *Ibis*, 1897, p. 174, pl. iv, f. 2 (Kuatuun).

Bangs & Phillips enumerate and describe 1 ♂ Mengtsh, Sept. 1910, under the name of *Cryptolopha trivirgatus eiuncidas* subsp. nov.; La Touche records 5 ♂♂, 6 ♀♀, 3 ? ad. Mengtsh, Sept.-Oct. 1920 and March 1921.

417. *Phylloscopus tenellipes* Swinh.

Phylloscopus tenellipes Swinhoe, *Ibis*, 1860, p. 53 (Amoy).

La Touche collected 2 ♂♂ Mengtsh, Oct. 1920.

418. *Phylloscopus affinis* (Tick.).

Motacilla affinis Tickell, *Journ. As. Soc. Bengal*, vol. ii, p. 576 (1833) (Borabhum).

Anderson got 1 ♀ Momien, June 1868; Forrest obtained 1 ♀ Mekong-Salwin Divide, 1 ♀ Mekong Valley, 1 ♀ Lichiang Range.

In the British Museum collected by Colonel Rippon are 1 Lichiang Valley, April 1906, 3 Chutung-Yangpi Road, March and April 1902, 1 Mekong Valley, April 1902, 2 Gzi-dzin-Shán, April 1902, and 1 Chutung-Shayan Road, April 1902.

419. *Phylloscopus lugubris* (Blyth).

Phyllopneuste lugubris Blyth, *Ann. Mag. Nat. Hist.* vol. xii, p. 98 (1843) (Calcutta).

Oustalet records this species among Prince H. d'Orleans' birds; Bangs & Phillips enumerate 2 ♂♂ Mengtsh, April-May; Andrews & Heller obtained 1 ♂ Wan-tien, May 1917; Forrest sent 1 ♀ Mekong Valley, 1 ♂, 2 ♀♀ Tengyueh Valley; La Touche collected 1 ♂, 1 ♀ Mengtsh, Sept.-Oct. 1920, 1 ♀ Milati, Sept. 1920, 2 ♂♂ Yunnanfu, May 1921.

420. *Phylloscopus magnirostris* (Blyth).

Phyllopneuste magnirostris Blyth, *Journ. As. Soc. Bengal*, vol. xii, p. 966 (1843) (Calcutta).

Forrest collected 2 ♀♀ Mekong Valley; La Touche got 1 ♂ Mengtsh, April 1921.

421. *Phylloscopus pulcher pulcher* Blyth.

Phylloscopus pulcher Blyth, *Journ. As. Soc. Bengal*, vol. xiv, p. 592 (1845) (Nepal).

Colonel Rippon procured 1 example of this bird at Shan Kwan, Tali Valley, March 1902, and 11 at Gyi-dzin-Shán, April 1904; Forrest sent 1 ♀ Lichiang Range.

422. *Abornis superciliaris salwinensis* Baker.

Abornis superciliaris salwinensis Baker, *Bull. B.O.C.* vol. xlv, p. 62 (1924) (Salwin).

The type was obtained by W. Davison, Jan. 1886, 1 ♂ Salwin; Anderson obtained 1 example Pensee, April 1868.

423. *Abornis albigularis fulvifascies* Swinh.

Abornis pulvifascies Swinhoe, *Proc. Zool. Soc. London*, 1870, p. 132 (Szechuan).

Oustalet records this bird among Prince H. d'Orleans' collections.

424. *Abornis schisticeps ripponi* Sharpe.

Abornis ripponi Sharpe, *Bull. B.O.C.* vol. xiii, p. 11 (1902) (Gyi-dzin-Shán).

Colonel Rippon obtained 4 examples of this bird at Gzi-dzin-Shán, April 1902, 1 Talaupa Chutung, March 1902, and on the Chutung-Yangpi Road, March 1902.

425. *Seicercus burkei tephrocephalus* (And.).

Culiciceta tephrocephala Anderson, *Proc. Zool. Soc. London*, p. 213 (1871) (Bhamo).

Colonel Rippon collected 1 example Yangpi Valley, March 1906; Oustalet records it from the collection of Prince H d'Orleans; Bangs & Phillips enumerate

7 examples Mengtsh, March–Oct. ; La Touche collected 28 specimens Mengtsh, Sept.–Nov. 1920 and March–April 1921. 1 Loukouchai, Feb. 1921, 1 Tachouang March 1921 ; Forrest sent 8 ♂♂, 7 ♀♀ Liehiang Range, 1 ? Yangtze Valley, 3 ♂♂, 2 ♀♀, 1 ? ad., 1 ♂ juv. Tengyueh District, 1 ♂ Mekong Valley, 1 ♂ Mekong–Salwin Divide. In the 1925 collection are 2 ♂♂ Shweli–Salwin Divide, 9,000–10,000 feet, July 1925, 1 ♀ hills N.W. of Tengyueh, 7,000 feet, June 1925. Bill dark brown, lower mandible bone-yellow ; feet pale olive brown ; iris dark brown.

[*Seicercus* Swainson, p. 84, antedates *Cryptolopha* Swainson, p. 259.]

426. ***Seicercus burkii distincta*** (La Touche).

Cryptolopha burkii distincta La Touche, *Bull. B.O.C.*, vol. xliii, p. 41 (1922) (Mengtsh).

La Touche collected 4 ♂♂, 1 ♀ Mengtsh, Sept.–Oct. 1920, March–April 1921, 1 ♂, 1 ♀ Hokow, March 1921.

427. ***Seicercus burkii intermedia*** (La Touche).

Cryptolopha intermedia La Touche, *Bull. B.O.C.*, vol. vii, p. xxxvii (1898) (Fokhien).

La Touche obtained 1 ♂ Mengtsh, Nov. 1920.

428. ***Seicercus burkii valentini*** (Hartert).

Cryptolopha burkii valentini Hartert, *Vög. paläarkt. Fauna*, vol. i, p. 497, No. 773 (1907) (S. Kansu).

The ♀ type of La Touche's *intermedia* turns out to be a ♀ of the above.

429. ***Seicercus castaneiceps castaneiceps*** (Gray).

Abornis castaneiceps Gray, *Cat. Mamms., etc., Nepal*, p. 66, *et App.* p. 152 (1846) (Nepal).

Forrest only got 1 example Shweli–Salwin Divide in his first collection.

430. ***Seicercus castaneiceps laurentei*** (La Touche).

Cryptolopha castaneiceps laurentei La Touche, *Bull. B.O.C.*, vol. xlii, p. 53 (1921) (Mengtsh).

La Touche obtained 4 ♂♂, 1 ♀, 1 ? Mengtsh, Oct. 1920, and March–April 1921.

431. ***Seicercus poliogenys*** (Blyth).

Culicipeta poliogenys Blyth, *Journ. As. Soc. Bengal*, vol. xvi, p. 441 (1847) (Darjeeling).

La Touche records 1 ♂ Tachouang, March 1921, 1 ♀ Loukouchai, April 1921.

432. ***Seicercus ripponi*** (Sharpe).

Abornis ripponi Sharpe, *Bull. B.O.C.*, vol. xii, p. 11 (1902) (Gyi-dzin-Shán).

Colonel Rippon obtained an example of this bird at Talaupa Chutung, March 1902, 1 Chutung–Yangpi Road, March 1902, and 4 Gyi-dzin-Shán, April 1902.

433. ***Franklinia gracilis*** (Frankl.).

Prinia gracilis Franklin, *Proc. Zool. Soc. London*, 1831, p. 119 (Vindhyan Hills).

Captain Wingate sent 1 ♂ ad. Ching-tung, March 1899 ; Ingram records 2 ♂♂, 2 ♀♀ Mengtsh, May–July 1910 ; Bangs & Phillips enumerate 8 specimens Mengtsh, Jan.–Sept. ; La Touche collected 9 ♂♂, 2 ♀♀, 2 ? ad., 1 ♀ juv. Mengtsh,

July–Dec. 1920 and Feb. 1921, 1 ♂, 1 ? Tachouang, March 1921, 1 ♂ Hokow, March 1921; Forrest sent 1 ♂ Lichiang Range, 1 ♂, 1 ♀, 1 ? Tengyueh District.

In the British Museum are also 2 examples Yangpi Talifu Road, March–April 1902, 1 Shayang-Pingpo Road, April 1902, from Colonel Rippon; 1 Yung Mochenj, March 1903, Styau coll., and 1 ♂ Muangla, May 1868 Anderson.

434. *Franklinia rufescens rufescens* (Blyth).

Prinia rufescens Blyth, *Journ. As. Soc. Bengal*, vol. xvi, p. 456 (1847) (Arrakan).

La Touche collected 1 ♂ Hokow, March 1921.

435. *Culicicapa ceylonensis orientalis* Baker.

Culicicapa ceylonensis orientalis Baker, *Bull. B.O.C.* vol. xlv, p. 11 (1923) (Szechuan).

Colonel Rippon obtained 8 examples at Gyi-dzin-Shán, April 1902; Bangs & Phillips record 2 specimens Mengtsh, Oct.; Andrews & Heller collected 2 ♂♂, 1 ♀ ad. Nanting River, Malipa, and Tai-ping-pu, Feb.–April 1917; Pichon obtained this bird; La Touche collected 10 ♂♂, 4 ♀♀, 2 ? Mengtsh, Sept.–Oct. 1920, 1 ♂ Tachouang, March 1921, 1 ♀, 2 ? Loukouchai, March 1921, 1 ♂ Hokow, March 1921, 1 ? Lotukow, May 1921; Forrest obtained 2 ♂♂, 7 ♀♀, 2 ? Lichiang Range, 1 ♂, 1 ♀ Yangtze Valley, 5 ♂♂, 4 ♀♀ Shweli–Salwin Divide, 1 ♂, 2 ♀♀ Salwin Valley, 1 ♂, 4 ♀♀, 1 ? Mekong–Salwin Divide, 4 ♀♀ Mekong Valley, 1 ♂, 4 ♀♀, 1 ? Tengyueh District. In the 1925 collection there are 1 ♂, 2 ♀♀ Shweli–Salwin Divide, 9,000–10,000 feet, Aug. 1925, 2 ♂♂, 2 ♀♀ hills N.W. of Tengyueh, 6,000–8,000 feet, July 1925. Forests. Bill black-brown, lower mandible pale brown, feet olive, iris brown.

In addition there are in the British Museum from Colonel Rippon 5 examples Yangpi-Chutung Road, April 1902 and 1906, and 1 Lichiang Valley, April 1906.

436. *Chelidorynx hypoxantha* (Blyth).

Rhipidura hypoxantha Blyth, *Journ. As. Soc. Bengal*, vol. xii, p. 935 (1843) (Darjeeling).

Colonel Rippon obtained 2 examples Chutung-Yangpi Road, March 1902, and 6 at Gyi-dzin-Shán, March–April 1902; Oustalet records it among Prince H. d'Orleans collections; Bangs and Phillips enumerate 4 examples Mengtsh, Feb.–March and Dec.; La Touche collected 1 ♂, 3 ♀♀ Mengtsh, Oct.–Dec. 1920, 1 ♀ Loukouchai, March 1921; Forrest sent 10 ♂♂, 5 ♀♀ Lichiang Range, 3 ♂♂, 1 ♀ Tengyueh District, 2 ♂♂ Salwin Valley, 3 ♂♂ Shweli–Salwin Divide, 2 ♂♂, 1 ? ad., 1 ♂, 1 ♀ juv. Mekong–Salwin Divide. In the 1925 collection are 2 ♂♂, 2 ♀♀ hills N.W. of Tengyueh, 6,000–7,000 feet, June 1925, 1 ♂ Shweli–Salwin Divide, 9,000 feet, July 1925. Bill black, lower mandible yellow; feet blackish olive; iris brown. Forests.

437. *Anthipes laurentii* La Touche.

Anthipes laurentii La Touche, *Bull. B.O.C.* vol. xlii (1921) (Loukouchai).

La Touche collected 1 ♀ Mengtsh, Oct. 1920, 1 ♂ Loukouchai, April 1921; Forrest sent 1 ♂ Tengyueh District.

438. *Terpsiphone paradisi affinis* ("Hay" Blyth).

Tchitreia affinis "Hay" Blyth, *Journ. As. Soc. Bengal*, vol. xv, p. 292 (1846) (Malay Peninsula and Tenasserim).

Ingram records 1 ? juv. Mengtsh, May 1910; Forrest sent 1 ♂ juv. Tengyueh District; Uchida & Kuroda record 3 ♂♂, 2 ♀♀ Mengtsh, April and Sept.

439. *Terpsiphone incii* (Gould).

Muscipeta incii Gould, *Birds of Asia*, vol. iv, p. 19 (1852) (Shanghai).

In my article on Forrest's fourth collection I stated (Nov. Zool. vol. xxxii, p. 305, 1925) on the evidence of Forrest's and Ingram's 2 birds, that the Mengtsh Paradise Flycatchers mentioned by La Touche and Bangs & Phillips were wrongly named, and that *incii* Gould was a purple-backed species "never white." I much regret having made this statement, as I now find that adult ♂ *incii* are white. Consequently I am quoting these birds under *incii* now, though I am not sure in my own mind, not having seen them, whether some of the immature examples may not also be *paradisi affinis*.

Bangs & Phillips record 11 examples Mengtsh, April and Oct.; La Touche collected 3 ♂♂ ad., 6 ♂♂, 3 ♀♀ juv. Mengtsh, Aug.-Oct. 1920, 1 ♂ ad. Amichow, 1921.

440. *Muscicapa thalassina thalassina* (Swains.).

Muscicapa thalassina Swainson, in Jardine & Selby's *Nat. Libr.* vol. xvii (Flycatchers), Appendix p. 252, No. 2 (1838) (India).

Oberholser (*Proc. Biol. Soc. Washington*, vol. xxxii, p. 240) points out that *Muscicapa melanops* Vig. is antedated by *Muscicapa melanops* Vicill. (*Nouv. Dict. d'Hist. Nat.* vol. xxi, p. 452, 1818), and therefore the next available name is *thalassina* Swains. Oberholser also points out that the correct spelling of the generic name *Stoparola* auct. plur. is *Stoporala*, but as I unite these birds with *Muscicapa* the correction of the genus does not alter my views. Captain Wingate obtained 2 ♂♂ Ching-tung, March 1899; Ingram records 3 ♂♂, 1 ♀ Mengtsh, May-June 1910; Anderson obtained 1 ♂, 1 ♀ Pensee, March 1868, 1 ♀ juv. Sanda, July 1868, 1 ♀, 1 ? juv. Momien, June 1868; Bangs & Phillips enumerate 13 examples Mengtsh and Loukouchai, March-Oct.; Andrews & Heller obtained 1 ♂ ad. Mucheng, Salwin Drainage, Feb. 1917; Pichon sent home 1 specimen; La Touche collected 5 ♂♂, 2 ♀♀ Mengtsh, Sept.-Nov. 1920, and March-April 1921, 6 ♂♂, 2 ♀♀ Milati, Sept. 1920 and Jan. 1921, 1 ♂, 1 ♀ Loukouchai, March-April 1921, 2 ♂♂, 1 ♀ Lotukow, May 1921; Forrest sent 2 ♂♂ Shweli Valley, 1 ♂, 1 ♀ Shweli-Salwin Divide, 2 ♀♀ T'ong Shán, 2 ♂♂ Chutung Valley, 1 ♀ Yangtze Valley, 12 ♂♂, 3 ♀♀ ad., 2 ♂♂, 1 ? juv. Tengyueh District; 5 ♂♂, 4 ♀♀ ad., 1 ♂, 1 ? juv. Lichiang Range. The 1925 collection contains 2 ♂♂ hills around and N. of Tengyueh, 6,000-9,000 feet, July and Nov. 1925.

In the British Museum are further 5 examples Gyi-dzin-Shán, April 1902, 2 Lichiang Valley, April 1906, 1 Yangpi Valley, March 1906, and 1 Chutung-Yangshan Road, April 1906, from Colonel Rippon, and 3 ♂♂ Yunnan, Styán collection.

441. *Muscicapa tricolor tricolor* (Hodgs.).

Digenea tricolor Hodgson, *Proc. Zool. Soc. London*, 1845, p. 26 (Nepal).

The first actual descriptions of this Flycatcher appeared at the place quoted where Hodgson described the ♂ as *leucomelanura* and the ♀ as *tricolor*. Nearly all subsequent writers have employed the name *leucomelanura* for this bird, BECAUSE it applied to the ♂, but they quite ignored the fact that *tricolor* appears first on the page, and therefore must be used under the laws of priority.

Colonel Rippon collected an example in the Lichiang Valley, April 1906; La Touche obtained 5 ♂♂, 2 ♀♀ Mengtsh, Oct. 1920 and March–April 1921. Forrest sent 10 ♂♂, 3 ♀♀ ad., 1 ♂ imm., 3 ♂♂ juv. Lichiang Range, 1 ♂, 1 ♀ ad., 1 ♀ juv. Mekong–Salwin Divide, 1 ? juv. Shweli Valley, 1 ♂ ad. Salwin Valley. La Touche records 5 ♂♂, 2 ♀♀ Mengtsh, Oct. 1920 and March–April 1921, under the name of *leucomelanura cerviniventris*. I also in the beginning identified Yunnan examples as *l. cerviniventris*, but on careful re-examination I believe all Yunnan birds are *l. leucomelanura*, i.e. *tricolor tricolor*, after all.

[On the *Muscicapae* of the *banyumas-rubeculoides-tickellii* group.

This group of Flycatchers is very puzzling, and I fear Mr. Stuart Baker has failed to unravel the confused mass at all satisfactorily. Count Salvadori described a bird under the name of *dialilaema* and Colonel Harington published and described *whitei*, while Thayer & Bangs applied the name of *glaucomans* to a *tickellii* form. All these according to Baker are one and the same. I cannot subscribe to this, as from my examination we have three distinct forms in Yunnan of apparently three species. Mr. Baker has admitted three species of this group, each with several subspecies, viz. *rubeculoides* and *banyumas* with brown ♀♀ and *tickellii* with sexes alike. If Mr. Baker had looked up *glaucomans* of Thayer & Bangs he would have perceived that it was a form of *tickellii*, whereas *dialilaema* is a form of *rubeculoides* in which a narrow median band of rufous runs up into the blue throat from the breast; *whitei* is a form of *banyumas*, and as far as I can see = *caerulifrons* Baker. I therefore recognise the following Yunnan forms: *rubeculoides dialilaema* Salvad., *banyumas whitei* Har., and *tickellii glaucomans* Thay. & Bangs. La Touche has followed Baker's classification and calls all three forms *caerulifrons* Baker, but lays great stress on there being many males with blue sides of the neck and throat; these of course are *rubeculoides dialilaema*. It is possible that when we have larger series, it will be found that both the birds I call *banyumas whitei* and *rubeculoides dialilaema* will have to be separated, as special subspecies as well as the third form *tickellii glaucomans*, on account of their larger size.]

442. *Muscicapa tickellii glaucomans* (Thay. & Bangs).

Cyornis tickelliae glaucomans Thayer & Bangs, *Bull. Mus. Comp. Zool.* vol. li, p. 141 (1909) (Tanshuiya Hupeh).

Only Bangs & Phillips of recent authors appear to have recorded this bird from Yunnan; 6 examples Mengtsh, Oct.–Dec.

443. *Muscicapa banyumas whitei* (Har.).

Cyornis whitei Harington, *Ann. Mag. Nat. Hist.* (8), ii, p. 245 (1808) (Watau, Bhamo Distr.).

Anderson obtained 2 ♂♂ Mareh and April, 1868, Ponsee; Andrews & Heller collected 1 ♂ ad. at Chang-lung, Salwin River, March 1917; Forrest sent 2 ♂♂,

2 ♀♀ Tengyueh District. In the 1925 collection are 3 ♂♂ hills N.W. and N. of Tengyueh, July and Nov. 1925, 8,000–9,000 feet. La Touche records all his examples of *M. b. whitei* and *M. dialilaema* under the head of *caerulifrons* Baker, though pointing out the differences; he obtained of the two species, in all 10 ♂, 13 ♀♀ ad., 3 ♂♂ juv., 10 ♂♂ juv. from Mengtsz, July and Sept.–Oct. and March, Milati, Sept. and March, Loukouehai, April, Lotukow, May, and Hokow, March.

444. *Muscicapa rubeculoides dialilaema* (Salvad.).

Cyornis dialilaema Salvadori, *Ann. Mus. Genov.* (2), vii, p. 387 (1889) (Taho, Karen Hills).

When we can examine a large series of Chinese examples, I expect this form will have to be separated on account of its larger size.

La Touche obtained a number of examples (for details see under previous No. (230)). Forrest sent 3 ♂♂ Yangtze Valley, 4 ♂♂ Liechiang Range; Anderson collected 3 ♀♀ at Ponsee, March–May 1868, and 1 ♂ Tapeng River, 1868.

445. *Muscicapa saphira* (Blyth).

Muscicapula saphira Blyth, *Journ. As. Soc. Bengal*, vol. xii, p. 939 (1843) (Sikkim).

Anderson records 1 ♂ example Ponsee, April 1868; Forrest sent 2 ♂♂ Salwin Valley.

446. *Muscicapa hyperythra hyperythra* Blyth.

Muscicapa hyperythra Blyth, *Journ. As. Soc. Bengal*, vol. xi, p. 885 (1842) (India).

La Touche records 7 ♂♂, 9 ♀♀ Mengtsz, Oct.–Nov. 1920 and March 1921.

447. *Muscicapa hodgsonii* (Verr.).

Siphia hodgsonii Verreaux, *Nouv. Arch. Mus. Paris*, vol. vi, *Bull.* p. 34 (1870) (Moupin).

Forrest sent 1 ♂, 2 ♀♀ ad. Tengyueh District, 4 ♂♂, 3 ♀♀ ad. 1 ♂, 1 ? juv. Liechiang Range.

In the 1925 collection were 1 ♂ ad., 1 ♂ juv. (sexed ♀) hills N.W. of Tengyueh, 6,000–8,000 feet, July 1925.

448. *Muscicapa cyanomelana cyanomelana* Temm.

Muscicapa cyanomelana Temminck, *Pl. Col.* vol. iii, pl. 470 (1835) (Japan).

Bangs & Phillips record 1 ♂ imm. Mengtsz, Oct. 1911; La Touche collected 1 ♂, 2 ♀♀ Mengtsz, Oct. 1920. La Touche identified his examples as *cyanomelana cumatilis* Thayer & Bangs, but states his adult ♂ has not the breast pattern of Hupeh examples. I therefore treat all Yunnan birds as *C. cyanomelana*.

449. *Muscicapa mugimaki* Temm.

Muscicapa mugimaki Temminck, *Pl. Col.* pl. 577, f. 2 (1835) (Japan).

Bangs & Phillips record 1 ♂ Mengtsz, April 1911; Uchida & Kuroda record also 1 ♂ Mengtsz, April; La Touche obtained 1 ♂ Loukouehai, April 1921.

450. *Muscicapa pallipes hainana* (O.-Grant).

Siphia hainana Ogilvie-Grant, *Bull. B.O.C.* vol. x, p. 36 (1899) (Hainan).

La Touche enumerates 1 ♂, 2 ♀♀ Mengtsz, April and Sept. 1921, 1 ♂ Milati, Sept. 1920.

451. *Muscicapa collini* Rothsch.

Muscicapa collini Rothschild, *Bull. B.O.C.* vol. xlv, p. 90 (1925) (nom. nov. *melanoleuca*).

Mr. Albert Collin of Kotka, Finland, pointed out to me that my new name of *blythi* for *melanoleuca* Blyth was also preoccupied by *blythi* of Giebel (see above quotation), so I had much pleasure in naming it after my informant. Captain Wingate obtained 1 ♂ ad. Ching-tung, March 1899; Colonel Rippon procured one on the Chutung-Yungchang Road, April 1906; Oustalet enumerated it in his list of Prince H. d'Orleans birds; Bangs & Phillips record 3 examples Mengtsh, March and Oct.; Andrews & Heller got 4 specimens Tai-ping-pu, April 1917; La Touche collected 6 ♂♂, 2 ♀♀ Mengtsh, Oct.-Nov. 1920 and March 1921, 1 ♂, 2 ♀♀ Milati, March 1921, 3 ♂♂ Loukouchai, March-April 1921, 1 ♂ Lotukow, May 1921; Forrest sent 1 ♂ ad. Salwin Valley, 3 ♂♂ Shweli-Salwin Divide, 5 ♂♂ ad., 1 ♂ jun. 1 ♂, 1 ? juv. Tengyueh District. In the 1925 collection were 3 ♂♂ ad. Shweli-Salwin Divide, 9,000 feet, Aug. 1925.

In addition there are in the British Museum 1 example Gyi-dzin-Shán from Colonel Rippon, March 1902; and 1 ♂, 1 ♀ Yunnan, Styán collection.

452. *Muscicapa muttui* (Lay.).

Butalis muttui, Layard, *Ann. Mag. Nat. Hist.* (2), xiii, p. 127 (1854) (Ceylon).

Bangs & Phillips record 1 ♂ Mengtsh, April 1911; La Touche obtained 4 ♀♀ Mengtsh, Sept.-Oct. 1920 and April 1921.

453. *Muscicapa vivida oatesi* (Salvad.).

Nilava oatesi Salvadori, *Ann. Mus. Civ. Genova* (2), v, p. 514 (1887) (Pegu).

La Touche records 1 ♀ Mengtsh, Oct. 1920, but says it is doubtful owing to being more rufous than *oatesi* ♀♀ in the British Museum; Forrest sent 1 ♂ ad., 1 ♂ juv., 1 ♀ jun. Mekong-Salwin Divide, 1 ♀ ad. Mekong Valley, 2 ♂♂ ad. Mekong-Yangtze Divide.

454. *Muscicapa parva albicilla* Pall.

Muscicapa albicilla Pall., *Zoogr. Rosso-Asiat.* vol. i, p. 462 (1827) (Dauria).

Bangs & Phillips enumerate 4 specimens Mengtsh, April and Oct.; Pichon sent 1 example; La Touche obtained 1 ♂, 2 ♀♀ Mengtsh, Sept. 1920 and April 1921, 1 ♀ Yunnanfu, May 1921; Forrest sent 2 ♂♂, 7 ♀♀ ad., 1 ♀ juv. Tengyueh District, 2 ♂♂ juv. Lichiang Range, 1 ♂, 1 ♀ Yangtze Valley, 1 ♂ T'ong Shán, 2 ♂♂ Salwin Valley.

455. *Muscicapa sibirica rothschildi* (Baker)

Hemichelidon sibirica rothschildi Baker, *Bull. B.O.C.* vol. xliii, p. 156 (1923) (Yunnan).

La Touche collected 2 ad., 4 juv. Mengtsh, Aug.-Oct. 1920; Forrest sent 5 ♂♂, 9 ♀♀ ad., 7 ♂♂ juv. Lichiang Range, 2 ♀♀ ad., 4 ♂♂ juv. Tengyueh District.

456. *Muscicapa cinereiceps* (Sharpe).

Hemchelidon cinereiceps Sharpe, *Ibis*, 1887, p. 441, No. 10 (Kina Balu).

Hodgson's name *ferruginea* dates from 1845, but there is a *Muscicapa ferruginea* Gmelin of 1789, so that if, as I do, we retain it in *Muscicapa cinereiceps* Sharpe must be used.

Forrest sent 1 ♂ ad. Salwin Valley, 2 ♂♂ juv. Mekong Valley, 1 ♂ ad. Mekong-Salwin Divide.

457. *Muscicapa strophciata strophciata* (Hodgs.).

Siphia strophciata Hodgson, *Ind. Review*, vol. i, p. 651 (1837) (Nepal).

Anderson records 1 ♂ Ponsee, March 1868; Bangs & Phillips enumerate 1 ♂, 1 ♀ Mengtsh, Nov. 1910 and April 1911; La Touche collected 12 ♂♂, 10 ♀♀ Mengtsh, Oct.-Dec. 1920 and March-April 1921, 1 ♂ Loukouchai, March 1921; Forrest sent 2 ♀♀ ad., 4 ♂♂ juv. Tengyueh District, 1 ♂ ad. Mekong Valley, 2 ♀♀ ad., 1 ♂ juv. Mekong-Salwin Divide, 9 ♂♂, 2 ♀♀ ad., 2 ♂♂, 3 ♀♀ juv. Lichiang Range.

In the British Museum are 1 example Yangtze Big Bend and 1 Gyi-dzin-Shán, March 1902, Colonel Rippon.

458. *Muscicapa latirostris* Raffl.

Muscicapa latirostris Raffles, *Trans. Linn. Soc. London*, vol. xiii, pt. ii, p. 312 (1821) (Sumatra).

Ingram records 1 ♂ Mengtsh, May 1910; Oustalet catalogues this species from the collection of Prince H. d'Orleans; Bangs & Phillips enumerate 5 specimens Mengtsh, Feb., May, and Sept.; La Touche collected 17 examples of both sexes Mengtsh, Aug.-Oct. 1920 and April 1921, 2 ♂♂ Lotukow, May 1921, 1 ♀ Kopaotsun May 1921. Forrest sent 4 ♀♀ Lichiang Range.

1 ♂ Yunnan, Styan collection, is in the British Museum.

459. *Muscicapa narcissina zanthopygia* Hay.

Muscicapa zanthopygia Hay, *Madras Journal*, vol. xiii, pt. ii, p. 162 (1845) (Malacca).

Ingram records 1 ♀ Mengtsh, May 1910; Uchida & Kuroda enumerate 1 ♂, 1 ♀ Mengtsh, Aug.; La Touche collected 1 ♀ ad., 4 ♂♂, 1 ♀ imm. Mengtsh, Aug.-Sept. 1922.

460. *Hypothymis azurea styani* (Hartl.).

Siphia styani Hartlaub, *Abh. Nat. Ver. Bremen*, vol. xvi, pt. ii, p. 248 (1898).

Bangs & Phillips record under the name of *a. azurea* 1 ♂, 1 ♀ Mengtsh, Sept.-Oct.; Uchida & Kuroda also record 1 ♂, 1 ♀ Sept.-Oct. Mengtsh under the same name; La Touche collected 1 ♂, 2 ♀♀ ad., 1 ♂ imm. Mengtsh, Oct. 1920 and March-April 1921, 1 ♀ Milati, Sept. 1920; Forrest sent 1 ♂ Tengyueh District.

461. *Niltava sundara sundara* Hodgs.

Niltava sundara Hodgson, *Ind. Rev.* vol. i, p. 650 (1837) (Nepal).

Colonel Rippon obtained 1 ♀ example on the Yangpi-Chutung Road, April 1906; Oustalet enumerates the species among the birds collected by Prince H.

d'Orleans ; Forrest sent 1 ♀ Shweli Valley, 1 ♂, 1 ♀ ad., 1 ♂, 1 ♀ juv. Shweli-Salwin Divide, 1 ♂ ad., 1 ♂ juv. Tengyueh District, 10 ♂♂, 3 ♀♀ ad., 3 ♂♂, 4 ♀♀ juv. Lichiang Range.

462. *Niltava sundara denotata* Bangs & Phillips.

Niltava sundara denotata Bangs & Phillips, *Bull. Mus. Comp. Zool. Harvard*, vol. lviii, p. 280 (1914) (Mengtsz).

Bangs & Phillips record 1 ♂, 1 ♀ ad. Mengtsz, Oct.-Dec. 1910 ; Andrews & Heller record 3 ♂♂ ad. Chang-lung, Salwin River and Tai-ping-pu, March and April 1917 ; La Touche collected 4 ♂♂ Mengtsz, Oct.-Nov. 1920 and March 1921, 1 ♂ Loukouchai, April 1921.

I have come to the conclusion that in Yunnan *sundara sundara* is only found in the West and N.W. at considerable elevation, whereas *sundara denotata* is a slightly different subspecies inhabiting the plains and lower elevations, its headquarters being more to the east but going round to the S.W. I think Colonel Rippon's bird listed under *sundara sundara* will probably prove to be *s. denotata*.

463. *Niltava grandis grandis* (Blyth).

Chaitaris grandis Blyth, *Journ. As. Soc. Bengal*, vol. xi, p. 189 (1842) (Darjeeling).

Forrest sent 2 ♂♂ ad., 1 ♂, 1 ? juv. Tengyueh District, 1 ♂ ad. Shweli-Salwin Divide.

464. *Niltava grandis griseiventris* La Touche.

Niltava grandis griseiventris La Touche, *Bull. B.O.C.*, vol. xlii, p. 14 (1921) (Loukouchai).

La Touche records 1 ♂ ad., 1 ♂ juv. Loukouchai, March-April 1921.

This is evidently a slightly differentiated eastern race.

465. *Niltava macgrigoriae* (Burton).

Phoenicura macgrigoriae Burton, *Proc. Zool. Soc. London*, 1835, p. 152 (Himalayas).

La Touche obtained 3 ♂♂, 3 ♀♀ Loukouchai, April 1921.

466. *Niltava davidi lychnis* Thayer & Bangs.

Niltava lychnis Thayer & Bangs, *Bull. Mus. Comp. Zool. Harvard*, vol. lii, p. 141 (1909) (Hupch & Paotung).

La Touche says Yunnan and Hupch examples differ from Fohkien birds in being much brighter blue and the ♂♂ are without the conspicuous black streaks of the Fohkien birds ; it may possibly turn out later that Yunnan birds form a third race.

Bangs & Phillips enumerate 3 examples Mengtsz, April and Oct. ; La Touche collected 5 ♂♂ ad., 4 ♂♂ jun., 1 ♀ Mengtsz, Oct.-Nov. 1920.

467. *Rhipidura albicollis albicollis* (Vieill.).

Platyrrhynchus albicollis Vieillot, *Nouv. Dict. d'Hist. Nat.*, vol. xxvii, p. 13 (1818) (Bengal).

Anderson collected 2 ♂♂, 1 ♀ Ponsec, March-May 1868 ; Ingram records 4 ♂♂ Mengtsz, June-July 1910 ; Bangs & Phillips enumerate 11 examples Mengtsz, Feb.-July, Loukouchai, Jan. ; Andrews & Heller obtained 2 ♂♂, 1 ♀ ad. Nanting River and Mucheng, Salwin Drainage, Feb.-March 1917 ; M.

Pichon sent 1 example; La Touche collected 2 ♂♂, 4 ♀♀ Mengtsh, Oct.-Nov. 1920; Forrest sent 1 ♀ Shweli-Salwin Divide, 1 ♂ juv. Mekong Valley, 2 ♂♂, 3 ♀♀ ad., 1 ♀ juv. Mekong-Salwin Divide, 7 ♂♂, 5 ♀♀ ad. Tengyueh District, 2 ♂♂, 1 ♀ ad. Yangtze Valley, 3 ♂♂, 4 ♀♀ ad., 1 ♂, 1 ♀ juv. Lichiang Range. In the 1925 collection there are 1 ♀ hills N.W. of Tengyueh, 8,000 feet, Nov. 1925; 1 ♀ Tengyueh Valley, 7,000 feet, Dec. 1925. In the British Museum are 1 ♂ example Yungchang, 2 Lichiang, March 1906, 1 Shangyang, March 1906, Colonel Rippon.

468. *Rhipidura aureola burmanica* (Hume).

Leucocerca burmanica Hume, *Stray Feathers*, vol. ix, p. 175 (1881) (Thoungyan).

Anderson records 1 ♂ Pensee, March 1868.

469. *Pericrocotus speciosus speciosus* (Lath.).

Turdus speciosus Latham, *Ind. Orn.*, vol. i, p. 363 (1790) (Darjeeling).

Andrews & Heller obtained 1 ♂ ad. Ta-shui-tang, Salwin Drainage, Feb. 1917; Forrest sent 5 ♂♂, 11 ♀♀ ad., 5 ♂♂ jun. Tengyueh District; La Touche obtained 1 ♂ at Loukouchai, Feb. 1921, 1 ♀ Mengtsh, Nov. 1920. In my fourth article (*Nov. Zool.*, vol. xxxii, p. 305, No. 116, 1925) I have explained that La Touche's *P. sp. bakeri* in my opinion is nothing but a synonym of *sp. speciosus*, and I have therefore listed his types under this form. In Forrest's 1925 collection are the following examples: 2 ♂♂, 4 ♀♀ hills N.W. of Tengyueh, 8,000 feet, Sept. 1925, 2 ♂♂ hills north of Tengyueh, 7,000-8,000 feet, Sept. 1925, 1 ♂, 1 ♀ hills around Tengyueh, 6,000 feet, June 1925. Forests. Bill and feet black, iris brown.

470. *Pericrocotus speciosus fraterculus* Swinh.

Pericrocotus fraterculus Swinhoe, *Ibis*, 1870, p. 244 (Hainan).

Anderson collected 3 ♂♂ Pensee, April 1868.

[On *Pericrocotus brevirostris* and its races.

In the *Catalogue of Birds*, vol. iv, pp. 79-80, Dr. Sharpe unites *affinis* McClell. and *brevirostris* Vig. as synonyms and upholds *neglectus* Hume as a good species; Bangs & Phillips (*Bull. Mus. Comp. Zool. Harvard*, vol. lviii, pp. 282-283) describe a new subspecies as *br. ethelodus* from China (type Hsienshan, Hupeh), stating Yunnan birds are not typical, and then proceed to divide *brevirostris* up into three subspecies, renaming and describing the race from the Western Himalayas and Plains of India as new under the name of *flavilluceus*, quite ignoring that Vigers' type of *brevirostris* came from Mussoorie, and they treat McClelland's *affinis* from Eastern Sikkim, Assam, etc., as typical *brevirostris*, again ignoring that McClelland's type came from Assam. Stuart Baker has, I think correctly, separated the Indian forms of *brevirostris* into three races—*b. brevirostris* Continental India and W. Himalayas, *affinis* E. Himalayas, Assam, and Burma, and *neglectus* Tenasserim. There remain only the Chinese birds; Bangs & Phillips, as mentioned above, declare that the Mengtsh birds do not agree absolutely with typical Hupeh birds (their *ethelodus*); I cannot decide this, as I have no Hupeh examples to compare. La Touche in his S.E. Yunnan articles in the *Ibis* makes *affinis* McClell. and *ethelodus* Bangs & Phillips both occur in Yunnan, and

says they both must breed in S.E. Yunnan, but in his *Handbook of the Birds of Eastern China* he correctly states that he has only found the two forms together during migration. La Touche further places Baker's *brevirostris styani* as a synonym of *b. ethelogs*, without comment, whereas my Szechuan and Pekin birds are decidedly paler than any Yunnan ones (see *infra*). All my Western Yunnan and Mengtsh birds are *affinis*. The Kwangtung ♀, according to Stresemann's description, is exactly like a ♀ I have from Mengtsh, but I have 3 similar ones of *affinis* from Cachar, while the fourth Cachar ♀ is exactly like my second Mengtsh ♀, and all the N.W. and W. Yunnan ♀♀ sent by Forrest. I have at Tring besides the 2 ♂♂, 2 ♀♀ of Owston's from Mengtsh, and 14 ♂♂, 8 ♀♀ adult, and 2 juveniles of Forrest's from N.W. Yunnan, the following Indo-Burmese examples of *P. brevirostris affinis*, 5 ♂♂ Bhamo (Harington), 1 ♂, 1 ♀ Chin Hills (Venning), 1 ♂, 2 ♀♀ Shan States (Harington & Bingham), 1 ♂, 1 ♀ Kauri Kachin tract (Colonel Rippon); 1 ♀ Pegu (?); 1 ♂, 4 ♀ Cachar (Stuart Baker); 2 ♂♂ Margherita, Assam (Stuart Baker); 2 ♂♂, 1 ♀ Sikkim (H. Y. Elwes). After careful comparison of this material I have come to the following conclusions: (1) that most likely *ethelogs* Bangs & Phillips from Mengtsh, which they acknowledge to be different from their Hupeh type, are *affinis* McClell.; (2) that La Touche's Mengtsh birds named by him *ethelogs* are Baker's *styani* from Szechuan; and (3) I cannot yet treat *styani* as a synonym of *ethelogs*, as it does not agree with the original description; to decide finally I must compare Hupeh series.]

471. *Pericrocotus brevirostris affinis* McClell.

Pericrocotus affinis McClelland, *Proc. Zool. Soc. London*, 1839, p. 156 (Assam).

Stresemann has described a single ♀!!! obtained by R. Mell at Kwangtung as *brevirostris anthoides*, and I have a ♀ from Mengtsh exactly fitting the description; but alas, my second ♀ from Mengtsh differs entirely and agrees with typical ♀ birds of *b. affinis*; also of the 4 ♀♀ of Mr. Stuart Baker's from Cachar 3 are like *anthoides* and 1 like *affinis*, finally the ♀ from the Chin Hills (Colonel Rippon) has the yellow frons described by Stresemann, but is bright golden orange below. This I think proves that the ♀♀ of *b. affinis* are somewhat variable in colour, and that Dr. Stresemann ought never to have described a new subspecies from a single ♀.

Anderson obtained 1 ♂ Pensee, April 1868; Colonel Rippon got 1 example at Talifu Valley, Feb. 1906, 1 Lichiang, March 1906, 2 at Yangtze Big Bend, March 1906, 1 Chutung-Yungchung Road, April 1906; 3 examples were got by Captain Wingate E. Yunnan, Feb. 1899; Ingram records 2 ♂♂, 1 ♀ (rectius 2 ♂♂, 2 ♀♀) Mengtsh, June-July 1910; Andrews & Heller collected 1 ♂ ad. Tai-ping-pu, April 1917. M. Pichon sent 3 ♂♂, 2 ♀♀ from Lung-ling; M. & Mme. Comby obtained 1 ♀; La Touche collected 3 ♂♂ Mengtsh, Oct. 1920, 3 ♂♂, 1 ? Loukouehai April 1921, 1 ♂ Lotukow, May 1921; Forrest sent 2 ♂♂, 3 ♀♀ ad., 1 ? juv. Tengyueh District, 12 ♂♂, 6 ♀♀ ad., 2 ♂♂, 1 ♀ juv., 2 nestlings Lichiang Range. In my articles on the first four collections of Forrest I used the name *brevirostris ethelogs* for these birds, but they are undoubtedly *b. affinis*. The 1925 collection contains 1 ♂ hills round Tengyueh, 6,000 feet, June 1925; 5 ♂♂, 2 ♀♀ Tengyueh Valley, 7,000 feet, Dec. 1925. Bill and feet black; iris brown. In addition there are in the British Museum 2 Gyi-dzin-Shán, March-April 1902, 2 Shayang-

Chutung Road, March 1902, 1 Yangpi-Chutung Road, April 1902, all from Colonel Rippon; 1 ♂ Mu-chu, Jan. 1903, Styán coll., 2 ♂♂ Yunnan City, Feb. 1899.

472. *Pericrocotus brevirostris styani* Baker.

Pericrocotus brevirostris styani Stuart Baker, *Bull. B.O.C.* vol. xl, p. 117, No. 4 (1920) (Szechuan).

I have a ♂ ad. from Mua-Kua-Chi, Lung-an Szechuan, Oct. 21, 1893 (Berezowsky coll.), 2 ♂ ad. Taipaishan Tsin-ling Mts., Oct.–Dec. 1905 (Alan Owston coll.), 2 ♀♀ Peking (H. H. Slater coll.), which agree with Mr. Baker's descriptions, i.e. the ♂♂ are paler below than *affinis*, and the ♀♀ below pale lemon-yellow. If these birds, and those listed by Bangs & Phillips are different from the Hupeh examples, then *b. styani* must be employed as a name for them; as I have not been able to compare typical Hupeh material with these birds, I shall keep them separate till I am able to do so.

Bangs & Phillips record 17 examples of both sexes from Mengtsh, Feb.–Sept., Shi-ping, Feb., and Loukouchai, Dec. (There may very likely be some *b. affinis* among these.) La Touche collected 1 ♂, 2 ♀♀ ad., 2 ♀♀ imm. Mengtsh, Ang. and Nov. 1920 and Jan.–March 1921, 1 ♂ Milati, Feb. 1921, 1 ♂ Hokow, April 1921.

473. *Pericrocotus cinereus* Lafresn.

Pericrocotus cinereus Lafresnaye, *Rev. Zool.* vol. viii, p. 94 (1845) (Luzon).

La Touche collected 1 ♂ ad., 1 imm. Mengtsh, Oct. 1920.

474. *Pericrocotus cantonensis* Swinh.

Pericrocotus cantonensis Swinhoe, *Ibis*, 1861, p. 42 (Canton).

Bangs & Phillips record 6 examples Mengtsh, April & Oct.; Uchida & Kuroda enumerate 4 ♂♂, 2 ♀♀ Mengtsh, April and Oct.; La Touche collected 3 ♀♀ juv. Mengtsh, Oct. 1920, 2 ♂♂ ad. Hokow, April 1921.

475. *Pericrocotus roseus* (Vieill.).

Muscicapa rosea Vieillot, *Nouv. Dict. d'Hist. Nat.* vol. xxi, p. 486 (1818) (Bengal).

Anderson procured 2 ♀♀ Muangla, May 1868; Ingram records 6 ♂♂, 2 ♀♀ Mengtsh, April–July 1910; Bangs & Phillips enumerate 2 ♂♂ Mengtsh, March and Oct.; La Touche collected 7 ♂♂, 9 ♀♀ ad., 1 ♂ juv. Mengtsh, June–Oct. 1920 and March–April 1921, 4 ♂♂ Milati, Sept. 1920 and March 1921, 1 ♂, 1 ♀ Loukouchai, April 1921, 2 ♂♂, 1 ♀ Lotukow, May 1921, 1 ♂, 1 ♀ Yunnanfu, May 1921, 8 ♂♂, 3 ♀♀ Hokow, March–April 1921; Forrest sent 4 ♂♂, 1 ♀ ad., 1 ♂ juv. Tengyueh District, 3 ♂♂, 2 ♀♀ ad. Lichiang Range, 2 ♀♀ Yangtze Valley, 1 ♂ ad., 1 ♂ juv. Salwin Valley. In the 1925 collection are 3 ♂♂ ad. hills round Tengyueh, 6,000 feet, June 1925. In the British Museum are 1 ♀ Mu-chu, Styán; 2 Lichiang, March 1906, Colonel Rippon.

476. *Pericrocotus solaris mandarinus* Stresem.

Pericrocotus solaris mandarinus Stresemann, *Journ. f. Orn.* vol. lxxi, p. 363 (1923) (Lung-tau-Shan)-

In my article on Forrest's fourth collection (Nov. Zool. vol. xxxii, p. 307, 1925) I unfortunately used the name *solaris solaris* through too hasty comparison;

the 2 examples he sent (♀♀) have no trace of yellow on the pure white throat. Dr. Stresemann has separated the Continental Chinese birds from the Formosan *griseigularis* Swinh., and although the differences are very slight I feel obliged to adopt the name as valid. Forrest's birds undoubtedly belong to the Chinese race of *solaris*, and NOT to the Indian race, which has the throat strongly suffused with yellow in both sexes, of which there is no trace either in the Chinese or Formosan specimens.

Forrest sent 1 ♀ Shweli Valley, and I found a second ♀ Tengyueh District which had been mislaid.

476A. *Pericrocotus* sp. ?

This is a young bird resembling a ♀ juv. of *solaris*, but has a gigantic bill. In this it agrees with *yvettae* Bangs, but has a much shorter wing.

Forrest sent 1 ♀ juv. Tengyueh District.

477. *Pericrocotus yvettae* Bangs.

Pericrocotus yvettae Bangs, *Bull. Amer. Mus. Nat. Hist.* vol. xlv, p. 583 (1921) (Malipa and Taiping-pu).

Andrews & Heller obtained 1 ♂, 1 ♀ ad. Malipa, March, and Taiping-pu, April 1917.

478. *Pericrocotus montpellier* La Touche.

Pericrocotus montpellier La Touche, *Bull. B.O.C.* vol. xlii, p. 125 (1922) (Yangtze Big Bend).

Colonel Rippon obtained the type ♂ at Yangtze Big Bend, March 1906, and 1 ♀ Chukung-Yangpi Road, March 1906. In the British Museum are also 1 ♀ Mu-chu, Yunnan, Jan. 1903, Styan coll. ; also from Colonel Rippon further 2 Gyi-dzin-Shán, April 1902, 1 Talifu Valley, Feb. 1906, 1 Lichiang Valley, April 1906, and 1 Yunnan City, Feb. 1899, Captain Wingate.

479. *Lalage melaschistos melaschistos* (Hodgs.).

Volocivora melaschistos Hodgson, *Ind. Rev.* vol. i, p. 328 (1837) (Nepal).

Mr. Stnart Baker has placed *melaschistos* and *avensis* Blyth as subspecies of *melaschistos* ; I prefer, however, to keep them separate as I have received both forms from the Tengyueh District from Forrest, and the dates and examples are so few that I find it impossible to definitely say if either or both forms were on migration.

Bangs & Phillips record 3 specimens from Mengtsh (under the name of *lugubris* Sundeval), March and Oct. ; Uchida & Kuroda enumerate 2 ♀♀ Mengtsh, Oct. ; La Touche collected 1 ♂ ad., 1 ♀ juv. Mengtsh, Sept. 1920 and March 1921, 2 ♂♂, 1 ♀ Hokow, March-April 1921, 1 ♂ Lotukow, May 1921 ; Forrest sent 1 ♂, 1 ♀ Tengyueh District. In the 1925 collection there are 1 ♂, 2 ♀♀ ad., 1 ♀ juv. Shweli-Salwin Divide, 7,000-9,000 feet, July-Oct. 1925, 1 ♀ ad. Tengyueh Valley, 7,000 feet, Oct. 1925. Forests. Bill and feet black, iris crimson.

480. *Lalage melanoptera* (Rüpp.).

Ceblepyris melanoptera Rüppell, *Mus. Senckenb.*, vol. iii, p. 25, pl. ii, f. 1 (New Holland !).

Campephuga avensis Blyth, *Cat. Birds Mus. As. Soc. Bengal*, p. 327 (Arakan) (1847).

Blyth first called this bird *melanoptera* and later changed the name to *avensis* because he said *melanoptera* had been previously used by Rüppell. Blyth was misled by Rüppell's bird having been said to come from New Holland; this is rather queer because Rüppell says "WARSCHENLICH," i.e. "PROBABLY" or "PRESUMABLY" from New Holland, and as the bird according to Hartert (*Cat. Vogels. Senck. Mus.*) is evidently the Burmese *Lalage*, Rüppell's name has priority over *avensis*.

Ingram records 2 ♂♂ Mengtsh, April and July 1910; Bangs & Phillips enumerate 8 examples, Mengtsh, March–Oct.; La Touche collected 5 ♂♂ Mengtsh, Sept.–Oct. 1920 and April 1921; Forrest sent 1 ♂ Shweli Valley, 1 ♂ Tengyueh District, 1 ♂ Salwin Valley, 1 ♀ Liechiang Range.

481. *Graucalus macei siamensis* Baker.

Graucalus macei siamensis Stuart Baker, *Bull. B.O.C.*, vol. xxxvii, p. 69 (1918) (Minam-Kraben, Siam).

Uchida & Kuroda record 1 ♂ Chih Ping, March; Oustalet enumerates it among Prince H. d'Orleans' birds; Forrest sent 1 ♂ juv., 1 ♀ ad. Tengyueh District.

In the 1925 collection are 1 ♂, 1 ♀ hills round Tengyueh, 7,000 feet, Dec. 1925. Forests. Bill and feet black, iris brown.

[On the Indo-Chinese forms of *Microscelis* = *Hypsipetes* auct. plur.

Mr. Stuart Baker allows only one species *psaroides* of *Microscelis* to occur in British India, Burmah and Ceylon, divided into the four subspecies *psar. psaroides*, *psar. nigrescens*, *psar. geneesa*, and *psar. concolor*, and apparently no white-headed examples occur there. In my articles on Forrest's birds I recorded them as two species *leucocephalus* Gm. and *concolor* Blyth in the first article, and in the second article I recorded as a third form *perniger sinensis* La Touche. Dr. Stresemann in his article (*Ornith. Monatsb.* 1923, pp. 83–85) declares as a result of examination of large Chinese material that *leucocephalus*, *concolor*, and *sinensis* are all colour variants of one species, and admits as races *perniger* of Hainan and *nigerrimus* of Formosa. This would give us a species consisting of seven subspecies, one of which is polychromatic, while the other six are not. Mr. La Touche is very much opposed to Dr. Stresemann's ideas, and maintains stoutly that *sinensis* and *leucocephalus* are distinct species; the glossy *sinensis* being a tropical bird while the *leucocephalus*–*concolor* birds are winter migrants from the north. I cannot confirm this, as Forrest got them both high up at such varying dates that they were most unlikely to be migrants. Therefore I conceive the *leucocephalus* "Formenkreis" as follows:

Microscelis leucocephalus leucocephalus (Gm.) with phase *sinensis* La Touche. Chinese mainland.

M. leucocephalus perniger. Hainan.

M. leucocephalus nigerrimus. Formosa.

M. leucocephalus concolor Blyth. East Burmah Shan States, Yunnan, etc.

Microscelis leucocephalus ganeesa Sykes. South India and Ceylon.

M. leucocephalus nigrescens Baker. Assam, Manipur, Arakan, Chin Hills.

M. leucocephalus psaroides Vig. West Himalayas-Bhutan.

Of these *leucocephalus leucocephalus* alone is polychromatic. It is quite possible that younger birds both of the *leucocephalus* and *sinensis* phases of *l. leucocephalus* are identical SOMETIMES with non-Chinese *concolor* and change, as they grow older, but this is not always the case, as I have among Forrest's birds quite old birds indistinguishable from Burmese *concolor* and also quite young birds with full white heads and 1 adult of the *sinensis* phase with breast similar to or rather approaching *concolor*. Young birds of both sexes have black bills which gradually take on the red of the adult birds.]

482. **Microscelis leucocephalus leucocephalus** (Gm.).

Turdus leucocephalus Gmelin, *Syst. Nat.* vol. i, p. 826 (829 rect.), No. 104 (1789) (China).

1. Phase *leucocephalus*.

In Szechuan and some other parts of China only whiteheaded birds have been obtained; but in Yunnan all three phases have been collected.

Captain Wingate obtained 1 ♂ Mōng-sen, March 1899; Bangs & Phillips record 16 specimens Mengtsz, March-April and Nov.; Andrews & Heller collected 1 ♂ ad. Namting River, Jan. 1917; La Touche enumerates 5 ♂♂, 1 ♀ Mengtsz, Nov.-Dec. 1920 and Feb.-March 1921; Forrest sent 5 ♂♂ Lichiang Range, 1 ♂ fere ad. 1 ♀ juv. T'ong Shán, 1 ♂ ad., 1 ♂ fere ad., 1 ♀ juv. Shweli-Salwin Divide, 1 ♂, 2 ♀♀ ad. Mekong Valley, 2 ♂♂, 2 ♀♀ ad., 1 ♀ juv. Yangtze Valley. In the 1925 collection are 1 ♂ ad. with white head, 1 ♂ juv. with partial white crown Shweli-Salwin Divide, 9,000 feet, Oct. 1925.

2. Phase *concolor*.

These birds have grey breasts and under parts and resemble Burmese *concolor*. Anderson got 1 ♂ Ponsee, March 1868; Captain Wingate procured 1 ♀ Wei-Yuan, April 1899; Andrews & Heller obtained 1 ♀ Yoakuan, Feb. 1917; La Touche does not allude to this in his "Birds of S.E. Yunnan" (*Ibis*, 1923), but in his criticism of Stresemann's paper he alludes to them; Forrest sent 1 ♀ ad., 1 ? juv. Tengyueh District, 1 ♀ Mekong-Salwin Divide, 1 ♀ ad. Salwin Valley, 1 ♂, 1 ♀ ad., 1 ♀ juv. Shweli-Salwin Divide, 1 ♀ juv. Lichiang Range, 1 ♀ ad. Chien Chuan Valley.

In the 1925 collection are 4 ♂♂, 5 ♀♀ hills N.W. of Tengyueh, 8,000-9,000 feet, May-Aug. 1925, 1 ♂, 3 ♀♀ ad., 1 ♀ juv. Shweli-Salwin Divide, 8,000-9,000 feet, Sept.-Oct. 1925.

3. Phase intermediate between *concolor* and *sinensis*.

In Forrest's 1925 collection is 1 ♂ ad. Shweli-Salwin Divide, 8,000 feet, Sept. 1925. (This bird has upper breast black running on to lower breast in streaks.)

4. Phase *sinensis*.

Forrest and La Touche appear to be the only collectors to obtain this phase in Yunnan.

La Touche obtained 1 ♂ (type) Hokow, March 1921, 1 ♂ Loukouchai, April 1921; Forrest sent 1 ♂, 1 ♀ Yangtze Valley, 2 ♂♂ Mekong-Yangtze Divide, 3 ♂♂, 2 ♀♀ Mekong-Salwin Divide, 2 ♀♀ ad., 1 ♀ juv. Lichiang Range.

In addition there are in the British Museum of phase *concolor* 2 examples

Yangpi-Chutung Road, March–April 1902, 1 Gyi-dzin-Shán, April 1902, 2 Lichiang Valley, April 1902, Colonel Rippon; 1 ♂ Chu-mu and 2 ♂♂, 1 ♀ Yunnan, March 1903, Styan coll.

483. *Spizixus semitorques* Swinh.

Spizixus semitorques Swinhoe, *Ibis*, 1861, p. 266 (Pehling plateau near Amoy).

Bangs & Phillips record 5 examples Loukouchai, Jan.–Feb. and Dec.; Uchida & Kuroda record 1 ♂ Loukouchai Feb.

484. *Spizixus canifrons canifrons* Blyth.

Spizixus canifrons Blyth, *Journ. As. Soc. Bengal*, vol. xiv, p. 571 (1845) (Khasia Hills).

Ingram records 2 ♂♂, 1 ♀ Mengtsh, July 1910; Bangs & Phillips record, under the name of *Sp. canifrons ingrami*, 6 examples Mengtsh, March, Aug., and Sept., Loukouchai, Dec.; Andrews & Heller procured 5 ♂♂, ♀♀ ad. Tai-ping-pu and Chen-kang, Feb. and April 1917; M. Pichon sent 1 example; M. & M^{me}. Comby obtained 1 young specimen; Uchida & Kuroda mention 1 ♀ Mengtsh, Dec.; La Touche collected 5 ♂♂, 3 ♀♀ Milati, Jan.–Feb. 1921, 2 examples Loukouchai, April 1921, 1 Lotukow, May 1921, 1 ♀ juv. Mengtsh, Aug. 1920; Forrest sent 2 ♂♂, 2 ♀♀ Tengyueh District, 1 ♂ juv. Salwin Valley, 1 ♀ Shweli-Salwin Divide, 2 ♀♀ ad., 1 ♂ juv. Yangtze Valley, 18 ♂♂, 10 ♀♀ ad. Lichiang Range. In the 1925 collection are 3 ♂♂, 3 ♀♀ Tengyueh Valley, 6,000 feet, Dec. 1925, 1 ♂, 4 ♀♀ hills N.W. of Tengyueh, 7,000–8,000 feet, April and Oct. 1925, 1 ♀ Shweli-Salwin Divide, 9,000 feet, Aug. 1925. In the British Museum are 3 ♂♂, 2 ♀♀ Yuen Chung, Styan coll.; 6 examples Lichiang, March 1906, 1 Chutung–Yangpi Road, April 1906, 3 Gyi-dzin-Shán, April 1902, Colonel Rippon.

485. *Alcurus striatus* (Blyth).

Trichophorus striatus Blyth, *Journ. As. Soc. Bengal*, vol. xi, p. 184 (1842) (Nepal).

Bangs & Phillips record under the name of *A. s. paulus* 1 ♂, 1 ♀ Loukouchai, Feb. 1911; Uchida & Kuroda enumerate 1 ♂, 1 ♀ Loukouchai, Feb. 1911; Andrews & Heller obtained 1 ♀ ad. at Tai-ping-pu, April 1917; Forrest sent 5 ♂♂, 5 ♀♀ Tengyueh District, 2 ♂♂ Shweli-Salwin Divide.

In the 1925 collection are 2 ♂♂, 1 ♀ Shweli-Salwin Divide, 8,000–9,000 feet, June 1925, 1 ♂ hills N.W. of Tengyueh, 8,000 feet, Oct. 1925.

486. *Iole maclellandi similis* Rothsch.

Iole maclellandi similis Rothschild, *Nor. Zool.* vol. xxviii, p. 51, No. 191 (1921) (Shweli-Salwin Divide).

Ingram records, under the name of *Iole holti*, 1 ♂ Mengtsh, June 1910; Bangs & Phillips enumerate, under the same name, 16 examples Mengtsh, March–April and Nov.; Uchida & Kuroda list 4 ♂♂ Loukouchai, Feb. and Dec.; Andrews and Heller obtained 1 ♂ Tashintang, Salwin Drainage, Feb. 1917; La Touche collected 3 ♂♂, 1 ♀ Loukouchai, April 1921, 1 ♀ Loshuitang, Feb. 1921; Forrest sent 9 ♂♂, 8 ♀♀, 1 ? Tengyueh District, 1 ♂, 1 ? Shweli Valley, 2 ♂♂, 1 ♀ Salwin Valley, 3 ♂♂, 2 ♀♀ ad., 1 ♂ jun. Shweli Salwin Divide. In the 1925 collection there are 5 ♂♂, 5 ♀♀ Shweli-Salwin Divide, 7,000–9,000 feet,

July–Sept. 1925, 3 ♂♂, 4 ♀♀ hills N.W. of Tengyueh, 9,000 feet, June–Aug. 1925, 1 ♀ Tengyueh Valley, 7,000 feet, Dec. 1925.

In the British Museum are in addition from Colonel Rippon 1 example Shayang-Chutung Road, March 1902, 2 Gyi-dzin-Shán, April 1902, 3 Yangpi-Chutung Road, March 1902 and April 1906; and 1 ♂ Yung-we-cheng, Styan coll.

487. *Pycnonotus aurigaster xanthorrous* And.

Pycnonotus xanthorrous Anderson, *Proc. As. Soc. Bengal*, p. 265 (Kakhyen Hills).

Anderson obtained 3 ♂♂ Sanda Valley and Momien, May–June 1868; Ingram records 3 ♂♂, 3 ♀♀ Mengtsz, May and July 1910; Bangs & Phillips enumerate 5 examples Mengtsz, Jan. 1911, Loukouchai, Feb.; Andrews & Heller obtained 4 ♂♂, ♀♀ ad. Wan-tien, Lichiangfu, Chang-lung, and Yui-yao, Nov. 1916 and March–May 1917; M. Pichon sent 2 examples; La Touche collected 8 ♂♂, ♀♀ ad. Loukouchai, Milati, Mengtsz, Sept.–Dec. 1920, 1 ♀ Lotukow, May 1921, 1 ? juv. Milati 1920; Forrest sent 1 ♂, 6 ♀♀ Lichiang Range, 1 ♂, 1 ♀ Tali Valley, 1 ♂, 4 ♀♀, 2 ? Tengyueh District, 1 ♀ Shweli Valley.

In the 1925 collection are 3 ♂♂, 7 ♀♀ Tengyueh Valley, 6,000 feet, Sept.–Dec. 1925, 1 ♂, 1 ♀ round Tengyueh, 6,000 feet, June 1925.

In the British Museum are 4 ♂♂, 2 ♀♀ Yunnan, Feb. 1903, Styan coll.; 1 ♀, 2 ? Feb. 1906, 1 Shunpi Valley, Feb. 1906, 4 Lichiang, March 1906, 3 Gzidzin-Shán, April 1902, 1 hills E. of Yungchang, Jan. 1906, 2 Chutung-Yangpi Road, March 1902, 1 Chutung Valley, March 1902, Colonel Rippon.

488. *Xanthixus flavescens flavescens* (Blyth).

Pycnonotus flavescens Blyth, *Journ. As. Soc. Bengal*, vol. xiv, p. 568 (1845) (Arrakan).

Anderson collected 1 example Ponsee, March 1868; Bangs & Phillips record 1 ♂ Loukouchai, Feb. 1911.

489. *Aegithina tiphia tiphia* (Linn.).

Notacilla tiphia Linnaeus, *Syst. Nat.* edit. x, vol. i, p. 186 (1758) (Bengal).

1 ♂ Chang-lung, March 1917 (in green plumage).

490. *Molpastes haemorrhous chrysorrhoides* (Lafresn.).

Haematornis chrysorrhoides Lafresnaye, *Rev. Zool.* p. 367 (1845) (China).

Mr. Baker in commenting on Oates under *M. h. nigripileus* remarks that only one form of Red-vented Bulbul occurs in a given area; but this can only apply to Indo-Burmese countries as we find three of the forms, placed by Mr. Baker as subspecies of *haemorrhous* in Yunnan. Probably, however, only the present form is resident, and the other two migrants.

Ingram records 3 ♂♂ Mengtsz, April–May 1910; Captain Wingate 1 ♂ Ching-tung-ting, March 1899, 2 ♂♂ ad. Mong Mon and Mon Koo, March 1899; Bangs & Phillips enumerate 2 examples Mengtsz, March–April; La Touche collected 6 ♂♂, 2 ♀♀ ad., 4 ? juv. Mengtsz, July–Nov. 1920; Forrest sent 2 ♂♂ 1 ♀ Lichiang Range.

In the British Museum from Colonel Rippon are 1 example Shayang-Pingpo Road, April 1902, 2 Gyi-dzin-Shán, April 1902; and 3 ♂♂ 2 ♀♀ Yunnan, 1 ♂, Yung-Mo-chung, Feb. 1903, 1 ♀ Mu-chu, Jan. 1903, Styan coll.

491. *Molpastes haemorrhous nigripileus* (Blyth).

Pycnonotus nigripileus Blyth, *Journ. As. Soc. Bengal*, vol. xvi, p. 472 (1847) (Tenasserim).

Forrest sent 1 ♂ Tali Valley, 1 ♀ Lichiang Range.

These were probably stragglers, not even migrants.

492. *Molpastes haemorrhous burmanicus* (Sharpe).

Pycnonotus burmanicus Sharpe, *Cat. Birds Brit. Mus.*, vol. vi, p. 125 (1881) (Burmah).

Anderson collected 1 ♂, 1 ♀ Pongsee, March 1868, 1 ♀ Muangla, July 1868; Captain Wingate obtained 1 ad. S.W. Yunnan, April 1899; Colonel Rippon procured 1 Talifu, May 1906; Andrews & Heller collected 2 ♂♂, 1 ? ad. Yungchang Fu, Jan. 1917; Monsieur Pichon sent 4 examples; Forrest collected 1 ♂ Lichiang Range, 13 ♂♂, 8 ♀♀, 2 ? Tengyueh District.

The 1925 collection contains 5 ♂♂, 2 ♀♀ ad. Tengyueh Valley, 6,000 feet, Dec. 1925, 2 ♀♀ ad. hills N.W. of Tengyueh, 7,000 feet, June 1925, 2 ♂♂ ad., 1 ♀ juv. hills N. of Tengyueh, 7,000 feet, Sept.–Oct. 1925.

493. *Chloropsis iterocephala chlorocephala* (Wald.).

Phyllornis chlorocephala Walden, *Ann. Mag. Nat. Hist.* (4), vii, p. 241 (1871) (Toungchoo).

Andrews & Heller collected 2 ♂♂ Namting River, Feb. 1917; La Touche obtained 1 ♀ Hokow, March 1921.

494. *Chloropsis hardwickii hardwickii* Jard. & Selby.

Chloropsis hardwickii Jardine & Selby, *Ill. Orn. Add.* p. 1 (1829) (Nepal).

Captain Wingate collected 1 ♂ Ching-tung, March 1899; Bangs & Phillips record 5 examples from Loukouchai, Jan.–Feb.; Andrews & Heller obtained 4 ♂♂♀♀ Chang-lung and Mu-cheng, Feb.–March 1917; Forrest sent 2 ♂♂, 1 ♀ Tengyueh District, 1 ♂ Lichiang Range, 1 ♂, 1 ♀ Shweli–Salwin Divide.

In the 1925 collection are 1 ♂ Shweli–Salwin Divide, 8,000 feet, July 1925, 1 ♀ hills round Tengyueh, 8,000 feet, Aug. 1925; 1 ♂, 2 ♀♀ Yunnan, Styan coll., are in the British Museum.

495. *Chloropsis aurifrons aurifrons* (Temm.).

Phyllornis aurifrons Temminck, *Pl. Col.* 484 (1829) (Cachar).

Oustalet enumerates this species among the birds collected by Prince H. d'Orleans.

496. *Hemipus picatus capitalis* (McClell.).

Muscicapa capitalis McClelland, *Proc. Zool. Soc. London*, 1839, p. 157 (Assam).

Anderson collected 2 ♂♂ Pongsee, March–May 1868; Andrews & Heller obtained 1 ♂ Chang-lung, March 1917; Forrest sent 1 ♀ Shweli Valley; 1 example Yuen-chen, March 1903, is in the British Museum, Styan coll.

497. *Hemixus flavala flavala* Hodgs.

Hemixus flavala Hodgson, *Journ. As. Soc. Bengal*, vol. xiv, p. 572 (1845) (Nepal).

Anderson obtained 2 ♂♂ Pongsee, April 1868; Captain Wingate procured 1 ♂ ad. Mōng-kou, April 1899; Andrews & Heller collected 1 ♂ Chang-lung, March 1917.

2 ♂♂, 2 ♀♀ March 1903, Styan coll., are in the British Museum.

498. *Otocompsa flaviventris flaviventris* (Tick.).

Vanga flaviventris Tickell, *Journ. As. Soc. Bengal*, vol. ii, p. 573 (1833) (Dholbhum).

Among the birds collected by Prince H. d'Orleans Oustalet enumerates this species; Andrews & Heller obtained 1 ♂ ad. Chang-lung, March 1917.

499. *Otocompsa emeria emeria* (Linn.).

Lanius emeria Linnaeus, *Syst. Nat.*, vol. i, p. 137 (1766) (Bengal).

Anderson collected 1 ♂ Ponce, March 1868, 1 ♂, 1 ♀ Bhamo, Feb. 1868; Andrews & Heller obtained 6 ♂♂, ♀♀ Malipa, Chang-lung, and Meng-ting, Feb.-March 1917.

500. *Otocompsa emeria jocosa* (Linn.).

Lanius jocosus Linnaeus, *Amoen. Acad.*, vol. iv, p. 238 (China) (1759).

La Touche collected 1 ♂, 1 ♀ Loukouchai, Jan. and April 1921, 2 ♂♂, 1 ♀ Hokow, Feb.-March 1921.

In the British Museum are 4 ♂♂, 1 ♀ Yunnan, 2 ♂, 1 ♀ April 1903, Styan coll.

[On the Shan States, Yunnan, and Tonkin forms of *Criniger tephrogenys*.

In 1896 (*Bull. Mus. d'Hist. Nat. Paris*, vol. ii, pp. 185-186) Oustalet described *Criniger henrici* from 4 birds collected by Prince H. d'Orleans, 1 in Yunnan and 3 in Tonkin. He compared it with *C. gutturalis* lumping under that name both true *teph. gutturalis* of Borneo and ? Sumatra, *teph. tephrogenys* of Tenasserim, Siam, etc., and *teph. griseiceps* of N. Tenasserim and gave as his differences the larger size and yellower undersurface. He gives the wing-measurement as 100 mm.-114 mm. Mr. Stuart Baker describes in his new edition of the *Birds, Fauna of British India*, a *C. tephrogenys grandis* which he compares with *C. teph. pallidus* of Hainan; he gives the wing-measurement of his bird as 114 mm.-119 mm. as opposed to 98 mm.-105 mm. in *pallidus*; he considers the Annam-Tonkin birds intermediate and restricts the name *henrici* to them, while he includes the larger Yunnan birds (115 mm. wing-measurement) under his *grandis*.]

501. *Criniger tephrogenys griseiceps* Hume.

Criniger griseiceps Hume, *Stray Feath.*, vol. i, p. 478 (1873) (Upper Pegu).

Menegaux & Didier identify a specimen obtained by Pichon as this bird.

502. *Criniger tephrogenys grandis* Baker.

Criniger pallida grandis, Stuart Baker, *Bull. B.O.C.*, vol. xxxvii, p. 15 (1917) (Yunnan).

Oustalet included in his description of *Criniger henrici* a specimen of this bird collected by Prince H. d'Orleans between Manhao and Semao, South Yunnan; Bangs & Phillips record 5 examples Loukouchai, Feb.; Uchida & Kuroda enumerate 3 ♂♂, 2 ♀♀ Loukouchai Feb., 3 ♂♂ Yuen-chung, Styan coll., are in the British Museum.

[On the status of *Lanius schach* Linn. and *L. tephronotus* Vig.

Stuart Baker says that he keeps *tephronotus* as a separate species from *schach* and its several subspecies on account of its WANT of the *white wing*

speculum and the *brown* tail. In my series at Tring I have a number of ♂ *tephronotus* with absolutely black tails, and if Mr. Baker had only examined the wings of ♂ *tephronotus* more carefully, he would have found out that the WHITE SPECULUM is present but somewhat reduced in size, so that it is COVERED by the wing-coverts. Moreover, I have at least 1 male of *schach schach* with the WHITE SPECULUM as COMPLETELY concealed by the coverts as in the most extreme *tephronotus*. Therefore I maintain that *tephronotus* DOES belong to the "Formenkreis" of *schach*, and must be called *Lanius schach tephronotus*.]

503. *Lanius shach schach* Linn.

Lanius schach Linnaeus, *Syst. Nat.* ed. x, vol. i, p. 94 (1758) (China).

Bangs & Phillips record 14 examples from Shi-ping, Loukouchai, and Mengtshz, Jan.-Sept. and Dec.; La Touche collected 1 ♂, 7 ♀♀, 2 ? Mengtshz, Aug.-Dec. 1920 and Jan. 1921, 1 ♀ Milati, Jan. 1921, 1 ♀ Hokow, Feb. 1921; Monsieur & Madame Comby obtained 1 example.

503A. *Lanius fuscatus* Less.

Lanius fuscatus Lesson, *Traité d'Orn.* p. 373, No. 7 (1831).

Dr. Stresemann has declared that this bird is a melanistic mutant of *schach schach*, and from examination of our large series from Hainan, Tonkin, and Eastern China I believe he is right. La Touche is still very doubtful about the matter, and says the only proof can be taking the two from one nest. This I consider may be difficult because as it is a common phase it probably breeds true. I think, however, we shall eventually get the proof that *schach* and *fuscatus* are one and the same bird. La Touche throws doubt on Bangs & Phillips' record, but Uchida & Kuroda's ♂ out of the same collection is properly dated.

Bangs & Phillips record 1 example without exact data; Uchida & Kuroda record 1 ♂ Dec. 1, 1910, Mengtshz.

504. *Lanius schach tephronotus* (Vig.).

Collurio tephronotus Vigors, *Proc. Zool. Soc. London*, 1831, p. 43 (Himalayas, Gyantse Thibet).

Ingram records an example Mengtshz, April 1910; Captain Wingate collected 1 ♂ imm. Yunnan City, Feb. 1899; Bangs & Phillips enumerate 1 ♂ Loukouchai, Dec.; Andrews & Heller obtained 1 ♂ ad., 1 ♂ imm. Yung-chang-fu, Jan. 1917; La Touche collected 1 ♂, 1 ? Mengtshz, March 1921; Forrest sent 3 ♂♂, 2 ♀♀ juv. Tengyueh District, 9 ♂♂, 6 ♀♀ ad., 6 ♂♂, 2 ♀♀, 2 ? juv. Lichiang Range, 2 ♀♀ Shweli Valley, 1 ♀ Mekong-Salwin Divide.

In the 1925 collection are 2 ♂♂ imm. hills round Tengyueh, 8,000 feet, Oct. 1925, 1 ♂ imm. Tengyueh Valley, 7,000 feet, Dec. 1925; Monsieur and Madame Comby secured 1 example. There are in the British Museum 1 example Gyidzin-Shán, April 1902, 1 valley E. of Talifu, March 1902, 6 Talifu Valley, Feb.-April, 1902, 1 Tali Valley, March 1902, 1 Lichiang-Talifu Valley, March 1902, all from Colonel Rippon.

505. *Lanius cristatus cristatus* Linn.

Lanius cristatus Linnaeus, *Syst. Nat.* edit. x, p. 93 (1758) (Bengal).

Anderson collected 1 ♂ Pensee, May 1868; Bangs & Phillips record 4 examples Mengtshz and Loukouchai, May and Sept.-Oct. and Dec.; La Touche

obtained 1 ♂, 2 ♀♀ imm. Mengtsh, Nov.-Dec. 1920 and Feb. 1921, 3 ad. Yunnanfu, May 1921, 1 ♀ Lotukow, May 1921; Forrest sent 2 ♂♂ juv. Tengyueh District, 2 ? Shweli Valley, 1 ♀ juv. Lichiang Range. In the 1925 collection there are 1 ♂ ad. hills N.W. of Tengyueh, 8,000 feet, June 1925, 1 ♂ ad. vicinity of Tengyueh, 6,000 feet, June 1925, 1 ♂ imm. Tengyueh Valley, 6,000 feet, Dec. 1925.

506. **Lanius cristatus superciliosus** Lath.

Lanius superciliosus Latham, *Ind. Orn. Suppl.* p. xx (1801) (Batavia, Java).

Bangs & Phillips record 1 ♀ Mengtsh (identification ? !); Menegaux and Didier identify an example sent by M. Pichon as this form (also ? identification); La Touche collected 1 ♂ vix ad. 1 ♂ imm. Mengtsh, Dec. 1920 and Feb. 1921.

507. **Lanius collurioides siamensis** Gyldenst.

Lanius hypoleucus siamensis Gyldenstolpe, *Orn. Monatsb.* vol. xxiv, p. 28 (1916) (Koh Lak in Siamese Malay Peninsula).

Captain Wingate obtained a ♀ ad. Möng-Kou, April 1899; Bangs & Phillips record 3 examples Mengtsh, Aug., under the name *hypoleucus* Blyth; Andrews & Heller collected 2 ♀♀ ad. Chang-lung and Yung-Chang Fu, Jan. and March 1917; Forrest sent 1 ? juv. Shweli-Salwin Divide, 1 ♀ ad. Shweli Valley, 1 ♂ ad., 1 ? juv. Tengyueh District, Monsieur et Madame Comby collected 1 example.

508. **Lanius collurio kobylini** (Buturl.).

Enneoctonus collurio kobylini Buturlin, *Ibis*, 1906, p. 416 (Kuteis and Ssuram).

Monsieur and Madame Comby secured an example of this bird.

509. **Lanius nigriceps nigriceps** (Frankl.).

Colluria nigriceps Franklin, *Proc. Zool. Soc. London*, 1831, p. 117 (Ganges, Calcutta, Benares).

Anderson procured 4 specimens at Ponsee and Sanda, March-July 1868; Captain Wingate obtained 1 ♂, 1 ♀, Yunnan City, Feb. 1899; Bangs & Phillips record 1 ♂ Linan Fu, Feb.; Andrews & Heller collected 1 ♀ ad. Meng-Ting, Feb. 1917; La Touche obtained 4 ♀ Mengtsh, Dec. 1920 and Feb. 1921, 2 ♀♀ Taehouang, March 1921, 1 ♂ Milati, Jan. 1921; Forrest sent 1 ♂, 1 ♀ Lichiang Range, 3 ♂♂, 1 ♀ ad., 1 ♀ juv. Tengyueh District, 6 ♂♂ ad., 1 ♂ juv. Shweli Valley. In the 1925 collection is 1 ♂ ad. hills round Tengyueh, 6,000 feet, July 1925. There are in the British Museum 2 ♂♂, 1 ♀ Yunnan, 1 example Ye-Chan, Feb. 1899, Styan coll.; 1 ♂ Ching-tung, March 1899, 1 ? Nan-an-chou, Feb. 1899, Captain Wingate.

510. **Lanius tigrinus** Drap.

Lanius tigrinus Drapez, *Dict. Class. Hist. Nat.* vol. xii, p. 523 (1828) (Java).

Ingram records 1 ♂ Mengtsh, May 1910; Bangs & Phillips record 3 examples Mengtsh, April and Aug.; La Touche collected 1 ♀ ad., 1 ♀ imm. Mengtsh, Aug. 1920.

511. **Conostoma aemodium aemodium** Hodgs.

Conostoma aemodium Hodgson, *Journ. As. Soc. Bengal.* vol. x, p. 857, pl. (1841) (Nepal).

Dr. Stresemann (*Journ. f. Orn.* (v), 71, p. 363) has separated the Szetchuan birds from the Nepal birds, giving as the differences the higher bill and shorter

wing. I cannot see these differences; my 3 Indian birds have wing-measurements 118, 121, 132 mm., whereas the Washan ♂ has only a wing of 114 mm., but one of the 3 Washan birds has a wing of 125 mm. and Forrest's Lichiang example has the wing 130 mm.

In colour Forrest's bird is decidedly greyer, but the Washan bird is intermediate; I therefore reluctantly have to declare that I cannot agree in separating the Chinese birds as distinct.

Oustalet records several examples of this species as being among Prince H. d'Orleans' birds; Forrest sent 1 ♂ Lichiang Range.

[On the genera **Cholornis**, **Psittiparus**, **Suthora**, **Paradoxornis**, and **Heteromorpha** Hodgs.]

I still maintain the same opinion I expressed in 1921, when I recorded and worked out George Forrest's first collection, namely that the above five genera are so interlinked that they cannot be maintained, and that all these highly interesting oriental allies of our *Panurus biarmicus* (the Bearded Tit) belong to a single genus.

Dr. Hartert, while maintaining the generic distinction of *Cholornis*, *Suthora*, and *Paradoxornis*, points out that the only distinction between *Cholornis* and *Suthora* is that *Cholornis* has the outer toe abortive and MINUS the claw, whereas *Suthora* has both inner and outer toes and claws about equal in size and complete. Dr. Hartert, however, had failed to consider that in *Suthora* (*Heteromorpha*) *unicolor* we have the connecting link, because in this species the outer toe is very much smaller than the inner toe and the claw is only one-third the size of that of the inner toe. Apart from the difference in the outer toe *Suthora unicolor* (Hodgs.) and *Cholornis paradoxa* Verr. are exactly alike in appearance.]

512. *Paradoxornis guttaticollis* A. Dav.

Paradoxornis guttaticollis Armand David, *Nouv. Arch. Mus. Paris*, vol. vii, *Bull.* p. 14 (1871) (no precise locality, but Western Szechuan).

Bangs & Phillips record 3 ♂♂ Mengtsh and Loukouchai, Feb.-March and Dec.; Uchida & Kuroda list 3 ♂♂ Loukouchai, Jan.-Feb. and Dec.; Forrest sent 1 ♂, 3 ♀♀ T'ong Shán, 2 ♂♂, 2 ♀♀ Lichiang Range, 4 ♂♂, 2 ♀♀ Tengyueh District, 1 ♂ Shweli-Salwin Divide, 1 ♀ Shweli Valley

In the 1925 collection are 2 ♂♂, 2 ♀♀ hills south of Tengyueh, 7,000 feet, May 1925.

513. *Paradoxornis unicolor canaster* (Thay. & Bangs).

Suthora unicolor canaster, Thayer & Bangs, *Mem. Mus. Comp. Zool. Harvard*, vol. xl, No. 4, p. 171 (1912) (Washan).

Paradoxornis unicolor saturator Rothschild, *Nov. Zool.* vol. xxviii, p. 54, No. 202 (1921) (Shweli-Salwin Divide).

When I described *un. saturator* I had no Szechuan examples for comparison, and the description of *un. canaster* did not seem to fit Forrest's birds. I have, however, now exchanged a Szetehuan bird collected by Dr. Weigold, and find it indistinguishable from Forrest's fine series.

Forrest sent 3 ♂♂, 2 ♀♀ Shweli-Salwin Divide, 9 ♂♂, 9 ♀♀, 1 ? Lichiang Range. In the 1925 collection there are 4 ♂♂, 6 ♀♀, 2 nestlings Shweli-Salwin Divide, 9,000-11,000 feet, June, Aug.-Oct. 1925.

514. *Paradoxornis alphonsiana yunnanensis* (La Touche).

Suthora webbiana yunnanensis La Touche, *Bull. B.O.C.* vol. xlii, p. 31 (1921) (Kopaotsun).

Uchida & Kuroda record 1 example (under the name *alphonsiana*) Loukouchai Dec. ; La Touche collected 4 ♂♂, 1 ♀ Kopaotsun, May 1921, 2 ♀♀ Yumanfu ; in the British Museum are 2 ♂♂ examples Yunnan, Feb. 1903, and 3 ♀♀ Mu-chu Jan. 1903 (Styan coll.).

515. *Paradoxornis fulvifrons cyanophrys* (A. Dav.).

Suthora cyanophrys Armand David, *Journ. trois Voy. Chine*, vol. i, p. 345 (1875) (Shensi merid.).

Oustalet records several examples collected at Tsékou by Père Soulié ; Forrest sent 2 ♂♂, 2 ♀♀ Shweli-Salwin Divide, 1 ♂, 1 ♀ Tengyueh District, 5 ♂♂, 2 ♀♀ Lichiang Range. In the 1925 collection is 1 ♂ Shweli-Salwin Divide, 10,000 feet, July 1925.

516. *Paradoxornis poliotis poliotis* (Blyth).

Suthora poliotis Blyth, *Journ. As. Soc. Bengal*, vol. xx, p. 522 (1851) (Cherrapunji).

Forrest sent 1 ♂, 1 ♀ Tengyueh District in his 1924 collection. In the 1925 collection there is 1 ♂ hills N.W. of Tengyueh, 9,000 feet, July 1925.

517. *Paradoxornis ruficeps atrosuperciliaris* (Godw.-Aust.).

Chleuasicus ruficeps var. *atrosuperciliaris* Godwin-Austen, *Proc. As. Soc. Bengal*, 1877, p. 147 (Sadiya Assam).

Anderson obtained 1 example Pongee, April 1868.

[On the *webbiana* group of *Paradoxornis*.

The *webbiana* group is a very complicated lot of forms, which I fear will not be properly straightened out until much more is known of their breeding habits and localities, and also a specially important point, whether the bulk of the forms are regular migrants or not. Of *webbiana* proper at least three races occur in Yunnan together with *brunnea* And.

Of described forms of *webbiana* we have the following, as far as I have been able to find out, and they all show an appreciable amount of striping on the throat, whereas *brunnea* has none or hardly any.

Dr. Hartert has recently reviewed these difficult birds in his Nachtrag 1 to his *Vögel der palaäarktischen Fauna*, pp. 44-45, but has erroneously included La Touche's *yunnanensis*, which is an *alphonsiana* race and has no relationship to *webbiana*.

Paradoxornis webbiana webbiana (Gray). Shanghai to Tschekiang Coast District.

Paradoxornis webbiana suffusa (Swinh.). Yuangtze Valley, Tsinling Mts., and S.E. China.

Paradoxornis webbiana fulvicauda (Campbell). Tschili and Corea.

Paradoxornis webbiana mantschurica (Tacz.). Ussuriland and Mantschuria.

Paradoxornis webbiana styani (Ripp.). Shan States and Tali Valley, Yunnan.

Paradoxornis webbiana ricketti Rothsch. Yangtze Valley, Yunnan.

Paradoxornis webbiana elizabethae La Touche. Loukouchai.

(This ought never to have been described from a single moulting cage bird.)

Paradoxornis webbiana bulomachus (Swinh.). Formosa.

I think we can safely treat *brunnea* And. as a distinct species, as it occurs together with *ricketti* Rothsch.]

518. **Paradoxornis webbiana styani** (Ripp.).

Suthora styani Rippon, *Bull. B.O.C.* vol. xiii, p. 54 (1903) (Tali Valley).

Colonel Rippon obtained this bird in the Tali Valley, Yunnan.

519. **Paradoxornis webbiana ricketti** Rothschild.

Paradoxornis webbiana ricketti Rothschild, *Nov. Zool.* vol. xxx, p. 51, No. 136 (1923) (Yangtze Valley).

Forrest sent 1 ♂, 1 ♀ Yangtze Valley, 1 ♂, 4 ♀♀ Lichiang Range.

520. **Paradoxornis webbiana elizabethae** La Touche.

Suthora alphonsiana elizabethae La Touche, *Bull. B.O.C.* vol. xlii, p. 52 (1921) (Lonkouchai).

La Touche obtained a single ♂ alive in a cage at Loukouchai in the spring of 1921; it died in England in full moult. (A single moulting cage bird ought never to be described.)

521. **Paradoxornis webbiana webbiana** (Gray).

Suthora webbiana Gray, *Proc. Zool. Soc. London*, 1852, p. 70, pl. xlix (Shanghai).

Bangs & Phillips record 3 ♂♀ Loukouchai, Jan.–Feb. 1911.

I feel almost convinced that there is an error of determination and that these 3 birds belong to *Paradoxornis brunnea* And. Of course birds wander in an often unaccountable manner, and they may be really stray *w. webbiana*, but I can hardly believe it.

522. **Paradoxornis brunnea** (Anders.).

Suthora brunnea Anderson, *Anat. Zool. Reser. West Yunnan*, 1868 and 1875, p. 638, No. 127 (1878) (Momien).

Anderson collected 4 examples Momien, June 1868; Oustalet enumerates this bird among Prince Henri d'Orleans' collections from N. Yunnan; Monsieur Pichon sent 2 specimens; Forrest sent 1 ? Lichiang Range, 2 ♂♂, 2 ♀♀ Tali Valley, 16 ♂♂, 13 ♀♀, 1 ? Tengyueh District.

In the 1925 collection are 1 ♂ hills round Tengyueh, 6,000 feet, Aug. 1925, 1 ♀ hills N. of Tengyueh, 7,000 feet, Nov. 1925. Colonel Rippon collected 1 Yung-Chang-Chutung Road, Jan. 1906, 1 hills E. of Yung-Chang, Jan. 1902.

523. **Paradoxornis brunnea brunnea** × **P. webbiana ricketti**.

Mr. Kinnear considers the following series collected by Colonel Rippon to be intermediate between the above 2 birds. I am unable to confirm or deny this with the material up to now available, so I leave it as he proposes for the present. Eight examples Talifu Valley, Feb.–April 1902 and Feb.–April 1906, 2 Mekong-Yung-Chang Road, April 1906, 2 Valley E. of Talifu, March 1902, 1 Shan-Kwan, March 1902, 2 Yangpi-Chutung Road, April–May 1906, 1 hills N.E. of Talifu, March 1902.

524. *Cephalopyrus flammiceps olivaceus* Rothsch.

Cephalopyrus flammiceps olivaceus Rothschild, *Nov. Zool.* vol. xxx, p. 263, No. 143 (1923) (vicinity of Tengyueh).

Oustalet records this bird among those collected by Père Soulié at Tsékou ; La Touche collected 1 ♂ imm. Loukouchai, Feb. 1921 ; Forrest sent 1 ♂ Tengyueh District (type).

525. *Regulus regulus yunnanensis* Ripp.

Regulus yunnanensis Rippon, *Bull. B.O.C.* vol. xix, p. 19 (1906) (W. Yunnan).

Colonel Rippon obtained 13 examples at Yangtze Big Bend, Feb.–March 1906, 3 Yangpi Valley, Feb. 1906, 3 Talifu Valley, Feb. 1906, 2 Lichiang, March and April 1906, 1 ♂, 2 ♀♀ Gyi-dzin-Shán, March–April 1902 ; Forrest sent 10 ♂♂, 2 ♀♀ Lichiang Range.

526. *Anthoscopus pendulinus consobrinus* (Swinh.).

Aegithalus consobrinus Swinhoe, *Proc. Zool. Soc. London*, 1870, p. 133 (Scha-schi Yangtze-kiang).

M. Pichon sent 2 examples and Menegaux & Didier say that Oustalet has also recorded this bird, but I have failed to find his reference.

527. *Aegithaliscus concinnus talifuensis* Ripp.

Aegithaliscus talifuensis Rippon, *Bull. B.O.C.* vol. xiv, p. 18 (1903) (Gyi-dzin-Shán).

Oustalet records this bird collected by Prince H. d'Orleans ; Ingram records 1 ♂ Mengtsh, June 1910 ; Colonel Rippon obtained 5 examples Lichiang, March 1906, 1 Talifu, May 1906 ; Bangs & Phillips list 9 specimens Mengtsh, Jan.–Dec. ; Monsieur & Madame Comby collected 1 example ; Monsieur Pichon sent 2 specimens ; La Touche obtained 2 ♀♀, 1 ? Milati, Jan.–Feb. 1921, 2 ♂♂ Loukouchai, March–April 1921, 1 ♂ Lotukow, May 1921, 2 ad., 2 juv. Kopaotsun, May 1921 ; Forrest sent 2 ♂♂, 1 ♀ T'ong Shán, 2 ♂♂ Chien Chuan Valley, 2 ♂♂ Yangtze Valley, 1 ? Shweli Valley, 1 ♂ Shweli–Salwin Divide, 1 ♀ Mekong Valley, 2 ♂♂, 1 ♀ Mekong–Salwin Divide, 1 ♂, 1 ♀ Tali Range, 4 ♂♂, 3 ♀♀, 1 ? Tengyueh District, 10 ♂♂, 6 ♀♀, 1 ? Lichiang Range.

In the 1925 collection are 3 ♂♂, 2 ♀♀ ad., 2 nestlings Shweli–Salwin Divide, 9,000–11,000 feet, June–Aug. 1925, 3 ♂♂, 3 ♀♀, 1 ? ad., 3 nestlings, hills N.W. of Tengyueh, 7,000–8,000 feet, July 1925. In the British Museum there are also from Colonel Rippon 2 examples Shayang–Chutung Road, March 1902, 3 Gyi-dzin-Shán, April 1902, and 2 Chutung–Yangpi Road, March–April 1902.

528. *Aegithaliscus bonvaloti* (Oust.).

Acredula bonvaloti Oustalet, *Ann. Sciën. Nat. Zool.* (7), xii, p. 286, pl. ix, f. 1 (1891) (Ta-tsen-lu and Pendjama).

Colonel Rippon obtained 2 examples Lichiang, March 1906, 20 Yangtze Big Bend, March 1906 ; Oustalet records it as collected by Prince H. d'Orleans ; Forrest sent 19 ♂♂, 9 ♀♀, 14 ? Lichiang Range, 1 ♀ Mekong Valley, 1 ♂, 1 ♀ ad., 1 ♀ juv. Mekong–Salwin Divide. Also there are in the British Museum from Colonel Rippon 1 each from Gyi-dzin-Shán, Chutung–Yangpi Road, and Ta-laupa–Chutung–Yangpi Road, all March 1902.

529. *Aegithalus caudatus glaucogularis* (Moore).

Orites glaucogularis F. Moore, *Proc. Zool. Soc. London*, 1854, p. 140 (China).

Colonel Rippon collected 1 example, Lichiang March 1906.

530. *Parus modestus saturatior* (Ripp.).

Sylviparus saturatior Rippon, *Bull. B.O.C.* vol. xvi, p. 87 (1900) (Mt. Victoria).

Colonel Rippon obtained this bird from Yunnan? (no example in British Museum); Forrest sent 1 ♀ Mekong-Salwin Divide, Sept. 1921.

I believe the record for Yunnan attributed to Colonel Rippon rests on an error, and that Forrest's ♀ is the only Yunnan record, but I cannot trace the error or the record.

531. *Parus spilonotus subviridis* Tick.

Parus subviridis Tickell (Blyth), *Journ. As. Soc. Bengal*, vol. xxiv, p. 265 (1855) (Tenasserim).

Mr. Baker includes *spilonotus* in *Machlolophus*, but I consider the crest is not a sufficient character to found a genus on.

Forrest sent 4 ♂♂ ad., 1 ♂ juv. Shweli-Salwin Divide.

In the 1925 collection are 1 ♂ hills N.W. of Tengyueh, 9,000 feet, Nov. 1925, 2 ♂♂ imm. Shweli-Salwin Divide, 10,000 feet, Aug. 1925.

532. *Parus spilonotus evanescens* subsp. nov.

This is a very remarkable bird, and apparently goes a long way towards linking up *rex* Dav. with *spilonotus* Blyth as subspecies of one "Formenkreis." Differs from sp. *subviridis* in having still less olive-green above the back, being almost and the rump quite grey, the olive-yellow being only present on the hind-neck and front portion of interscapular region. Below the sides of the breast and flanks are much less bright yellow, more yellowish or whitish olive. Forrest sent 3 ♂♂ ad., 2 ♀♀ juv. Shweli Valley. In the 1925 collection is 1 ♂ ad. Shweli-Salwin Divide, 10,000 feet, Aug. 1925 (type).

533. *Parus rex* Dav.

Parus rex Armand David, *Ann. Scien. Nat.* (5), xix, art. 9 (1874).

Oustalet records this species from Yunnan; Bangs & Phillips enumerate 4 specimens Loukouchai, Feb.-March; La Touche collected 7 ♂♂, 1 ♀ Milati, Jan. 1921, 3 ♂♂, 1 ♀ Loukouchai, March and April 1921.

534. *Parus dichrous wellsii* Baker.

Parus dichrous wellsii Stuart Baker, *Bull. B.O.C.* vol. xxxviii, p. 8 (1917) (Yangtze Big Bend).

Forrest sent 13 ♂♂, 5 ♀♀, 4 ? Lichiang Range, 2 ♂♂, 2 ♀♀ ad., 1 ♂ juv. Mekong-Salwin Divide. 1 ♂, 1 ? Mekong-Yangtze Divide.

Oustalet records *dichrous* from Prince Henri d'Orleans' collection, and Ingram remarks it must surely be *dichrous dichroides*, but this is evidently not the case as the Yunnan birds are all *wellsii*. In the British Museum from Colonel Rippon are 7 Yangtze Big Bend, March 1906, and 1 Lichiang Valley, April 1906.

535. *Parus rufonuchalis beavani* (Jerd.).

Lophophanes beavani Jerdon, *Birds of India*, vol. ii, p. 275 (1863) (Mt. Tonglloo Sikkim).

Colonel Rippon and Forrest appear to be the only collectors to obtain this bird; Forrest sent 1 ♂ Mekong Valley, 1 ♂ ad., 1 ♀ juv. Mekong-Salwin Divide, 7 ♂♂, 2 ♀♀ 1, ? Lichiang Range.

In the 1925 collection are 1 ♂, 1 ♀ Shweli-Salwin Divide, 11,000 feet, Aug. 1925.

Colonel Rippon obtained 4 examples Yangtze Big Bend, March 1906.

536. *Parus ater aemodius* Hodgs.

Parus aemodius Hodgson, *Journ. As. Soc. Bengal*, vol. xiii, pt. ii, p. 943 (1844) (Nepal).

Colonel Rippon got 1 example Lichiang, March 1906; Oustalet enumerates this species among Prince H. d'Orleans' birds; Forrest sent 3 ♂♂ 1 ♀ ad., 1 ? juv. Lichiang Range.

537. *Parus monticolus yunnanensis* La Touche.

Parus monticolus yunnanensis La Touche, *Bull. B.O.C.*, vol. xlii, p. 51 (1921) (S.E. Yunnan).

Colonel Rippon obtained 5 examples Talifu Valley, March 1926; Oustalet records it among Prince H. d'Orleans' birds; La Touche collected 4 ♂♂, 3 ♀♀ Milati, Jan.-Feb. 1921, 1 ♀ Loukouchai, Jan. 1921, 2 ? Lotukow, May 1921; Forrest sent 2 ♂♂ Tengyueh District, 5 ♂♂, 1 ♀ Lichiang Range.

In my article on Forrest's first collection I unfortunately named this bird *monticolus insperatus* Swinh., a local race confined to the island of Formosa; I corrected this in my second article, but again erred by identifying it with *monticolus monticolus*; it was only in my third article (Nov. Zool. vol. xxx, p. 262, No. 141, 1923) that I correctly identified this bird. In the British Museum from Colonel Rippon are also 4 examples Gyi-dzin-Shán, March-April 1902, 1 Yangpi Valley, April 1902, 1 Chutung-Yangpi Road, March 1902, 2 Lichiang Valley, April 1906, and 1 hills west of Talifu, March 1902.

538. *Parus palustris dejeani* Oust.

Parus dejeani Oustalet, *Bull. Mus. Hist. Nat. Paris*, vol. iii, p. 209 (1897) (Ta-t sien-lu).

Lophophanes poecilopsis Sharpe, *Bull. B.O.C.*, vol. xiii, p. 11 (1902) (Chutung).

This bird was redescribed by Dr. Sharpe and placed by him in the genus *Lophophanes*: he compared it with *beavani*. This is quite incomprehensible, as the bird is certainly not a "Crested Tit." Dr. Hartert, in the third volume of his *Palaearctic Birds*, says his attention was drawn to this bird by Dr. Lowe and Mr. Kinnear, and that it was a "Willow Tit," and must stand as *Parus atricapillus poecilopsis* (Sharpe). In his supplement I, however, he has carefully compared a further series and finds it is really a "Marsh Tit," i.e. a bird with a glossy head, as opposed to the dull black heads of the "Willow Tits." He also discovered that Szechuan *dejeani* were identical in every respect, so that at last we have brought this bird to rest under the title of *Parus palustris dejeani*.

Colonel Rippon collected this bird at Chutung-Yangpi Road (type of *poecilopsis*), and 8 examples at Yangtze Big Bend, March 1906. Oustalet records this bird from Tsékou Père Soulié; Forrest sent 2 ♂♂, 2 ? Lichiang Range.

539. *Parus major commixtus* Swinh.

Parus commixtus Swinhoe, *Ibis*, 1868, p. 63 (Amoy China).

Anderson obtained 1 adult Pongsee, May 1868, 3 juv. Muangla, Jan. and March 1868; Colonel Rippon 1 example Yungchang, Jan. 1906, 5 Talifu Valley, Feb. 1906, 3 Liehiang, March–April 1906, 3 Yangtze Big Bend, March 1906, 1 Tali Valley, April 1906; Oustalet enumerates this species among Prince H. d'Orleans' birds; Andrews & Heller collected 2 ♂♂ Yung-chang-Fu, Jan. 1917. In the British Museum from Colonel Rippon are 9 examples Talifu Valley, Feb.–April 1906, 4 Yangtze Big Bend, March–April 1906, and 2 Liehiang, March 1906, 2 Chutung-Yangpi Road, March 1906, and 1 hills E. of Yung-chang, Jan. 1906.

540. *Parus major minor* Temm. & Schleg.

Parus minor Temminck & Schlegel in Siebold's *Faun. Jap. Aves*, p. 70, pl. xxiii (1848) (Japan).

Captain Wingate collected 1 ♀ ad. Nan-an-chow, Feb. 1899; Uchida & Kuroda record 3 ♂♂, 2 ♀♀ Mengtsh, March–April and Sept.–Nov.; Monsieur Pichon sent 1 example; Monsieur et Madame Comby got 1 example; Uchida & Kuroda's birds are possibly *alturum* La Touche.

541. *Parus major alturum* La Touche.

Parus major alturum La Touche, *Bull. B.O.C.* vol. xliii, p. 43 (1922) (Mengtsh).

Mr. La Touche has placed Bangs & Phillips' *m. commixtus* under this heading, and I have also put Ingram's Mengtsh birds here, but it is not at all certain that the facts bear this out, as both *minor* and *commixtus* could occur together with *alturum* at Mengtsh during the migration periods.

Ingram records 5 examples Mengtsh, May–June 1910; Bangs & Phillips enumerate 14 specimens, Mengtsh, March–Dec., Loukouchai, Dec., Linan Fu, Feb.; La Touche collected 11 ♂♂, 5 ♀♀, 5 ? ad., 1 ? juv. Mengtsh, July–Dec. 1920 and March–April 1921, 4 ♂♂, 1 ♀ Milati, Jan.–Feb. 1921, 1 ? ad., 2 ? juv. Yunnanfu, May 1921, 1 ? juv. Lotakow, May 1921.

542. *Parus major thibetanus* Hart.

Parus major thibetanus Hartert, *Jög. Pal. Faun.* vol. i, p. 346, No. 544 (1905) (Chaksam).

Parus major longipennis Rothschild, *Bull. B.O.C.* vol. xliii, p. 11 (1922) (Lichiang Range).

When I described this form I did not compare it with Hartert's *thibetanus*, as the habitat appeared to bar this, but I have since found them to be one and the same bird. Forrest sent 3 ♂♂, 1 ♀ Tengyueh District, 8 ♂♂, 1 ♀, 8 ? ad., 2 ? juv. Lichiang Range.

543. *Sitta himalayensis* Jard. & Selby.

Sitta himalayensis Jardine & Selby, *Illust. Orn.* vol. iii, pl. 144 (1835) (Himalayas).

Forrest sent 1 ♂ Shweli–Salwin Divide. In the 1925 collection are 1 ♂, 2 ♀♀ Shweli–Salwin Divide, 8,000 feet, June–Aug. 1925.

544. *Sitta yunnanensis* O.-Grant.

Sitta yunnanensis Ogilvie-Grant, *Bull. B.O.C.* vol. x, p. 37 (1900) (Wei-Yuan).

Captain Wingate obtained 1 ♂ ad. (type) Wei-Yuan, March 1899, Colonel Rippon collected 2 examples Lichiang, March 1906, 2 Yangtze Big Bend, March–

April 1906, 1 Lichiang Valley, April 1906, 1 Yangpi-Chutung Road, April 1906; Forrest sent 1 ♂ Tali Range, 1 ♀ Mekong-Salwin Divide, 1 ♂♂, 1 ♀, 4 ? Lichiang Range.

In the 1925 collection are 1 ♀ hills north of Tengyueh, 8,000 feet, Nov. 1925, 1 ♂, 3 ♀♀ Shweli-Salwin Divide, 8,000-10,000 feet, July-Aug. 1925. In the British Museum are 2 ♂♂ Yung-Chang, Styan coll., and 10 examples Yangpi-Chutung Road, March-April 1902, 1 Yung-chang fu-Lenshawichi, May 1902, 5 Yangtze Big Bend, March-April 1906, 3 Lichiang, March-April 1906, and 1 Gyi-dzin-Shán, April 1902, all from Colonel Rippon.

545. *Sitta europaea nebulosa*: La Touche.

Sitta europaea nebulosa La Touche, *Bull. B.O.C.* vol. xlii, p. 55 (1921) (S.E. Yunnan).

La Touche first described this as *Sitta europaea obscura*, but renamed it *nebulosa* as *obscura* was preoccupied in the genus.

Colonel Rippon collected 1 example, Lichiang, March 1906, 1 Lichiang Valley, April 1906, and several Yangtze Big Bend, March 1906; Bangs & Phillips record 1 ♂ Loukouchai, Jan.; Oustalet enumerates this bird under the name of *Sitta caesia*!! among those collected by Prince H. d'Orleans; Andrews & Heller record under the name of *Sitta nagaensis* 1 ♀ ad. Ho-mu-shu Pass April, 1917; La Touche collected 7 ♂♂, 4 ♀♀ Milati, Jan.-Feb. 1921, 1 ♂, 1 ♀ Loshintang, Feb. 1921, 1 ♂ Lotukow, May 1921, 1 ♂, 2 ♀♀ ad., 1 ♂ juv. Kopaotsun, May 1921, 1 ♀ Yunnanfu, May 1921; Forrest sent 1 ♀ Shweli Valley; 2 ♂♂, 2 ♀♀ Tengyueh District, 8 ♂♂, 2 ♀♀, 6 ? Lichiang Valley; Monsieur & Madame Comby collected 1 example. In the British Museum are 1 ♂ Mon Mum, March 1899, 1 ♀ Yunnan, Styan coll., and from Colonel Rippon 2 Chutung-Yangpi Road, March-April 1902, 4 Lichiang Valley, March-April 1926, 6 Yangtze Big Bend, March 1906, and 10 Gyi-dzin-Shán, March-April 1902.

In my first two articles on Forrest's birds I named this bird *Sitta europaea montium* La Touche, but in the two last I recorded it as *S. e. nebulosa* La Touche, as he points out the Yunnan birds are distinct from those from Fokien.

546. *Sitta magna* Wardl.-Rams.

Sitta magna Wardl.-Ramsay, *Proc. Zool. Soc. London*, 1876, p. 677 (Karennee).

Captain Wingate secured 1 ♂ Wei-Yuan, March 1899; Colonel Rippon collected 2 examples Yangpi-Chutung Road, March 1906, and 1 ♂ Gyi-dzin-Shán, April 1902. In the British Museum there are also from the Styan collection 2 ♂♂, 1 ♀ Yuen-chang.

547. *Sitta canadensis villosa* Verr.

Sitta villosa Verreaux, *Nouv. Arch. Mus. Paris*, vol. i, *Bull.* p. 78, pl. v, f. 1 (1865) (north of Peking).

Oustalet records this species among Prince H. d'Orleans' birds.

548. *Sitta frontalis frontalis* Horsf.

Sitta frontalis Horsfield, *Trans. Linn. Soc. London*, vol. xiii, p. 162 (Java),

Anderson collected 1 ♂ Ponsee, April 1868; Ingram records 1 Mengtsz, June 1910; Bangs & Phillips record 4 examples Loukouchai, Feb. and June-July; La Touche enumerates 1 ♂ Loukouchai, March 1921, under the name

frontalis corallina Hodgs.; Andrews & Heller record under the same name 3 ♀♀ ad. Malipa, Namting River, and Chang-lung, Feb.-March 1917.

Horsfield's type (now in the British Museum) came from Java, and an old Java specimen is at Tring out of the Riaccour collection. Hartert has separated the Malay Peninsula birds under the name of *frontalis intensior*, and Dr. Sharpe described the Bornean race as *corallipes*. Should it turn out, as I think most likely, that the Java bird is not like the Ceylon, Indian, and Burmese examples, then the bird found in Ceylon, most of Continental India, Assam, and Burma, together with Yunman, must bear the name of *frontalis corallina* Hodgs., but this can only be decided by the examination of good series of fresh Java birds.

549. **Tichodroma muraria** (Linn.).

Certhia muraria Linnaeus, *Syst. Nat.* edit. xii, vol. i, p. 184 (1766) (South Europe).

Colonel Rippon got 1 example Talifu Valley, Feb. 1906; Forrest sent 1? Lichiang Range.

550. ***Certhia himalayensis yunnanensis*** Sharpe.

Certhia yunnanensis Sharpe, *Bull. B.O.C.* vol. xiii (1902) (Shayang).

Oustalet records this species among the birds collected by Prince H. d'Orleans; Colonel Rippon obtained 2 examples Lichiang Valley, March-April 1906, and 8 examples Yangtze Big Bend, March 1906; Forrest sent 1 ♂ 1? ad., 3 ♂♂ juv. Lichiang Range. Colonel Rippon also got 1 Shayang-Chuting Road, March 1902, 1 Gyi-dzin-Shán, April 1902, 1 Yung-kuoresu, March 1902.

551. ***Certhia familiaris khamensis*** Bianchi.

Certhia khamensis Bianchi in Sharpe, *Handlist Birds*, vol. iv, pp. 355 and 360 (1903) (Kham).

Colonel Rippon collected 1 example Lichiang, March 1906, 2 Yangtze Big Bend, March 1906; Forrest sent 1 ♂, 3 ♀♀, 3? Lichiang R., 1 ♂, 1 ♀ ad., 1 ♀ juv. Mekong-Salwin Divide.

552. ***Certhia discolor fuliginosa*** Baker.

Certhia discolor fuliginosa Stuart Baker, *Faun. Brit. Ind.* 2nd edit. *Aves*, vol. i, p. 438, No. 454 (1922) (Loi-pang Nan Mekong).

Andrews & Heller collected 1 ♂ ad. Tai-ping-pu, April 1917; Forrest sent 1 ♀ Shweli-Salwin Divide.

Both Bangs, when recording Andrews & Heller's example, and I, when recording Forrest's in my first paper, have called this bird erroneously *discolor discolor*.

553. ***Zosterops erythropleura erythropleura*** Swinh.

Zosterops erythropleurus Swinhoe, *Ibis*, 1863, p. 294 (N. China).

Colonel Rippon obtained an example at Gyi-dzin-Shán, April 1902; La Touche collected 1 ♂, 2 ♀♀ Mengtze, Oct. 1920; Forrest sent 9 ♂♂, 3 ♀♀ Lichiang Range.

554. *Zosterops erythropleura melanorhyncha* La Touche.

Zosterops erythropleura melanorhyncha La Touche, *Bull. B.O.C.* vol. xlii, p. 32 (1921) (Mengtsz).

This bird is either a freak or else a stray wanderer from a different breeding area than that of the typical race. La Touche collected 1 ♀ (type) Mengtsz, Oct. 1920.

[On the *Zosterops* of the *palpebrosa* and *simplex* groups.

These birds have until recently been completely misunderstood. It has been the practice of recent authors to treat all these birds as forms of *palpebrosa*. Thus *simplex* Swinh. was always treated as a form of *palpebrosa* and Oustalet, under the name of *mussoti*, mixed up both the *palpebrosa* and *simplex* races of Szechuan. The truth is that wherever there is a *simplex* form resident we also find a *palpebrosa* form at home, and the younger birds of both forms have been mixed up. Some of the older records will be difficult to disentangle, but later ones, when the actual specimens can be compared, will not be so difficult. In working out the following Yunnan forms I have not touched the Sunda Island races, but I am sure there also *palpebrosa* forms and *simplex* will be found to occur side by side.]

555. *Zosterops palpebrosa elwesi* Baker.

Zosterops palpebrosa elwesi Stuart Baker, *Ibis*, 1922, p. 145 (Sikkim).

Anderson records 1 ♂ Monien, July 1868; Forrest sent 1 ♂, 3 ♀♀, 1 ? Tengyueh District; 2 ♀♀, 1 ? Shweli-Salwin Divide.

In the 1925 collection are 1 ♂, 1 ♀ hills N.W. of Tengyueh, 7,000 feet, July 1925.

In the British Museum from Colonel Rippon are 2 examples Gyi-dzin-Shán, April 1902, 1 Chutung-Yangpi Road, March 1902, 1 Yangpi-Talifu Road, March 1902, 1 Shayang-Pingpo Road, April 1902, 1 Lichiang Valley, March 1906, 1 hills N.E. of Talifu, March 1902.

556. *Zosterops palpebrosa williamsoni* Rob. & Kloss.

Zosterops palpebrosa williamsoni Robinson & Boden Kloss, *Journ. Nat. Hist. Soc. Siam*, vol. iii, p. 445 (1919) (West Coast Siam and Selangor).

Zosterops aureiventer johannae La Touche, *Bull. B.O.C.* vol. xlii, p. 31 (1921) (Mengtsz).

Ingram records 5 examples Mengtsz under the name of *palpebrosa palpebrosa*. Bangs & Phillips record 10 examples Mengtsz, Jan.-Sept., under the name of *palpebrosa mussoti*; La Touche collected 7 ♂♂, 9 ♀♀, 2 ? Mengtsz, Aug.-Dec. 1920 and Feb. 1921, 1 ♂ Milati, Sept. 1920, 1 ♂ Tachouang, March 1921.

The description of *williamsoni* agrees perfectly with that of *johannae*, and moreover Stuart Baker who has compared them has said they are the same.

557. *Zosterops simplex simplex* Swinh.

Zosterops simplex Swinhoe, *Proc. Zool. Soc. London*, 1863, p. 203 (S.E. China).

Anderson records 1 example Pensee, May 1868; Andrews & Heller collected 1 ♂, 1 ♀ ad. Chang-lung and Malipa, March 1917; Uehida & Kuroda record 3 ♂♂, 3 ♀♀ Jan.-Sept.; Forrest sent 1 ♂, 1 ♀, 1 ? Mekong Valley, 2 ♂♂, 1 ♀, Mekong-Salwin Divide, 1 ♂, 1 ♀ Salwin Valley, 1 ♂ Tengyueh District, 2 ♂♂, 1 ♀, 1 ?

Lichiang Range. In the British Museum from Colonel Rippon are 2 examples Gyi-dzin-Shán, April 1902, 1 hills N. of Talifu, April 1902, 1 Talifu Valley, April 1902, 1 Lichiang, May 1906. In the British Museum from Colonel Rippon 2 examples Gyi-dzin-Shán, April 1902, 1 Yangpi-Chutung Road, April 1906, 1 Lichiang, May 1906, and 1 Talifu Valley, April 1902.

558. *Dicaeum ignipectus ignipectus* (Blyth).

Myzanthus ignipectus Blyth, *Journ. As. Soc. Bengal*, vol. xii, p. 983 (1843) (Nepal and Bhutan).

Captain Wingate procured 1 ♂ ad. Chung-tung, March 1899; Colonel Rippon secured an example on the Yangpi-Chutung Road, April 1906; Oustalet enumerates it among the birds collected by Prince H. d'Orleans; Bangs & Phillips list 4 examples Mengtsz, Jan. and March, and Loukouchai, Feb.; La Touche collected 6 ♂♂, 3 ♀♀ Mengtsz, Nov. 1920 and Jan.-March 1921, 1 ♂, 1 ♀ Loukouchai, March 1921, 3 ♂♂ Tachouang, Feb.-March 1921, 2 ♂♂, 1 ♀ Lotukow, May 1921; Forrest sent 1 ♂ ad. Shweli Valley, 1 ♂ ad., 1 ♀ juv. Shweli-Salwin Divide, 1 ♂, 2 ♀♀ ad., 1 ? juv. Mekong-Salwin Divide, 2 ♂♂ Tengyueh District, 3 ♂♂, 1 ♀ Lichiang Range.

In the 1925 collection are 2 ♂♂, 1 ♀ Shweli-Salwin Divide, 11,000 feet, July-Aug. 1925, 1 ♂ hills N.W. of Tengyueh, 10,000 feet, Nov. 1925. In the British Museum from the Styan collection are 4 ♂♂, 1 ♀ Yung Mochung, March 1903.

559. *Dicaeum chrysorrhoeum chrysochlore* Blyth.

Dicaeum chrysochlore Blyth, *Journ. As. Soc. Bengal*, vol. xii, p. 1009 (1843) (Arrakan).

La Touche records 1 ♀ Tachouang, Feb. 1921, 1 ♂, 1 ♀ Hokow, April 1921, under the name of *Dicaeum chrysorrhoeum*.

560. *Dicaeum minullum olivaceum* Wald.

Dicaeum olivaceum Walden, *Ann. Mag. Nat. Hist.* (4), xv, p. 401 (1875) (Toung-hoo).

Bangs & Phillips record 7 examples Mengtsz and Loukouchai, April-Oct.; Uchida & Kuroda list 3 ♂♂ Mengtsz, Oct.; Andrews & Heller obtained 1 ♀ Chang-lung, March 1917; La Touche collected 3 ♂♂, 4 ♀♀ Mengtsz, July and Oct. 1920 and March 1921, 2 ♂♂ Hokow, March-April 1921, 1 ♂ Loukouchai April 1921; Forrest sent 1 ? Mekong-Salwin Divide, 3 ♀♀, 1 ? Shweli-Salwin Divide, 2 ♂♂ Lichiang Range, 4 ♂♂, 3 ♀♀, 2 ? Tengyueh District.

In the 1925 collection are 1 ♀ Shweli-Salwin Divide, 11,000 feet, July 1925, 1 ♀ juv. hills N.W. of Tengyueh, 10,000 feet, Nov. 1925.

561. *Pachyglossa melanozantha* (Hodgs.).

Pachyglossa melanozantha Hodgson, *Journ. As. Soc. Bengal*, vol. xii, p. 1010 (1843) (Nepal).

La Touche collected 1 ♂, 1 ♀ Milati, Jan. 1921, 1 ♂, 1 ♀ Tachouang, Feb. 1921; Forrest sent 2 ♂♂ Mekong-Yangtze Divide, 1 ? Mekong-Salwin Divide, 3 ♂♂ Shweli-Salwin Divide, 5 ♂♂, 1 ♀ Lichiang Range.

562. *Aethopyga ignicauda exultans* Baker.

Aethopyga ignicauda exultans Stuart Baker, *Bull. B.O.C.*, vol. xlv, p. 13 (1925) (Shweli-Salwin Divide).

Andrews & Heller collected 1 ♂ imm. Yoakuan, Jan. 1917; Forrest sent 1 ♀ Tengyueh District, 3 ♂♂ Shweli-Salwin Divide, 2 ♂♂, 1 ♀ Mekong-Salwin

Divide, 1 ♂ Lichiang Range. Colonel Rippon obtained 1 example Chutung, Mareh 1902.

563. *Aethopyga siparaja viridicauda* Rothseh.

Aethopyga seheriae viridicauda Rothschild, *Nor. Zool.* vol. xxviii, p. 58 (1921) (Tengyueh).

Colonel Rippon obtained an example Salwin Valley, May 1906; Oustalet records this bird under the name of *seheriae tubecula* from Prince H. d'Orleans' collection; Forrest sent 5 ♂♂ Tengyueh District. In the British Museum also are 1 example Mongren, Mareh 1899, Captain Wingate; and 1 Yangpi-Talifu Road, Mareh 1902, Colonel Rippon.

564. *Aethopyga siparaja tonkinensis* Hart.

Aethopyga seheriae tonkinensis Hartert, *Bull. B.O.C.* vol. xxxviii, p. 7 (1917) (Yen Bai).

La Touche collected 14 ♂♂, 2 ♀♀ Hokow, Mareh-April 1921.

565. *Aethopyga dabryii* (Verr.).

Nectarinia dabryii Verreaux, *Rev. and Mag. Zool.* p. 173, pl. xv (1867) ("Nord de la Chine!").

Anderson procured 1 ♂ Ponsee, Mareh 1868; Captain Wingate obtained 1 ♂ Yunnan City, Feb. 1899; Bangs & Phillips record 28 examples Mengtsz, Feb.-Aug.; Andrews & Heller obtained 4 ♂♂ ad. Wan-tien, Ta-shui-tang, and Mucheng, Feb. and May 1917; La Touche collected 1 ♂ Tachouang, Mareh 1921, 10 ♂♂, 6 ♀♀ Mengtsz, Mareh-April 1921, 2 ♂♂ Loukouehai, April 1921, 3 ♂♂ Lotukow, May 1921; Forrest sent 24 ♂♂, 5 ♀♀ ad., 4 ♂♂ juv. Lichiang Range, 1 ♂ Shweli Valley, 4 ♂♂ Salwin Valley, 5 ♂♂, 1 ♀ Shweli-Salwin Divide, 4 ♂♂, 1 ♀ Mekong-Salwin Divide, 2 ♂♂, 2 ♀♀ ad. Tengyueh District. In the 1925 collection are 2 ♂♂ ad. hills N.W. of Tengyueh, 10,000 feet, Nov. 1925, 5 ♂♂ ad., 1 ♂ ad., 1 ♀ juv. Shweli-Salwin Divide, 11,000 feet, June-July 1925.

566. *Aethopyga saturata saturata* (Hodgs.).

Cinnyris saturata Hodgson, *Ind. Rev.* vol. ii, p. 273 (1837) (Nepal).

Forrest collected 1 ♂, 2 ♀♀ Tengyueh District.

567. *Aethopyga nipalensis nipalensis* (Hodgs.).

Cinnyris nipalensis Hodgson, *Ind. Rev.* vol. ii, p. 273 (1837) (Nepal).

Andrews & Heller collected 1 ♂, 1 ♀ ad. Mu-cheng and Chang-Lung Feb.-March 1917; Forrest sent 6 ♂♂, 4 ♀♀ Shweli-Salwin Divide, 6 ♂♂, 4 ♀♀ ad., 3 ♂♂ juv. Tengyueh District. In the 1925 collection are 8 ♂♂ ad. Shweli-Salwin Divide, 11,000 feet, July 1925.

568. *Aethopyga sanguinipectus sanguinipectus* Wald.

Aethopyga sanguinipecta Walden, *Ann. Mag. Nat. Hist.* (4), xv, p. 400 (1875) (Toung-hoo).

Captain Wingate obtained 1 ♂ Mōng-sen, Mareh 1899; Colonel Rippon collected one example Yangpi-Talifu Road, Mareh 1902; Bangs & Phillips record 13 specimens Loukouehai, Feb., and Asanzi, April; La Touche collected 1 ♂ Milati, Jan. 1921, 8 ♂♂, 3 ♀♀ Loukouehai, Jan. Mareh-April 1921. In the British Museum are 4 ♂♂ Yung-Mo-Chung, Feb. 1903, Styan coll.

569. *Arachnothera magna aurata* Blyth.

Arachnothera aurata Blyth, *Journ. As. Soc. Bengal*, vol. xxiv, p. 478 (1855) (Pegu).

In my second and fourth articles I listed this bird under *magna magna*, not having carefully measured the bill and because Forrest's 2 examples appeared to have rather well-defined black streaks on the upper side. In his 1925 collection he sent 2 more, which now have convinced me that Yunnan examples belong to the race *aurata*, which has the bill much larger.

Bangs & Phillips record 4 specimens Loukouchai, Feb.; Uchida & Kuroda list 3 ♂♂, 2 ♀♀ Loukouchai, Jan.-Feb.; La Touche collected 1 ♂, 2 ♀♀ Hokow, March 1921, 1 ♂ Loukouchai, April 1921; Forrest sent 1 ♂ Salween Valley, 1 ♂ Tangyueh District. In the 1925 collection are 1 ♂, 1 ♀ Shweh-Salwin Divide, 7,000 feet, Oct. 1924. Bill dark brown, feet orange-yellow, iris dark brown.

570. *Arachnothera longirostris sordida* La Touche.

Arachnothera longirostris sordida La Touche, *Bull. B.O.C.* vol. xlii, p. 32 (1921) (Hokow).

La Touche collected 1 ♂ Hokow, March 1921 (type).

571. *Dendronanthus indicus* (Gmel.).

Motacilla indica Gmelin, *Syst. Nat.* vol. i, p. 962 (1789) (India).

Ingram records 2 ♂♂ Mengtsh, May 1910; Bangs & Phillips enumerate 3 examples Mengtsh, May 1910; La Touche collected 1 ♂, 2 ♀♀ Mengtsh, Sept.-Oct. 1920; 1 ♂ Kopaotsun, May 1921; Forrest sent 1 ♀ Tengyueh Valley; M. & Madame Comby obtained 1 example.

[On the Pied Wagtails of the *alba-lugubris* group.

Stuart Baker tells us that Messrs. Lowe & Kinnear have come to the conclusion that Hartert was wrong in placing all the "Pied" and "White" Wagtails as subspecies of *alba*, and that there are two groups or "Formenkreise"; (1) *alba*, which never gets a black back in the breeding season, and (2) *lugubris*, which does acquire the black back. Mr. Baker remarks that this will clear up certain difficulties where two local races of these birds appear to overlap; and moreover he thinks *alba ocularis* will have to be separated as a third species. I feel that there is much still to be cleared up in the history and geographical distribution of these birds; but I certainly think the apparent overlapping of 2 forms in certain localities is by no means an infallible sign of specific as opposed to subspecific distinction, and to my mind, at present at all events, the weight of evidence is much more in favour of one "Formenkreis" (that of *alba* only), and NOT two or more. I shall therefore continue to treat them in this paper as all subspecies of *alba*.]

572. *Motacilla alba alboides* Hodgs.

Motacilla alboides Hodgson, *As. Res.* vol. xix, p. 191 (1836) (Nepal).

Motacilla hodysoni Blyth, *Ibis*, p. 49 (1865) (Nepal).

Oustalet records this among Prince H. d'Orleans' birds; Bangs & Phillips enumerate 3 examples Mengtsh, Sept.-Oct.; Andrews & Heller collected 1 ♀ ad. Yung-chang Fu, Jan. 1917; Monsieur Pichon obtained 3 specimens; M. & Madame Comby collected 2 examples; La Touche collected 4 ♂♂, 3 ♀♀ ad.,

1 ♀ juv. Mengtsh, Aug. and Oct.–Nov. 1920, 1 ♀ Loukouehai, April 1921, 1 ♂ Lotukow, May 1921; Forrest sent 4 ♂♂, 1 ♀ Lichiang Range, 2 ♂♂ ad., 1 ♂ juv. Tengyueh District, 1 ♂ Shweli–Salwin Divide.

573. *Motacilla alba leucopsis* Gould.

Motacilla leucopsis Gould, *Proc. Zool. Soc. London*, 1837, p. 78 (India).

Colonel Rippon collected 1 example Talifu Valley, Feb. 1906, 1 Yangtze Valley, March 1906, 1 Lichiang, April 1906; La Touche collected 2 ♂♂, 1 ♀ Mengtsh, Sept.–Oct. 1920; Forrest sent 1 ? Lichiang Range, 3 ♂♂, 2 ♀♀ Tengyueh Valley.

574. *Motacilla alba baicalensis* Swinh.

Motacilla baicalensis Swinhoe, *Proc. Zool. Soc. London*, 1871, p. 363 (Eastern Asia).

Forrest collected 1 ♂ Lichiang Range.

575. *Motacilla alba maderaspatensis* Gmel.

Motacilla maderaspatensis Gmelin, *Syst. Nat.* vol. i, p. 961 (1789) (India).

Anderson collected 1 example Tapeng, Feb. 1868, 1 Sanda, May 1868, 1 ♂, 1 ♀ Momien, May 1868.

576. *Motacilla alba ocularis* Swinh.

Motacilla ocularis Swinhoe, *Ibis*, 1860, p. 55 (Amoy).

Bangs & Phillips record 7 examples Mengtsh, Feb.–June; Uchida & Kuroda enumerate 5 ♂♂, 2 ♀♀ Mengtsh, Feb.–July; Andrews & Heller collected 1 ♂ ad. Yung-chang Fu, Jan. 1917; La Touche procured 2 ♂♂ ad., 1 ♂ juv. Mengtsh, Sept.–Nov. 1920, 1 ♂ Tachouang, March 1921.

577. *Motacilla cinerea caspica* (Gmel.).

Parus caspicus Gmelin, *Reise d. Russl.* vol. iii, p. 104, pl. xx, f. 2 (1774) (Caspian Sea).

Captain Wingate secured 1 ♂ ad. Yunnan City, Feb. 1899; Colonel Rippon collected 1 example Talifu Valley, Feb. 1906, 1 Lichiang, Sept. 1906; Bangs & Phillips record 6 examples Mengtsh, April–Nov.; Andrews & Heller obtained 1 ♂ imm. Yung-chang Fu, Jan. 1917; La Touche collected 2 ♂♂, 4 ♀♀, 1 ? Mengtsh, Sept.–Nov. 1920, 1 ♂ Hokow, Jan. 1921; Forrest sent 3 ♂♂, 3 ♀♀ ad., 1 ♀ juv. Lichiang Range, 1 ♀ Tengyueh Valley.

578. *Motacilla flava simillima* Hart.

Motacilla flava simillima Hartert, *Vög. palaërk. Faun.* vol. i, p. 289, No. 454 (1905) (Kamtschatka).

La Touche collected 1 ♀ Mengtsh, Oct. 1920; Forrest sent 2 ♂♂ Tengyueh District.

579. *Motacilla flava thunbergi* Billb.

Motacilla thunbergi Billb., *Syn. Favn. Scand.* vol. i, pt. ii, *Aves*, p. 50 (1828) (Lapland).

Anderson records 1 example Pensee, March 1868; Monsieur Pichon sent 1 specimen.

580. *Motacilla citreola citreola* Pall.

Motacilla citreola Pallas, *Reise Prov. Russ. Reich.* vol. iii, p. 696 (1776) (East Siberia).

Captain Wingate procured 1 ♂ ad. S.W. Yunnan, April 1899; Bangs & Phillips record 4 examples Mengtsz, April; La Touche collected 4 ♂♂, 1 ♀ Mengtsz, Oct.–Dec. 1920 and March–April 1921; Forrest sent 2 ♂♂ Tengyueh District, 2 ♀♀ Lichiang Range.

581. *Motacilla citreola calcarata* (Hodgs.).

Budytes calcaratus Hodgson, *As. Res.* vol. xix, p. 198 (1836) (Nepal).

Budytes citreoloïdes Gould, *Birds Asia*, vol. iv, pl. lxiv (1865) (Nepal).

Hartert in his *Vög. palaärk. Faun.* only mentioned *calcaratus* Brehm of 1866, which is a synonym of *M. flava flava* and moreover a *nomen nudum*. Stuart Baker, as far as I can find out, was the first to point out that *calcaratus* Hodgs. was the correct name for *citreoloïdes* Gould by reason of 29 years' priority.

Bangs & Phillips record 1 ♂ Mengtsz, March 1911; La Touche obtained 1 ♂ Mengtsz, Feb. 1921, 1 ♀ Yunnanfu, May 1921.

582. *Anthus hodgsoni yunnanensis* Uch. & Kur.

Anthus maculatus yunnanensis Uchida & Kuroda, *Annot. Zool. Jap.* vol. ii, p. 134, No. 2 (1916) (Mengtsz).

Stuart Baker separates the three pipits *hodgsoni* Richm., *berezowskii* Saruduy, and *yunnanensis* Uch. & Kur. from the "Formenkreis" *trivialis* and unites them to form a separate "Formenkreis" *hodgsoni*, on the ground that at least one of them is found breeding alongside a *trivialis* form. As we have not yet sufficiently cleared up the Central Asian and Chinese breeding birds, I shall for the time being adopt this nomenclature; always reserving the difficult question of how far overlapping between two birds in certain areas justifies them to be considered as species or still retained as subspecies.

Bangs & Phillips record 5 examples Mengtsz, Jan.–Nov.; Uchida & Kuroda enumerate 6 ♂♂, 2 ♀♀ Mengtsz, Jan.–Nov.; Andrews & Heller collected 1 ♂, 1 ♀ Yung-chang, Fu Jan. 1917; Monsieur Pichon sent 1 example; La Touche collected 5 ♂♂, 2 ? Mengtsz, Oct.–Dec. 1920 and Feb. 1921, 1 ♂ Milati, Jan. 1921, 1 ♂ Hokow, March 1921; Forrest sent 1 ♂ Salwin Valley, 2 ♂♂, 4 ♀♀ Tengyueh District, 9 ♂♂, 11 ♀♀ Lichiang Range. In the 1925 collection there is 1 ♂ Tengyueh Valley, 6,000 feet, Dec. 1925.

I consider the shorter bill of this race a somewhat doubtful distinction.

583. *Anthus richardi richardi* Vieill.

Anthus richardi Vieillot, *Nouv. Dict. d'Hist. Nat.* vol. xxvi, p. 491 (1818) (France).

Anderson procured an example at Muangla, May 1868, and 1 ♀ Momiën, June 1868; Bangs & Phillips record 3 examples Mengtsz, March and Oct.; La Touche collected 3 ♂♂, 1 ♀ Mengtsz, Sept.–Nov. 1920, 1 ♂ Milati, Sept. 1920, 1 ♀ Yunnanfu, May 1921; Forrest sent 2 ♂♂, 4 ♀♀ Tengyueh District; M. & Madame Comby sent 1 specimen.

584. *Anthus richardi striolatus* Blyth.

Anthus striolatus Blyth, *Journ. As. Soc. Bengal*, vol. xvi, p. 435 (1847) (Darjeeling).

Uchida & Kuroda record 2 ♂♂, 4 ♀♀ Mengtsz, March–Oct.

585. *Anthus cervinus* (Pall.).

Motacilla cervina Pallas, *Zoogr. Rosso-Asiat.* vol. i, p. 511 (1827) (Siberia).

Uchida & Kuroda record 1 ♂, 1 ♀ Mengtsh, April.

586. *Anthus roseatus* Blyth.

Anthus roseatus Blyth, *Journ. As. Soc. Bengal.* vol. xvi, p. 437 (1847) (Nepal).

Colonel Rippon secured 1 example Lichiang Valley, March 1906; Bangs & Phillips record 1 ♂, 1 ♀ Mengtsh, April; La Touche collected 3 ♂, 4 ♀♀ Mengtsh, Nov.-Dec. 1920 and Jan.-April 1921; Forrest sent 1 ♀ Salwin Valley, 1 ♂ Mekong Valley, 1 ♂, 1 ? Lichiang Range, 3 ♂♂, 2 ♀♀ Tengyueh District. In the 1925 collection are 1 ♀ Tengyueh Valley, 6,000 feet, Dec. 1925, 1 ♂ Shweli-Salwin Divide, 9,000 feet, Aug. 1925. In addition there are in the British Museum from Colonel Rippon 3 examples Talifu Valley, April 1902, 1 Chutung-Yangpi Road, March 1902, and 1 Gyi-dzin-Shán, April 1902.

587. *Anthus rufulus rufulus* Vieill.

Anthus rufulus Vieillot, *Nouv. Dict. d'Hist. Nat.* vol. xxvi, p. 494 (1818) (Bengal).

Ingram records 1 ♂, 2 ♀♀ Mengtsh, March-May 1910; Bangs & Phillips enumerate 5 specimens Mengtsh, March-Oct.; Anderson collected 1 example Muangla, May 1868; La Touche secured 4 ♂♂, 1 ♀ 3 ? ad., 1 ? juv. Mengtsh, July-Oct. 1920 and March 1921, 1 ♂ Milati, Sept. 1920, 1 ♀ Yunnanfu, May 1921; Forrest sent 1 ♂, 1 ♀ Tengyueh District. Colonel Rippon obtained 3 examples Talifu Valley, April 1902.

588. *Anthus spinoletta blakistoni* Swinh.

Anthus blakistoni Swinhoe, *Proc. Zool. Soc. London*, 1863, p. 90 (Yangtze River).

Colonel Rippon collected 1 example Talifu Valley, Feb. 1906; Forrest sent 1 ♀ Lichiang Range.

589. *Oreocorys sylvanus* (Blyth).

Heterura sylvana (Hodgson) Blyth, *Journ. As. Soc. Bengal.* vol. xvi, p. 556 (1845) (Nepal).

Bangs & Phillips record 1 ♂ ad. Mengtsh, June 1911; Uchida & Kuroda enumerate 1 ♂, 1 ♀ Mengtsh, June and Sept.; La Touche collected 2 ♂♂, 1 ♀ Mengtsh, July-Sept. 1920, 1 ♂ Shuitang, May 1921; Forrest sent 1 ♂ Mekong Valley, 1 ♂ Lichiang Range.

590. *Alauda arvensis coelivox* Swinh.

Alauda coelivox Swinhoe, *Zoologist*, p. 6724 (1859) (Amoy).

Ingram records 1 ♂ juv. Mengtsh; Bangs & Phillips enumerate 3 examples Mengtsh, April and Oct.; Monsieur Pichon sent 1 specimen; La Touche obtained 1 ♂ Milati, Sept. 1920, 1 ♂ Yunnanfu, May 1921.

In the British Museum are the following examples said by Stuart Baker to have been collected by Colonel Rippon: 5 Lichiang, April 1902, and March and April 1906, 4 Talifu Valley, April 1902, 1 hills nr. Chutung Valley, March 1902.

591. *Alauda arvensis intermedia* Swinh.

Alauda intermedia Swinhoe, *Proc. Zool. Soc. London*, 1863, p. 89 (Shanghai).

Forrest sent 1 ? Lichiang Range. In his 1925 collection is 1 ♀ Shweli-Salwin Divide, Aug. 1925.

592. *Alauda arvensis japonica* Temm. & Schleg.

Alauda japonica Temminck & Schlegel in Siebold, *Faun. Jap. Aves*, p. 87, pl. lvii (1848) (Japan).

Colonel Rippon collected 1 example Talifu, Feb. 1906, 1 Lichiang Valley, April 1906; Monsieur Pichon sent 3 examples; Forrest sent 5 ♂♂, 6 ♀♀ Lichiang Range.

593. *Melophus melanicterus* (Gmel.).

Fringilla melanicterus Gmelin, *Syst. Nat.* vol. i, pt. ii, p. 910 (1789) (Macao).

Ingram records 4 ♂♂, 2 ♀♀ ad., 4 ♂♂ juv. Mengtsz, April-July 1910; Captain Wingate obtained 1 ♂ imm. King Tung Ting, Upper Mekong River, March 1899, 1 ♂ Mōng-sen, March 1899; Bangs & Phillips record 25 specimens, Mengtsz, March-Aug., Loukouchai, Dec., Linan Fu, Feb., Shi-ping, Feb., Andrews & Heller procured 1 ♂ imm. Namting River, Feb. 1917; Monsieur Pichon sent 3 ♂♂; La Touche collected 11 ♂♂ ♀♀ Mengtsz, Oct. 1920, Milati, Sept. and Dec. 1920 and Jan.-Feb. 1921, Tachouang, March 1921, Loukouchai, April 1921; Forrest sent 2 ♂♂ hills north of Tali, 1 ♂ Lichiang Range, 1 ♀ ad., 1 ♂ juv. Salwin Valley, 6 ♂♂ ad. Shweli-Salwin Divide, 2 ♂♂, 2 ♀♀ ad., 1 ♂, 1 ♀ juv. Tengyueh District.

In the 1925 collection are 4 ♂♂, 1 ♀ hills N.W. of Tengyueh, 6,000 feet, May 1925.

Anderson collected 3 examples Pensee, April 1868, 1 Sanda, July 1868.

Colonel Rippon collected 3 examples Chutung-Shayang Road, March 1902 and 1906; 2 Yangpi Valley, April 1906; 1 Shayang-Yungchang Road, March 1906; 2 Yungchang-Salwin Road, March 1906; 1 Yangpi-Talifu Road, March 1902.

594. *Emberiza pusilla* Pall.

Emberiza pusilla Pallas, *Reise Prov. Russ. Reichs.* vol. iii, p. 697 (1776) (Daurian Alps).

Anderson records 2 examples Pensee, March-April 1868; Bangs & Phillips enumerate 10 examples Mengtsz, Jan.-Dec.; Andrews & Heller obtained 2 ♂♂, 1 ♀ Malipa and Yung-chang Fu, Jan. and March 1917; La Touche collected 7 ♂♂ ♀♀ Mengtsz, Nov.-Dec. 1920 and Feb. 1921, 1 ♂, 2 ♀♀ Milati, Jan.-Feb. 1921; Forrest sent 7 ♂♂, 9 ♀♀ Tengyueh District, 2 ♀♀, 1 ? Lichiang Range, 1 ♂ Tali Valley, 2 ♂♂ Shweli Valley.

In the 1925 collection is 1 ♂ hills round Tengyueh, 6,000 feet, July 1925. There are in the British Museum collected by Colonel Rippon 3 examples Chutung-Shayang Road, March and April 1902; 1 Lichiang, March 1906; 1 Gyi-dzin-Shán, March 1902; 1 Valley E. of Talifu, April 1902; 1 Shayang-Chutung Road, March 1902; 2 Talifu Valley, Feb. 1906; 1 Yangpi-Chutung Road, April 1902.

595. *Emberiza fucata fucata* Pall.

Emberiza fucata Pallas, *Reise Prov. Russ. Reichs.* vol. iii, p. 698 (1776) (Onon and Ingoda Rivers).

Forrest sent 2 ♂♂ Tengyueh District, 1 ♂ Shweli Valley.

596. *Emberiza fucata arcuata* Sharpe.

Emberiza arcuata Sharpe, *Cat. Birds Brit. Mus.* vol. xii, p. 494 (1888) (Himalayas).

Anderson obtained 2 ♂♂ Momiën, June 1868; Ingram enumerates 1 ♀ Mengtsh, June 1910; Colonel Rippon collected an example Yangpi-Chutung Road, April 1906; Bangs & Phillips record 2 examples Mengtsh, March-April; Monsieur Pichon obtained 2 specimens; M. & Madame Comby got 1 example; La Touche collected 1 ♂, 1 ♀ Mengtsh, Nov. 1920, 3 ♂♂, 1 ♀ Milati, Sept.-Dec. 1920 and Feb. 1921, 1 ♂ Yunnanfu, May 1921.

597. *Emberiza cia yunnanensis* Sharpe.

Emberiza yunnanensis Sharpe, *Bull. B.O.C.* vol. xiii, p. 12 (1902) (Gyi-dzin-Shán).

Colonel Rippon obtained 5 examples Talipu Valley, Feb. 1906, 4 Yangpi Valley, Feb. 1906, 2 Yangtze Big Bend, March 1906, 3 Lichiang Valley, March-April 1906; La Touche collected 1 ♂ Kopaotsum, May 1921, 6 ♂♂, 1 ♀ Lotukow, May 1921; Forrest sent 1 ♂ Mekong Valley, 1 ♀ juv. Mekong-Salwin Divide, 22 ♂♂, 4 ♀♀, 1 ? ad., 2 ♂♂, 1 ♀ juv. Lichiang Range. Colonel Rippon also obtained 6 examples Gyi-dzin-Shán, April 1902; 3 Chutung-Yangpi Valley, March 1902.

598. *Emberiza spodocephala spodocephala* Pall.

Emberiza spodocephala Pallas, *Reise Prov. Russ. Reichs.* vol. iii, p. 698 (1776) (Daurian Alps).

Oustalet records this species in his list of Prince H. d'Orleans' birds; La Touche collected 2 ♂♂ ad., 1 ♂ juv. Mengtsh, Nov. 1920.

In my first article I said Oustalet's record was an evident error and referred to the next form, but I have since had reason to believe that view to be erroneous.

599. *Emberiza spodocephala melanops* Blyth.

Emberiza melanops Blyth, *Journ. As. Soc. Bengal*, vol. xiv, p. 54 (1845) (Tippera).

Ingram records 1 ♂ juv., 1 ♀ ad. Mengtsh, April 1910; Bangs & Phillips enumerate 5 specimens Mengtsh, Jan.-Dec.; Andrews & Heller collected 2 ♂♂ Chang-lung, March 1917; La Touche obtained 3 ♂♂, 1 ♀, 1 ? Mengtsh, Oct.-Nov. 1920 and Jan.-Feb. 1921, 1 ♂ Milati, Jan. 1921, 1 ♂ Yunnanfu, May 1921; Forrest sent 1 ♂ Tali Range, 5 ♂♂ Lichiang Range. Colonel Rippon collected 4 examples Talipu Valley, April 1902; 1 Shayang-Chutung Road, March 1902; 1 Lichiang, April 1904.

600. *Emberiza elegans* Temm.

Emberiza elegans Temminck, *Pl. Col.* pl. 583 (1835) (Japan).

Captain Wingate procured 1 ♂ Ching-tung, March 1899; Colonel Rippon obtained 2 examples Yangtze Big Bend, March 1906, 4 Lichiang Valley, April 1906; Forrest sent 19 ♂♂, 3 ♀♀ Lichiang Range.

Colonel Rippon also collected 2 Gyi-dzin-Shán, April 1902; 1 Chutung-Yangpi Road, April 1902.

601. *Emberiza aureola* Pall.

Emberiza aureola Pallas, *Reise Prov. Russ. Reichs.* vol. ii, p. 711 (1773) (Irtysh).

Ingram records 1 ♂ Mengtsh, May 1910; Bangs & Phillips enumerate 3 examples Mengtsh, April–May; La Touche collected 2 ♂♂ Mengtsh, Oct. 1920, 1 ♀ Yunnanfu, May 1921.

In Forrest's 1921 collection is 1 ♂ hills N.W. of Tengyueh, 7,000 feet, June 1925. Bill bone-brown, basal half of upper-mandible darker; feet dark olive; iris brown.

602. *Emberiza rutila* Pall.

Emberiza rutila Pallas, *Reise Prov. Russ. Reichs.* vol. iii, p. 698 (1776) (Mongolia).

Bangs & Phillips record 3 examples Mengtsh, April, Loukouchai, Jan.; Uehida & Kuroda enumerate 1 ♂, 1 ♀ Mengtsh, April, 1 ♂ Louchouehai, Jan.; La Touche collected 2 ♂♂, 1 ♀ Mengtsh, Oct. 1920 and Jan.–April 1921, 1 ♀ Milati, Feb. 1921, 1 ♂ Poutontsing, April 1921.

603. *Emberiza tristrami* Swinh.

Emberiza tristrami Swinhoe, *Proc. Zool. Soc. London*, 1870, p. 441 (Amoy).

Laurente shot an example at Loukouchai, April 1921.

[Mr. Kinnear has very carefully examined the series of 194 examples in the Tring and British Museums of *Passer rutilans cinnamomeus* Gould, *P. r. debilis* Hart., and *P. r. intensior* Rothseh., and has come to the conclusion that *r. debilis* is indistinguishable from *cinnamomeus*, but that my *r. intensior* has darker ♀♀. I must say that with my few ♀♀ of both I am unable to follow this, but I find on the whole that fresh moulted ♂♂ examples of *r. intensior* are less yellow below than those of *r. cinnamomeus*. La Touche has gone further and described certain examples from S.E. Yunnan as *r. yunnanensis*, but gives as the distinguishing character the same as I gave for *r. intensior*; moreover, he makes both *r. intensior* and *r. yunnanensis* breed near Yunnanfu; this is quite impossible IF THE TWO ARE DISTINCT. I believe that they are the same, and that this form which I named *r. intensior* is very slightly different, if at all, from *r. cinnamomeus*. As, however, in spite of the large number examined, I consider the series available is not sufficient for a final decision, I shall for the present enumerate all the Yunnan examples except 1 under the heading of *r. intensior*.]

604. *Passer rutilans rutilans* (Temm.).

Fringilla rutilans Temminck, *Pl. Col.* vol. iii, p. 488 (1829) (Japan).

Monsieur Pichon sent 1 example (fide Menegaux).

605. *Passer rutilans intensior* Rothseh.

Passer rutilans intensior Rothschild, *Bull. B.O.C.* vol. xliii, p. 11 (1922) (Mekong Valley).

Anderson collected 4 ♂♂, 2 ♀♀ Momiin, May–June 1868 (recorded as *cinnamomeus*); Bangs & Phillips record 3 examples (as *cinnamomeus*) Mengtsh, April, Linan Fu, Feb.; Andrews & Heller obtained 1 ♂ ad. Lung-ling, Mareh 1917 (as *cinnamomeus*); Monsieur Pichon sent 2 specimens (recorded as *cinnamomeus*); La Touche collected 1 ♂, 1 ♀ Yunnanfu, May 1921, 1 ♂, 1 ♀ Kopaotsum, June 1921

(recorded as *intensior*), 2 ♂♂ Mengtsh, Oct. 1920, 1 ♀ Milati, Feb. 1921, 2 ♂♂, 1 ♀ Lotukow, May 1921, 1 ♂ Yunnanfu, May 1921 (recorded as *yunnanensis*); Forrest sent 1 ♂, 1 ♀ Shweli-Salwin Divide, 1 ♂ Mekong Valley, 1 ♀ Mekong-Salwin Divide, 5 ♂♂, 2 ♀♀ Lichiang Range, 5 ♂♂, 3 ♀♀ Tengyueh District.

In the 1925 collection are 3 ♂♂ hills N.W. of Tengyueh, 7,000 feet, July 1925.

Colonel Rippon collected 6 examples Chutung-Yangpi Road, March and April 1902; 1 Mekong-Yangchang Road, April 1906; 2 Gyi-dzin-Shán, Feb. and April 1902; 1 Yangpi Valley, Feb. 1906.

606. *Passer montanus malaccensis* Dubois.

Passer malaccensis Dubois, *Faun. Ill. Vert. Belge Ois.* vol. i, p. 572 (1885) (Malacca).

Dr. Hartert, as well as Stuart Baker, have pointed out that Indo-Malayan Peninsula Tree Sparrows must bear the name *malaccensis* Dubois; but I had not received any from Forrest, and so had no occasion to examine into this question. It now becomes evident that this is one of the few cases where Yunnan has received an emigrant from the South-West, whereas the bulk of the species have come in from the North-West. Anderson, Bangs, Menegaux, and La Touche, when recording Yunnan examples, have all attributed them to *m. montanus*, not being properly acquainted with this extremely difficult "Formenkreis."

Anderson obtained 3 examples Poncee, May 1868, 4 examples Momien, July 1868; Bangs & Phillips record 11 examples Mengtsh, April-Nov.; Andrews & Heller collected 1 ♂ ad. Yung-chang Fu, Jan. 1917; Monsieur Pichon sent 3 examples; La Touche collected 6 ad. and imm. ♂♂♀♀ Mengtsh, July-Oct.

607. *Montifringilla nemoricola nemoricola* (Hodgson).

Fringilla nemoricola Hodgson, *As. Res.* vol. xix, p. 158 (1836) (Nepal).

Forrest sent 6 ♀♀!! (sexed?) Lichiang Range.

608. *Fringilla montifringilla* Linn.

Fringilla montifringilla Linnaeus, *Syst. Nat.* edit. x, p. 179 (1758) (Europe).

Forrest sent 9 ♂♂, 5 ♀♀ ad., 2 ♂♂ juv.

609. *Loxia curvirostra himalayensis* Blyth.

Loxia himalayensis Blyth, *Journ. As. Soc. Bengal*, vol. xiii, p. 952 (1844) (Nepal).

Bangs & Phillips record 1 ♂ ad. Mengtsh, March 1911; Uchida & Kuroda enumerate 1 ♂ Mengtsh, March 1911; Forrest sent 6 ♂♂, 5 ♀♀ ad., 1 ♂, 1 ♀ juv. Lichiang Range.

610. *Procarduelis nipalensis intescicolor* Baker.

Procarduelis nipalensis intescicolor Stuart Baker, *Bull. B.O.C.* vol. xlv, p. 92 (1925) (Mekong-Salwin Divide).

Forrest sent 2 ♂♂, 2 ♀♀ ad. Mekong-Salwin Divide (1 ♂ type), 2 ♀♀, 4 ♀♀ Lichiang Range.

611. *Procarduelis rubescens saturator* Rothschild.

Procarduelis rubescens saturator Rothschild, *Bull. B.O.C.* vol. xliii, p. 12 (1922) (Lichiang Range).

Forrest sent 2 ♂♂ Shweli-Salwin Divide, 3 ♂♂, 5 ♀♀ ad., 1 ♂ juv. Lichiang Range.

612. *Propyrrhula subhimachala intensior* Rothsch.

Propyrrhula subhimachala intensior Rothschild, *Bull. B.O.C.* vol. xliii, p. 12 (1922) (Lichiang Range).

Colonel Rippon obtained 1 ♀ Lichiang Valley, April 1906, and 5 examples Gyi-dzin-Shán, April 1902; Forrest sent 2 ♀♀ Mekong-Salwin Divide, 2 ♂♂ ad., 2 ♂♂ jun., 1 ♂ juv., 1 ♀ ad. Lichiang Range (1 ♂ type).

613. *Haematospiza sipahi* (Hodgs.).

Corythus sipahi Hodgson, *As. Res.* vol. xix, p. 151 (1836) (Nepal).

Hartert adopted Gmelin's name of *indica* for this bird; but as the figure on which that name is founded shows a crest resembling that of a "Cardinal," he has now come round to the feeling shared by Stuart Baker and others that it is too doubtful and therefore *sipahi* Hodgs. should be used. In my article (Nov. Zool. vol. xxviii, 1921) on Forrest's first collection I followed Hartert and used *indica* Gmel. for the "Scarlet Finch," but in the fourth article (Nov. Zool. vol. xxxii, 1925) I have used Hodgson's name of *sipahi*. Forrest sent the following examples, 4 ♂♂ Shweli-Salwin Divide. In Forrest 1925 collection there are 4 ♂♂, 2 ♀♀ Shweli-Salwin Divide, 9,000-10,000 feet, June-Aug. 1925. Bill bone-brown, feet dark brown, iris brown.

The 2 ♀♀ appear to be greyer on the breast and more heavily marked, but they are worn summer birds, and my material all round of *sipahi* is too scanty to venture on separating a Chinese and an Indian race.

614. *Erythrina erythrina roseata* (Hodgs.).

Pyrrhuloxia roseata Hodgson, *Proc. Zool. Soc. London*, 1845, p. 36 (Nepal).

Colonel Rippon collected 2 examples Gyi-dzin-Shán, April 1902; Bangs & Phillips record 7 specimens Mengtshz, Feb.-April and Dec.; Monsieur Pichon obtained 1 ♂; La Touche collected 3 ♂♂ Milati, Dec. 1920 and Jan.-Feb. 1921, 4 ♂♂ ad., 1 ♂ imm., 1 ♂ var. Mengtshz, Feb.-March 1921; Forrest sent 3 ♂♂, 14 ♀♀ ad., 1 ♂ in ♀ plumage, 3 ♂♂ juv. Lichiang Range, 1 ♂ Shweli-Salwin Divide.

In the 1925 collection are 1 ♂ hills N. of Tengyueh, 9,000 feet, Nov. 1925, 1 ♀ Shweli-Salwin Divide, 9,000 feet; Aug. 1925. Colonel Rippon also collected 2 examples Shayang-Yungchang Road, April 1902; 1 Chutung-Yangpi Road, April 1906. In the British Museum are 11 ♂♂, 1 ♀ Yunnan, Styan coll.

615. *Erythrina vinacea* (Verr.).

Carpodacus vinacea Verreaux, *Nouv. Arch. Mus. Paris*, vol. vi, *Bull.* p. 39 (1870) (Mts. of Chinese Thibet).

Colonel Rippon obtained 3 ♂♂ on the Chutung-Yungchang Road, April 1902 and 1906; Forrest sent 1 ♂, 5 ♀♀ ad., 2 ♂♂ in ♀ plumage, Lichiang Range, 1 ♂, 1 ♀ Shweli-Salwin Divide, 1 ♀ Mekong-Salwin Divide. Colonel Rippon also collected 3 ♂♂ Gyi-dzin-Shán, April 1902.

616. *Erythrina ripponi* (Sharpe).

Propasser ripponi Sharpe, *Bull. B.O.C.* vol. xix, p. 11 (1902) (Gyi-dzin-Shán).

Colonel Rippon obtained several examples Gyi-dzin-Shán, April 1902; Forrest sent 13 ♂♂, 8 ♀♀, 2 ? ad., 1 ♂, 1 ♀ juv. Lichiang Range.

617. *Erythrina thura feminina* (Ripp.).

Propasser thura femininus Rippon, *Bull. B.O.C.* vol. xix, p. 31 (1906) (Yangtze River).

Colonel Rippon collected 3 examples (including the type) Yangtze Big Bend, March 1906, 1 Talifu, May 1906, 1 Shayang-Yungehang Road, April 1906; Forrest sent 17 ♂♂, 21 ♀♀, 8 ♂♂ juv. Lichiang Range.

618. *Erythrina trifasciata* (Verr.).

Carpodacus trifasciatus Verreaux, *Nouv. Arch. Mus. Paris*, vol. vi, *Bull.* p. 39 (1870) (Mts. of Chinese Thibet).

Forrest sent 2 ♂♂, 1 ♀ ad., 3 ♂♂ juv. Lichiang Range.

619. *Erythrina pulcherrima davidiana* (Milne-Edw.).

Carpodacus davidianus Milne-Edwards, *Nouv. Arch. Mus. Paris*, vol. i, *Bull.* p. 19 (1864) (N.E. China).

In my account of Forrest's second collection (*NOV. ZOOLOG.* vol. xxx, 1923), I recorded his birds as *pulcherrima pulcherrima* Moore, but on very carefully comparing them I have come to the conclusion they are nearest to *p. davidiana*, though not quite identical with northern birds. Now, however, another point has to be considered: Mr. Baker, in his new edition of the birds in the *Fauna of India* series, declares he finds it impossible to separate Dr. Sharpe's *Propasser waltoni* from *p. davidianus*: this to me is quite incredible. I have in the Tring Museum 3 ♂♂ and 1 ♀ of *waltoni*, and they are very much more different from *p. davidianus* than that bird is from *p. pulcherrima*. In the ♂♂ of both *p. pulcherrima* and *p. davidiana* the chin, throat, and underside are a livid pink washed with silver, whereas in *waltoni* the breast and abdomen are bright rose-colour, and the chin and throat deep salmon-rose almost as bright as in *erythrinus*; the ♀ of *waltoni* is much paler than either of the other forms. Dr. Hartert has declared that he cannot separate *p. pulcherrima* and *p. davidiana*, and I should feel inclined to agree with him, but undoubtedly specimens from China and the north have the outer edges of the inner secondaries much more whitish than in my 2 Sikkim birds; and this is most prominent in the ♀♀. Therefore for the present, while considering *davidiana* BARELY separable, I acknowledge three subspecies as follows:

Erythrina pulcherrima pulcherrima (Moore). More Western Himalayas.

Erythrina pulcherrima davidiana (Milne-Edw.). China and Mongolia.

Erythrina pulcherrima waltoni (Sharpe). Gyantse and probably whole of Thibet.

Colonel Rippon obtained 2 ♀♀ examples Lichiang Valley, March 1906, 1 Chutung-Yungehang Road, April 1906; Forrest sent 4 ♂♂, 7 ♀♀, 1? Lichiang Range.

Mr. Kinnear remarks that "in the British Museum series the forms are not so easily distinguished as I make out." I can only say that I have recorded above what my series at Tring reveals.

[On the Rose Finches hitherto included in the "Formenkreis" of *rubicilla*.

Dr. Hartert in his *Vög. paläarkt. Faun.* has united as subspecies of *rubicilla* the following forms: *rubicilla* Gildenst.; *severtzovi* Sharpe; and *rubicilloides* Przew. In the *Ibis* for 1922 Mr. Kinnear in his paper on the birds collected on

the first Mr. Everest expedition treats *severtzovi* and *rubicilloides* as two species, saying under *severtzovi* that, as the two occur in the same areas during the breeding season, they cannot be subspecies, but he does not mention the Caucasus *rubicilla* at all. In March 1926 appeared Mr. Baker's third volume, in which he treats *rubicilloides* as a subspecies of *rubicilla* and *severtzovi* as a distinct species. He remarks that in Ladak all the eggs actually taken have been *rubicilloides*, while from Tibet he had received eggs accompanied by the skins of both taken on the same date. In the Everest account Mr. Kinnear states that Colonels Bailey and Steen obtained nests of *severtzovi* near Gyantse, and Colonel Walton obtained specimens of *rubicilloides* in S. Tibet in December, April, and May, and said its distribution coincided with that of *severtzovi*. In March 1926 also Colonel and Mrs. Meinertzhagen published in the *Bull. B.O.C.* descriptions of two new forms of these Rose Finches, naming the South Tibetan bird *lucifer* and the Ladak and Gyantse bird *lapersonnei*. Now these Rose Finches fall into two sections: (1) with almost unstriped upperside, *rubicilla* and *severtzovi*, and (2) with heavily striped upperside, *rubicilloides*, *lucifer*, and *lapersonnei*. Therefore Mr. Baker's treatment of the group is at once ruled out, for if we divide these 5 forms into two species *rubicilla* and *severtzovi* must form one species and the remaining three the second, NOT *rubicilla* and the three eastern birds one and *severtzovi* the other; this appears from the above quoted articles to be the view taken by Col. and Mrs. Meinertzhagen and Mr. Kinnear. I must here draw attention to the fact that most of the Rose Finches breed in June and July, so that the fact that Colonels Walton, Bailey, and Steen met with both *severtzovi* and *lapersonnei* in April and May near Gyantze is not a valid proof of their both breeding there, as one of them might well still be on migration; so that there only remains of the older records that of Stuart Baker, who states that he received eggs and skins of both, taken on the same day. Now, since this statement of Mr. Baker's, Mr. Hartert received a letter from Colonel Meinertzhagen dated August 22, 1926, with the following information:

"I think *Carpodacus rubicilla* and *rubicilloides* must be treated as separate species, at any rate for the present. They both breed in Ladak, but never occur together. *Rubicilla* occurs only in very desolate places, and is in fact a desert bird. *Rubicilloides* always occurs where there is a certain amount of cultivation or bushes. Their relation to each other is much the same as *Corvus corax laurencei* and *ruficollis* in Palestine, and I expect when more is known it will be found the two rose-finches are but one species, as they are typical of geographical variation."

I do not agree with Colonel Meinertzhagen that the fact that both breed in Ladak necessitates us treating them as two species for the present; but I shall do so in this paper for the reason that before definitely uniting the two as one species with five or more subspecies, we must consider a new category of subspecies in addition to the one at present in use, viz. Geographical Subspecies, and that is the one in use in Botany, namely, "Standortsrasse oder Variation" = Topographical Subspecies. Therefore we have at present the following forms:

- Erythrina rubicilla rubicilla.***
- Erythrina rubicilla severtzovi.***
- Erythrina rubicilloides rubicilloides.***
- Erythrina rubicilloides lucifer.***
- Erythrina rubicilloides lapersonnei.***

If my view were adopted, however, they would all be subspecies of

rubicilla, and while *r. severtzovi* and *r. lapersonnei* would be considered Topographical Subspecies, the other three races would be ordinary Subspecies = Geographical Races.]

620. **Erythrina rubicilloides rubicilloides** (Przev.).

Carpodacus rubicilloides Przevalsky, *Mongoli Strana Tangut*, vol. ii, p. 90, pl. xii (1876) (Kansu).

The 2 ♀♀ obtained by Forrest are darker above than Kansu ♀♀ and therefore may prove to belong to a sixth *rubicilla* form, but until a series of both ♂♂ and ♀♀ can be compared it would be unwise to describe them as new. Forrest sent 2 ♀♀ Lichiang Range.

621. **Erythrina edwardsi saturatus** (Blanf.).

Carpodacus saturatus Blanford, *Journ. As. Soc. Bengal*, vol. xli, pt. ii, p. 168, pl. viii (1872) (Tonglu).

The adult ♂ is much darker than any of my Chinese birds, and is even darker than any from Nepal and Sikkim I possess, so it may prove to be a third race when more Yunnan material comes to hand.

Forrest sent 1 ♂ ad. Mekong-Salwin Divide, 1 ♂ (in ♀ plumage) Lichiang Range; Andrews & Heller collected 1 ♂ (in ♀ plumage) Tai-ping-pu, April 1917.

622. **Pyrrhula erythaca altera** Ripp.

Pyrrhula altera Rippon, *Bull. B.O.C.* vol. xix, p. 19 (1906) (Shayang).

Colonel Rippon collected 2 ♂♂, 1 ♀ Shayang-Chutung Road, Jan. 1906, 1 ♀ Yangpi-Chutung Road, March 1906; Andrews & Heller obtained 1 ♂ ad. Lichiang Mts., Nov. 1916; Forrest sent 1 ♂, 1 ♀ Mekong-Salwin Divide, 14 ♂♂, 17 ♀♀ ad., 5 ♂♂ juv. Lichiang Range.

623. **Pyrrhula nipalensis ricketti** La Touche.

Pyrrhula ricketti La Touche, *Bull. B.O.C.* vol. xvi, p. 21 (1905) (Mts. of N.W. Fokien).

Forrest sent 1 ♂, 1 ♀ Tengyueh District.

In the 1925 collection are 2 ♂♂, 2 ♀♀ (1 ♂ and 1 ♀ have the sex reversed on label) Shweli-Salwin Divide, 10,000-11,000 feet, June-July 1925.

624. **Pyrrhoptectes epauletta** (Hodgs.).

Pyrrhula ? epauletta Hodgson, *As. Res.* vol. xix, p. 156 (1836) (N. and C. Nepal).

Forrest sent 2 ♂♂ Shweli-Salwin Divide.

In the 1925 collection are 1 ♂, 1 ♀ Shweli-Salwin Divide, 9,000-10,000 feet, Aug. 1925.

625. **Uragus sibiricus lepidus** Dav. & Oust.

Uragus lepidus David & Oustalet, *Ois. Chine*, p. 359, pl. xeviii (1877) (Tsinling Shensi).

Forrest sent 1 ♀ Mekong Valley.

626. **Carduelis thibetanus** (Hume).

Chrysomitris thibetana Hume, *Ibis*, p. 107 (1872) (Borders of Sikkim and Thibet).

Forrest sent 1 ♂ Lichiang Range.

627. *Carduelis ambiguus* (Oust.).

Chrysomitris ambiguus Oustalet, *Bull. Mus. d'Hist. Nat. Paris*, p. 186 (1896) Yunnan).

Colonel Rippon obtained 5 ♂♂, 4 ♀♀ Lichiang, March 1906, 1 ♀ Chutung-Yungehang Road, April 1906, 1 Lichiang Valley, April 1906; Oustalet records 1 ♀ Menning, May 1895, from the collections of Prince H. d'Orleans; Bangs and Phillips record 10 examples Mengtsz, Jan.-March and Dec. under the genus *Spinus*; Andrews & Heller collected 2 ♂♂ Yung-chang Fu, Jan. 1917; La Touche procured 5 ♂♂ Mengtsz, Sept.-Nov. 1920, 7 ♂♂, 8 ♀♀ Milati, Dec. 1920 and Jan.-March 1921, 1 ♂ Loshuitang, Feb. 1921, 1 ♂ Lotukow, May 1921, 1 ♂ Yunnanfu, May 1921; Forrest sent 7 ♂♂, 1 ♀ Shweli Valley, 5 ♂♂ Shweli-Salwin Divide, 14 ♂♂, 6 ♀♀ ad., 1 ♀ juv. Lichiang Range, 1 ♂ ad. Tengyueh District.

In the 1925 collection are contained 3 ♂♂ hills N.W. of Tengyueh, 7,000 feet, June 1925. Bill bone-grey, feet light brown, iris brown.

Colonel Rippon also collected 4 ♂♂, 3 ♀♀ Gyi-dzin-Shán, April 1902; 2 ♂♂, 2 ♀♀ Yangpi-Chutung Road, March-April 1902; 4 ♀♀ Shayang-Chutung Road, April-May, 1902; 1 ♂ Yongchangpi Lenshwayi, May 1902; 1 ♂ Tungehang-Perpeas Road, Feb. 1902.

[On the genus *Eophona*.

The genus *Eophona* appears in literature for the first time in 1851 in *The Birds of Asia*, part iii, by John Gould, but he gives no description of the genus, or generic characters. He figures the two species *personatus* Temm. & Schleg., and *melanura* Gm., and as *personatus* is pl. 18 and *melanura* pl. 19 we must accept *personatus* as the type. From 1851 to 1896 there was no question as to the two birds, and in the various publications concerning them the only point was that some authors treated of them under *Coccothraustes*, while others employed Gould's *Eophona*. In 1903 Dr. E. Hartert in his *Vögel der paläarktischen Fauna* gave the following diagnosis of the genus *Eophona*: "Very close to the genus *Coccothraustes*, the bill being almost similarly constructed, but the ends of the inner primaries normal, the tail much longer and deeply forked, and the sexes more differentiated."

In 1896 Hartert separated the large heavy-billed East Siberian breeding race of *personatus* under the name of *personatus magnirostris* (*Bull. B.O.C.* vol. v, p. xxxviii, Amur Bay); in 1903, in his above-mentioned book, he further separated the East Siberian breeding race of *melanura* Gm. as *melanura migratoria* (vol. i, p. 59, Sidemi). Since then J. H. Riley has separated an *Eophona melanura soverbyi* (*Proc. Biol. Soc. Wash.* vol. xxxviii, p. 163, 1915, Chang Kow Hsien), and gives as distinguishing characters from *m. melanura* the much paler grey colour of the body, less intense black of wings, tail, and head and larger size (wing 107 as against 102 ♂♂ and 104 against 101 ♀♀), the bill being intermediate between *melanura* and *migratoria*. In 1919 Thomas Edward Penard (*Proc. New Engl. Zool. Club*, vol. vii, p. 22) points out that the name *Eophona melanura melanura*, based on Gmelin's *Loxia melanura* of 1789, is invalidated by P. L. S. Müller's *Loxia melanura* of 1776, and that therefore the name of the species automatically became *Eophona migratoria migratoria* Hart., and Gmelin's *melanura* required a new name; he therefore erected for *Eophona melanura melanura* (Gm.) the name *Eophona migratoria pulla* nom. nov. Finally, in 1923, La Touche separated the Yunnan bird as *Eophona migratoria harterti* (*Bull.*

B.O.C. vol. xliii, p. 150, Mengtz and Milati). He gave as difference the smaller bill and darker upper-surface. Thus at present we have the following status of the genus *Eophona*, its species and subspecies :

Eophona personata personata (Temm. & Schleg.).

E. personata magnirostris Hart.

Eophona migratoria migratoria Hart.

E. migratoria sowerbyi Riley.

E. migratoria harterti La Touche.

E. migratoria pulla Pen.

Of the two *personata* races nothing is to be said ; they are well differentiated, and there are no complications. But in regard to the four races separated of *migratoria* matters are less easy to define. First of all we will consider Riley's *sowerbyi* ; he gives the wing of his ♂ as 107.5, and of his ♀ 104. Among my ♂♂ are 2 of *m. pulla* with wings 108 from Shanghai, one of which is pale above and below, and has the lower fourth of the rump white, while the other is dark above and below, and has the rump uniform grey ; then I have a ♂ from Hupeh, with a wing measure of 107.5, and this bird is very dark all over. The culmen of the 2 Shanghai ♂♂ is 23.5 and 24, while that of the Hupeh bird is 22.5 ; I therefore think it very doubtful if this form can be separated from *E. m. pulla* ; only very large fresh series of breeding birds from Hupeh and the rest of the ranges of both forms can finally settle the question. In regard to La Touche's *E. m. harterti* the case is analogous ; the size of the bill in my 2 Yunnan birds is quite similar to the type of *m. migratoria*, viz. culmen type of *migratoria* and 4 other ♂♂ 18.5, 20, 21, 21.5 ; and the ♂ and ♀ from Yunnan 21.5, 21.5. In colour the 2 Yunnan birds are slightly darker, but here again series and breeding series are required. I shall for the present treat all the records for Yunnan under the heading of *Eophona migratoria harterti* La Touche, and await further fresh material.]

628. ***Eophona migratoria harterti*** La Touche.

Eophona migratoria harterti La Touche, *Bull. B.O.C.* vol. xliii, p. 150 (1923) (Mengtze and Milati).

Captain Wingate got 1 ♀ ad. E. Yunnan, Feb. 1899 ; Bangs & Phillips record 5 specimens Linan Fu, Feb. ; Andrews & Heller obtained 1 ♀ Yung-chang Fu, Jan. 1917 ; Forrest collected 1 ♂, 1 ♀ ad., 1 ♂ juv. Tengyueh District ; M. & Mme. Comby procured an *Eophona* recorded by Menegaux & Didier under the name *dejeani* Oust. !

Mr. Berlioz of the Paris Museum tells me it is this species 1 ♀ imm. Yunnan, July 1910.

629. ***Perissospiza icteroides affinis*** (Blyth).

Hesperophona affinis Blyth, *Journ. As. Soc. Bengal*, vol. xxiv, p. 179 (1855) (Sikkim).

Forrest sent 11 ♂♂, 3 ♀♀ Lichiang Range ; Oustalet records this bird under the genus *Pycnorhamphus* among Prince H. d'Orleans' collections.

630. ***Mycerobas carnipes carnipes*** (Hodgs.).

Coccolhraustes carnipes Hodgson, *As. Res.* vol. xix, p. 151 (1836) (Nepal).

Among the birds from Sikkim are a large number with very small bills ; in fact, there is as much variation in the size of the bill in *carnipes* as between *Eophona*

personata personata (Temm. & Schleg.) and *E. personata magnirostris* Hart., but hitherto it has been impossible to tie down those with small or large bills to any given locality; and so we cannot separate them into subspecies as yet.

Colonel Rippon collected 1 ♀ example at Yangtze Big Bend, March 1906; Forrest sent 1 ♂, 8 ♀♀ ad., 2 ♂♂ juv., 4 ♂♂, 2 ♀♀ juv. Mekong-Salwin Divide.

631. *Mycerobas melanozanthus* (Hodgs.).

Coccothraustes melanozanthus Hodgson, *As. Res.* vol. xix, p. 150 (1836) (Himalayas).

Forrest sent 5 ♂♂, 2 ♀♀ ad., 1 ♂ juv. Lichiang Range, 1 ♂ juv. Tengyueh District.

In the 1925 collection is 1 ♂ ad. Shweli-Salwin Divide, 11,000 feet, June 1925.

632. *Munia atricapilla rubronigra* Hodgs.

Munia rubronigra Hodgson, *As. Res.* vol. xix, p. 153 (1836) (Nepal).

In my former articles I recorded this bird as *atricapilla atricapilla*, and I am not yet certain if an examination of very large material may not prove *a. atricapilla* and *a. rubronigra* to be inseparable. Meanwhile I shall follow Mr. Baker and keep them separate.

Anderson records 5 examples Muangla, July 1868; Forrest sent 6 ♂♂ Shweli Valley, 2 ♂♂ Shweli-Salwin Divide. In the 1925 collection is 1 ♂ Shweli-Salwin Divide, 8,000 feet, Aug. 1925.

633. *Munia punctulata topela* Swinh.

Munia topela Swinhoe, *Ibis*, 1863, p. 380 (1863) (Amoy).

In my article on Forrest's first collection I inadvertently stated Swinhoe's type locality to be Formosa, while it really is Amoy. Ingram records 2 ♂♂, 1 ♀ ad., 1 ♀ juv. Mengtze, April-May 1910; Bangs & Phillips enumerated 14 specimens Mengtze, Jan.-Nov. Loukouchai, Dec.; Andrews & Heller collected 1 ♀ imm. Nanting River, Feb. 1917; Anderson obtained 1 ♂ Momiën, June 1868; La Touche procured 15 examples Mengtze, Aug.-Oct. 1920; Forrest sent 8 ♂♂ ad., 1 ♂ juv. Shweli-Salwin Divide, 2 ♂♂ juv. Nantien Valley, 4 ♂♂, 14 ♀♀, 5 ? ad., 4 ♂♂, 1 ♀ juv. Tengyueh District.

In the 1925 collection are 1 ♂, 1 ♀ (sexed ♂) ad. Shweli-Salwin Divide, 10,000 feet, Aug. 1925, 1 ♂ ad. hills round Tengyueh, 7,000 feet, July 1925.

634. *Munia striata subsquamicollis* (Baker).

Uroloncha striata subsquamicollis Stuart Baker, *Bull. B.O.C.* vol. xlv, p. 59 (1925) (Bankasoor).

As Oustalet, Menegaux & Didier, and La Touche had identified their birds as *acuticauda* I was about to do so also, but as Mr. Baker has come to the conclusion that Yunnan birds are his *subsquamicollis* I must also record them under that name till I can get a series of fresh Yunnan examples to compare for myself.

Oustalet records this bird among those collected by Prince H. d'Orleans; Monsieur Pichon sent 1 example; La Touche collected 2 ♂♂, 1 ♀ Hokow, March 1921.

635. *Amandava amandava amandava* (Linn.).

Fringilla omandava Linnaeus, *Syst. Nat.*, edit. xii, vol. i, p. 319 (1766) (Calcutta).

When recording the following form in my former articles I used the genus *Sporaeginthus* in the belief that *Amandava* was first erected by Reichenbach in 1861, but Stuart Baker points out that Blyth was its real author in 1836, so that it antedates *Sporaeginthus* (of 1850) by 14 years.

Captain Wingate obtained an example S.W. Yunnan, and a second Mōng-kou, both April 1899.

636. *Amandava amandava flaviventris* (Wall.)

Estrelia flaviventris Wallace, *Proc. Zool. Soc. London*, 1863, p. 495 (Timor and Flores).

Stuart Baker declares that as there are no connecting links known between this and the previous form he considers them two distinct species; but till I get evidence that their breeding ranges overlap I prefer to treat them as two subspecies of *amandava*.

Ingram records 1 ♂ ad. Mengtsh, July 1910; Anderson obtained 1 example Muangla, May 1868, 2 ♂♂ Momien, June–July 1868; Bangs & Phillips enumerate 10 specimens Mengtsh, March–July, Loukouchai June; La Touche says a flock was seen at Milati Sept. 1920; Forrest sent 1 ♂ Tengyueh District, 1 ♀ Tali.

637. *Ploceus manyar peguensis* Baker.

Ploceus manyar peguensis Stuart Baker, *Bull. B.O.C.*, vol. xiv, p. 58 (1925) (Pegu).

Stuart Baker in his original description says this bird occurs in Yunnan. There is no example in the British Museum labelled Yunnan.

638. *Oriolus chinensis indicus* Jerd.

Oriolus indicus Jerdon, *Ill. Ind. Orn.*, pl. xv (1847) (Malabar).

Ingram records 1 ♂, 1 ♀ Mengtsh, April–May 1910; Bangs & Phillips enumerate 7 examples Mengtsh, April–May and Sept.–Oct.; La Touche collected 1 ♂, 2 ♀♀ ad., 1 ♂, 2 ♀♀ juv. Mengtsh, Sept.–Oct. 1920 and April–May 1921.

639. *Oriolus chinensis tenuirostris* Blyth.

Oriolus tenuirostris Blyth, *Journ. As. Soc. Bengal*, vol. xv, p. 48 (1846) (Central India).

Captain Wingate obtained 1 example near Yunnan City, East Yunnan, Jan. 1899; Colonel Rippon collected 2 specimens Lichiang Valley, April 1906; Andrews & Heller procured 1 example (♂ in ♀ plumage) Yung-chang, Jan. 1917; Forrest sent 1 ♂ ad. Shweli–Salwin Divide, 1 ♀ juv. T'ong Shán, 3 ♂♂, 1 ♀ ad. Tengyueh District, 4 ♂♂, 2 ♀♀ ad., 7 ♂♂ juv., 1 pull. Lichiang Range. In the 1925 collection is 1 ♂ ad. Tengyueh Valley, 7,000 feet, Dec. 1925. Bill flesh-brown, feet black, iris crimson.

640. *Oriolus traillii* (Vig.).

Pastor traillii Vigors, *Proc. Zool. Soc. London*, 183, p. 175 (Darjeeling).

Oustalet records the Maroon Oriole among Prince H. d'Orleans' collections; Forrest sent 1 ♂ juv. Lichiang Range, 1 ♀ Tengyueh District.

In the 1925 collection is 1 ♂ juv. hills N.W. of Tengyueh, 9,000 feet, Oct. 1925.

641. *Chibia hottentotta hottentotta* (Linn.).

Corvus hottentottus Linnaeus, *Syst. Nat.* edit. xii, vol. i, p. 155 (1766) (Sikkim).

Ingram records 2 ♂♂ Mengtsh, July 1910; Captain Wingate obtained 1 ? ad. Mansee, April 1899; Andrews & Heller collected 1 ♂ ad. Chang-lung, March 1917; La Touche collected 1 ♂ ad. Mengtsh, April 1921; Forrest sent 1 ♂ Yangtze Valley, 2 ♂♂ Tengyueh District.

In the 1925 collection are 2 ♂♂, 1 ♀ hills round Tengyueh, 6,000 feet, Oct. 1925, 1 ♀ Shweli-Salwin Divide, 7,000 feet, July 1925.

642. *Chibia hottentotta brevisrostris* Cab. & Heine.

Chibia brevisrostris Cabanis and Heine, *Mus. Hein.* vol. i, p. 112 (1850) (China).

Bangs & Phillips record 3 specimens Mengtsh, Sept.-Oct.; La Touche collected 1 ♂ ad., 4 ♂♂, 1 ♀ juv. Mengtsh, Oct. 1920.

643. *Chaptia aenea aenea* (Vieill.).

Dicurus aeneus Vieillot, *Nouv. Dict. d'Hist. Nat.* vol. ix, p. 586 (1917) (Bengal).

Anderson collected 1 example Pensee, March 1868; Forrest sent 2 ♂♂, 2 ♀♀, 1 ? Tengyueh District.

In the 1925 collection are 4 ♂♂, 2 ♀♀ hills N.W. of Tengyueh, 8,000 feet, Sept. 1925.

644. *Bhringa remifer tectirostris* Hodgs.

Bhringa tectirostris Hodgson, *Ind. Rev.* vol. i, p. 325 (1837) (E. Nepal).

Anderson collected 1 ♂ Pensee, April 1868; Captain Wingate obtained 1 ? ad. S.W. Yunnan, April 1899; Forrest sent 1 ♂ Tengyueh District.

645. *Dicurus macrocerus cathoecus* Swinh.

Dicurus cathoecus Swinhoe, *Proc. Zool. Soc. London*, 1871, p. 377 (China).

Anderson collected 1 ♂ Sanda, 1 ♀ Muangla, May 1868; Bangs & Phillips record 21 examples Mengtsh, April-Oct.; Monsieur Pichon sent 2 specimens; La Touche collected 2 ♂♂, 2 ♀♀ ad., 6 ♂♂♀♀ juv. Mengtsh, July-Dec. 1920 and April 1921; Forrest sent 2 ♂♂, 1 ♀ ad., 1 ♂, 1 ♀, 2 ? juv. Tengyueh District; Captain Wingate collected 1 ♂ ad. Ching-tung, March 1899.

In the 1925 collection are 1 ♂, 1 ♀ ad. hills S. of Tengyueh, 7,000 feet, May 1925, 1 ♀ juv. hills round Tengyueh, 6,000 feet, Oct. 1925.

646. *Dicurus leucophaeus nigrescens* Oates.

Dicurus nigrescens Oates, *Hume's Nests and Eggs Ind. Birds*, 2nd edit. vol. i, p. 208 (1889) (Rangoon).

Ingram records 4 ♂♂ Mengtsh, May-June 1910; Captain Wingate secured 1 ♂ ad. Ching-tung, March 1899; Bangs & Phillips record 12 examples Mengtsh, Jan.-March, Shi-ping, Feb.-March; Andrews & Heller collected 3 ♂♂ ad. Yung-Chang and Chang-lung, Jan. & March 1917; La Touche secured 5 ♂♂, 4 ♀♀ Mengtsh, Oct.-March, 1 ♀ Hokow, Jan. 1921; Forrest sent 1 ♂ Tali Valley, 4 ♂♂, 1 ♀ Shweli Valley, 2 ♂♂, 2 ♀♀, 1 ? Lichiang Range, 3 ♂♂, 2 ♀♀, 1 ? Tengyueh District. In the 1925 collection there are 1 ♂, 1 ♀ hills S. of Tengyueh, 5,000-7,000 feet, May-June 1925, 1 ♀ Tengyueh Valley, 6,000 feet, Oct. 1925.

647. *Dicrurus leucophaeus hopwoodi* Baker.

Dicrurus leucophaeus hopwoodi Stuart Baker, *Nor. Zool.* vol. xxv, p. 294 (1918) (Dacca).

Anderson records under the name of *Buchanga longicaudata* Hay, 2 ♂♂ Muangla and 2 ♂♂ Momien, May 1868.

648. *Dicrurus leucogenys leucogenys* (Wald.).

Buchanga leucogenys Walden, *Ann. Mag. Nat. Hist.* (4), v, p. 219 (1870) (China).

Bangs & Phillips record 4 examples Mengtsz, Oct. 1910; Uchida & Kuroda enumerate 1 ♂, 1 ♀ Mengtsz, Oct.; La Touche collected 1 ♂ ad., 3 ♂♂, 1 ♀ imm. Mengtsz, Sept.-Oct. 1920.

649. *Sturnia sinensis* (Gmel.).

Oriolus sinensis Gmelin, *Syst. Nat.* vol. i, p. 394, No. 50 (1788) (China).

La Touche collected 2 ♂♂ Mengtsz, July-Aug. 1920, 1 ♀ Hokow, April 1921; M. & Madame Comby obtained 1 ♂.

Apparently Stuart Baker rejects the name *sinensis* Gmel. because of *chinensis* Linn. (both described in the genus *Oriolus*), but although they have undoubtedly the same meaning I do not consider them homonyms and therefore retain *sinensis*.

650. *Sturnia sericea* (Gmel.).

Sturnus sericeus Gmelin, *Syst. Nat.* vol. i, p. 805 (1788) (China).

Bangs & Phillips record 1 ♂ Linan Fu, Feb. 1911; Uchida & Kuroda enumerate 1 ♂ Linan Fu, Feb. 1911.

651. *Sturnia malabarica malabarica* (Gmel.).

Turdus malabaricus Gmelin, *Syst. Nat.* vol. i, p. 816 (1789) (Malabar).

Anderson collected 2 ♂♂ Muangla, May 1868; Captain Wingate obtained 1 ♂, 1 ♀ ad. Wei-yüan, March 1899, 1 ♂, 1 ♀ ad. S.W. Yunnan, April 1899; Monsieur Pichon sent 1 specimen Salwin Valley.

652. *Sturnia malabarica nemoricola* Jerd.

Sturnia nemoricola Jerdon, *Ibis*, 1862, p. 22 (Thayetmyo).

Ingram records 3 ♂♂ Mengtsz, April-June 1910; Bangs & Phillips enumerate 12 examples Mengtsz, April-Oct. 1910; Andrews & Heller collected 2 ♀♀ Namting and Chang-lung Feb.-March 1917; Forrest sent 1 ♀ Shweli-Salwin Divide, 1 ♀ Tali Valley, 2 ♂♂, 1 ♀ Lichiang Range.

653. *Acridotheres tristis tristis* (Linn.).

Paradisea tristis Linnaeus, *Syst. Nat.* edit. xii, vol. i, p. 167 (1766) (Philippines !! loc. cmend. Calcutta).

Anderson obtained 1 example Manwyne, May 1868; Captain Wingate collected 1 ♂ ad. Möng-sen, March 1899; Andrews & Heller procured 1 ♂, 1 ♀ ad. Shih-tien, Jan. 1917; Monsieur Pichon sent 2 specimens; Forrest collected 1 ♀ Tengyueh District, 1 ? Lichiang Range.

654. *Acridotheres grandis grandis* Moore.

Acridotheres grandis Moore in Horsfield and Moore's *Cat. Birds E. Ind. Co.'s Mus.* vol. ii, p. 537 (1856) (Sumatra Raffles !! err.).

Anderson records 2 examples Muangla, May 1868; Forrest sent 1 ♂, 1 ♀, 1 ? Tengyueh District.

In the 1925 collection is 1 ♀ hills N.W. of Tengyueh, 7,000 feet, May 1925. Bill and feet orange; iris pale yellow.

655. *Acridotheres cristatellus cristatellus* (Gmel.).

Gracula cristatella Gmelin, *Syst. Not.* vol. i, p. 397, No. 5 (1788) (China).

Ingram records 1 ♂ Mengtsz, May 1910; Bangs & Phillips enumerate 23 examples Mengtsz, Jan.-Dec.; Andrews & Heller obtained 7 ♂♂, ♀♀ ad. Malipa, Yoa-kuan, and Hsiao, Jan.-March 1917; Monsieur Pichon sent 3 examples.

La Touche collected 5 examples Mengtsz Aug. and Nov. 1920 and March 1921; Forrest sent 1 ? Lichiang Range, 1 ♂, 1 ♀ Shweli Valley.

In the 1925 collection are 3 ♂♂, 2 ♀♀ Tengyueh Valley, 6,000 feet, Sept. and Dec. 1925, 1 ♂ hills N.W. of Tengyueh, 7,000 feet, May 1925. M. & Mme. Comby obtained 1 example.

656. *Acridotheres albocinctus* Godw.-Aust. & Wald.

Acridotheres albocinctus Godwin-Austen & Walden, *Ibis*, 1875, p. 251 (Manipur).

Andrews & Heller collected 1 ♀ ad. Malipa, March 1917; Monsieur Pichon sent 3 examples; Forrest obtained 1 ? Lichiang Range.

In the 1925 collection are 2 ♂♂, 4 ♀♀ Tengyueh Valley, 6,000 feet, Dec. 1925.

657. *Gracupica nigricollis* (Payk.).

Gracula nigricollis Paykull, *Nov. Acta Stockh.* vol. xxviii, p. 291, pl. ix (1766) (China).

Anderson obtained 1 ♀ Tsitkow, Feb. 1875, 1 example Manwyne, May 1868, 1 ♂ Muangla, May 1868, 1 ♂ Momiien, June 1868; Captain Wingate collected 1 ♀ ad. S.W. Yunnan, April 1899; Andrews & Heller secured 2 ♂♂, 1 ♀ ad. Meng-ting, Feb. 1917; Monsieur Pichon sent 2 examples; Forrest collected 2 ♂♂, 2 ? Tengyueh Valley.

658. *Pyrhcorax pyrrhcorax* (Linn.).

Upupa pyrrhcorax Linnaeus, *Syst. Nat.* edit. x, vol. i, p. 118 (1758) (England).

Colonel Rippon obtained 1 example Lichiang Valley, April 1906 (this bird is wrongly recorded as *Pyrhcorax graculus* (Linn.) by Ingram); Forrest sent 3 ♂♂, 5 ♀♀ ad., 1 ♂, 1 ♀, 1 ? juv. Lichiang Range.

659. *Garrulus glandarius sinensis* Swinh.

Garrulus sinensis Swinhoe, *Proc. Zool. Soc. London*, 1863, p. 304 (Canton to Ningpo).

Colonel Rippon obtained 5 examples at Yangtze Big Bend, March 1906; Andrews & Heller secured 1 ♂ ad. Lichiang Range, Nov. 1916; Monsieur Pichon

sent 1 specimen; Forrest sent 1 ♀ Mekong Valley, 1 ♂ Mekong-Salwin Divide, 5 ♂♂, 4 ♀♀ 1 ? Lichiang Range.

660. *Garrulus leucotis leucotis* Hume.

Garrulus leucotis Hume, *Proc. As. Soc. Bengal*, 1874, p. 106 (Kankaryit).

Andrews & Heller collected 1 ♂ ad. Malipa, March 1917.

661. *Nucifraga caryocatactes yunnanensis* Ingr.

Nucifraga yunnanensis, Ingram, *Bull. B.O.C.* vol. xxv, p. 86 (1910) (Mts. of Yunnan).

Colonel Rippon obtained several examples Talifu Valley, Feb. and May 1906; and Gyi-dzin-Shán, April 1902; 1 Yangtze Big Bend, March 1906; Andrews & Heller procured 1 ♂ ad. Meng-ting, Feb. 1917; Forrest collected 2 ♂♂, 2 ♀♀ Shweli Valley, 1 ♂ Shweli-Salwin Divide, 2 ♂♂, 4 ♀♀ ad., 1 ♂ juv. Mekong-Salwin Divide, 11 ♂♂, 13 ♀♀, 2 ? ad., 2 ? juv. Lichiang Range.

In the 1925 collection is 1 ♂ N. of Tengyueh, 6,000 feet, April 1925.

662. *Urocissa erythrorhyncha erythrorhyncha* (Bodd.).

Corvus erythrorhynchus Boddaert, *Table Pl. Enl. D'Aub.* p. 38 (1783) (China).

Corvus erythrorhynchus Gmelin, *Syst. Nat.* vol. i, p. 372 (1788) (China).

Coracias melanocephalus Latham, *Ind. Orn.* vol. i, p. 170 (1790) (China).

Hartert has already pointed out (*Suppl. I, Vög. paläarkt. Fauna*, p. 14 (P. 2027)) that the first author of *Urocissa erythrorhyncha* was Boddaert, and that his and Gmelin's name were BOTH founded on Daubenton's plate 622, as was Latham's Red-billed Jay. They are therefore one and the same, and Stuart Baker is quite wrong when he says that *melanocephalus* Latham must be used for this bird, as *erythrorhynchus* Gmel. is preoccupied by *erythrorhynchus* Bodd.

Ingram records 3 ♂♂, 2 ♀♀ Mengtsz, May-June, 1910; Bangs & Phillips record 10 specimens Mengtsz, Feb.-April and Oct.-Dec.; Andrews & Heller obtained 4 ♂♂♀♀ Hui-yao and Lichiang Range, Nov. 1916 and May 1917; La Touche collected 1 ? juv. Posi, Sept. 1920, 1 ? ad. Ynanchiang, Oct. 1920, 1 ♀ ad. Mengtsz, Jan. 1921; Forrest sent 5 ♂♂, 3 ♀♀, 1 ? ad., 5 ? juv. Lichiang Range, 2 ♀♀ Shweli Valley, 2 ♂♂ ad. Mekong Valley, 1 ♂, 1 ♀ ad. Shweli-Salwin Divide, 1 ♂ juv. Mekong-Salwin Divide, 1 ♂, 1 ♀ Yangtze Valley, 1 ♂ Tengyueh Valley. The 1925 collection contains 1 ♂, 2 ♀♀ Tengyueh Valley, 6,000 feet, June and Sept. 1925.

663. *Urocissa erythrorhyncha magnirostris* (Blyth).

Psilorhinus magnirostris Blyth, *Journ. As. Soc. Bengal*, vol. xv, p. 27 (1846) (Mt. Ya Ma Ding).

Anderson collected 1 example Hotha Valley, Aug. 1868.

664. *Urocissa erythrorhyncha occipitalis* (Blyth).

Psilorhinus occipitalis Blyth, *Journ. As. Soc. Bengal*, vol. xv, p. 27 (1846) (N.W. Himalayas).

Colonel Rippon obtained this form in Yunnan.

665. *Urocissa flavirostris flavirostris* (Blyth).

Psitorhinus flavirostris Blyth, *Journ. As. Soc. Bengal*, vol. xv, p. 28 (1846) (Darjeeling).

In Forrest's 1925 collection is 1 ? Tengyueh Valley, 6,000 feet, July 1925. Bill orange-yellow, feet orange-red, iris pale orange.

666. *Dendrocitta formosae himalayensis* Blyth.

Dendrocitta himalayensis Blyth, *Ibis*, 1865, p. 45 (Himalayas).

Captain Wingate collected 1 ♀ ad. S.W. Yunnan, April 1899; Oustalet records this among Prince H. d'Orleans' birds; Bangs & Phillips record 2 examples Loukouchai; Andrews & Heller captured 1 ♂, 1 ♀ ad. Wantien and Taipingpu, April-May 1917; Forrest sent 2 ♂♂, 2 ♀♀ ad. Tengyueh District, 3 ♂♂, 1 ♀ ad. Shweli Valley, 2 ♂♂, 3 ♀♀ ad., 1 ♂, 1 ♀ juv. Shweli-Salwin Divide.

In the 1925 collection are 1 ♂, 1 ♀ hills N.W. of Tengyueh, 8,000 feet, April 1925.

667. *Pica pica serica* Gould.

Pica serica Gould, *Proc. Zool. Soc. London*, 1845, p. 2 (Amoy).

Anderson collected 2 ♂♂ Pensee, May 1868; Colonel Rippon obtained 1 example Talifu Valley, Feb. 1906; Bangs & Phillips record 10 specimens Mengtsh, Jan.-June and Dec.; Andrews & Heller procured 2 ♀♀ ad. Yung-chang Fu, Jan. 1917; Forrest sent 3 ♂♂, 4 ♀♀ Tengyueh District.

668. *Coloeus dauricus* (Pall.).

Corvus dauricus Pallas, *Reise Prov. Russ. Reichs.* vol. iii, Append. p. 694 (1776) (Baikal Region).

This bird has a dimorphic mutant, which at first sight is pure black, but which on careful examination shows the portions, which in typical examples are white, of a less intense more greyish black.

This bird was first described by Vieillot as a distinct species (*Tab. Enc. Méth. Ornith.* vol. ii, pt. 93, p. 880 (1823) (Lake Baikal)), and after describing it "C. ATER, VERTICE COERULEO-ATRO; CERVICE JUGULOQUE FUSCIS" he adds, "Pallas a rencontré cette corneille dans les contrées du lac Baikal." This was pointed out at great length by Stresemann in the *Anzeiger der Ornithologischen Gesellschaft Bayern*, No. 2, 1919, p. 8. In 1925 M. Heim de Balzac (*Rev. franc. Ornith.* vol. ix, p.p. 273-277, on the strength of finding in the Paris Museum 2 examples of the Desert Raven (*C. c. ruficollis* Less. = *umbrinus* auct.) labelled *C. fuscicollis* Vieill. Type, has stated that the name *fuscicollis* Vieill. must supersede *ruficollis* Less. M. Heim de Balzac has not only completely ignored Dr. Stresemann's article, but also evidently failed to read Vieillot's description, where it is definitely stated that the name was given to Pallas's and Latham's DESCRIPTIONS and NOT to a SPECIMEN. In 1859 Schlegel also described this bird as a species under the name of *Corvus neglectus* (*Bijdr. Dierk. Amsterd. Afl.* 8, *Corvus*, p. 16 (1859) (Japan)). It must, however, stand as *Coloeus dauricus* form. dimorph. *fuscicollis* (Vieill.). Ingram records 2 ♂♂ ad., 1 ? juv. Mengtsh, June 1910; Bangs & Phillips enumerate 3 examples Mengtsh, June and Dec.:

La Touche collected 4 ♂♂, 4 ♀♀ ad., 2 ♂♂, 1 ♀ juv. Mengtsh, June–Aug. 1920, and Jan.–March 1921; Forrest sent 4 ♂♂, 4 ♀♀, 1 ? Lichiang Range.

Of *dauricus* form, dimorph. *fuscicollis* Colonel Rippon obtained 1 example Lichiang Valley, March 1906, 1 Talifu Valley, Feb. 1906; Bangs & Phillips record 1 ? Mengtsh; La Touche collected 2 ♂♂, 4 ♀♀ ad., 1 ♀ juv. Mengtsh, Aug. and Nov. 1920 and Jan.–March 1921.

669. **Corvus corone yunnanensis** La Touche.

Corvus corone yunnanensis La Touche, *Bull. B.O.C.* vol. xliii, p. 43 (1922) (Mengtsh).

La Touche collected 4 ♂♂, 7 ♀♀ ad., 1 ? juv. Mengtsh, Aug. & Oct. and Dec. 1920, Jan.–March 1921.

670. **Corvus coronoides mengtshensis** La Touche.

Corvus coronoides mengtshensis La Touche, *Bull. B.O.C.* vol. xliii, p. 80 (1922) (Mengtsh).

In my articles on Forrest's third and fourth collections (Nov. Zool. vols. xxx and xxxii) I called the "Jungle Crows" sent by him *coronoides intermedius* Adams, and said I considered La Touche's *C. mengtshensis* a pure synonym of that race.

Colonel Meinertzhagen has examined Forrest's birds and La Touche's, and finds them, rather to my surprise, to be intermediate between *c. colonorum* Swinh. and *c. andamanensis* Beavan. As therefore they are a race intermediate between two forms, they cannot be treated as synonymous with either unless both are sunk together. I shall under the circumstances treat them as a Yunnanese race for the present till more material comes to hand.

Anderson collected 2 examples Pensee, March 1868, 2 Manwyne, May 1868, 1 Momien, June 1868; Andrews & Heller got 1 ♀ ad. Lichiang Range; Monsieur Pichon sent 2 examples; La Touche collected 1 ♂, 1 ♀ Mengtsh, Jan. 1921; Forrest sent 1 ♂ Tengyueh Valley, 1 ♀ ad., 1 ? juv. Lichiang Range.

671. **Corvus splendens insolens** Hume.

Corvus insolens Hume, *Stray Feathers*, vol. ii, p. 480 (1874) (Tenasserim).

Andrews & Heller obtained 1 ♂ ad. Mengtsh, Feb. 1917.

Thus we find that 666 species and subspecies have been recorded from Yunnan together with four hybrids and two melanistic mutants, of which Forrest obtained 395 species and subspecies and three hybrids.

I must express most sincere thanks to Mr. Kinnear for carefully reading this article and supplying the references to the unrecorded Yunnan birds in the British Museum.

In addition to the preceding list of species, Kuroda (in *Annot. Zool. Jap.* vol. ix, pp. 217–254), on a Collection of Birds from Tonkin, enumerates the following sixteen species and subspecies, not yet known from Yunnan, from Lao-Kay on the Red River. As Lao-Kay is only separated by the width of the Red River from Hokow in Yunnan, a place from which La Touche obtained

many specimens, I feel sure, when Yunnan comes to be further explored, all these sixteen forms will be got within the Yunnan province :

- Charadrius alexandrinus dealbatus* Swinh.
 - Microhierax melanoleucus sinensis* Sharpe.
 - Milvus migrans govinda* Sykes.
 - Micropternus phaeocephus brachyurus* (Vieill.).
 - Pyrhopicus pyrrhotis* (Hodgs.).
 - Otus lettia erythrocampe* (Swinh.).
 - Otus scops gymnopodus* (Gray).
 - Nyctiorhis athertoni* (Jard. & Selby).
 - Ianthocincla lugens* Oust.
 - Gampsorhynchus rufulus torquatus* Hume.
 - Stachyris guttata* (Tick.).
 - Prinia flaviventris* (Deless.).
 - Prinia socialis* (Sykes).
 - Artamus fuscus* (Vieill.).
 - Temnurus temnurus* (Temm.).
 - Eulabes intermedia* (A. Hay).
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TYPES OF BIRDS IN THE TRING MUSEUM

BY ERNST HARTERT, PH.D.

B. Types in the General Collection, VII.

TUBINARES.

1493. *Phoebetria palpebrata huttoni* Math. = *Phoebetria palpebrata huttoni*.*Phoebetria palpebrata huttoni* Mathews, *B. Australia*, ii, p. 297 (1912—New Zealand seas).

Type: "♀" New Zealand. Purchased from Sir Walter Buller.

This form seems to be separable from *P. palpebrata palpebrata*, nesting on the Kerguelen Is. (and probably other islands in the southern Indian Ocean). Cf. *B. Australia*, Mathews & Iredale, *Manual of the B. of Australia*, i, p. 49, Nichols & Murphy, *Auk*, 1914, pp. 527-529. The form named *antarctica* (ex Solander MS.) in 1912 has been renamed *murphyi* by the same author in *Man. B. Austr.*, i, p. 50, for reasons explained, l.c.

? † 1494. *Phoebetria fusca campbelli* Math. = *Phoebetria fusca* ?*Phoebetria fusca campbelli* Mathews, *B. Australia*, ii, p. 304 (1912—Australian seas).

Type: A specimen labelled "♂ South Pacific," No. 5578, of the Mathews collection. Named after A. J. Campbell of Melbourne.

I cannot see that this type and another "New Zealand" specimen is smaller in all its dimensions than two specimens from Inaccessible and Tristan da Cunha Islands, the somewhat (a few mm.!) shorter tarsus being immaterial and apparently not at all constant. See also *Auk*, 1914, p. 533.

Mathews has proved that the light-backed *Phoebetria* must be called *palpebrata*, the uniform one *fusca*, and these are now admitted to be two species. As their breeding grounds, however, are apparently quite separated, I do not see why they should *not* be treated as subspecies of one species. But this is only a question; our knowledge of these birds, as expressly emphasized by Mathews 1912, and by Nichols and Murphy 1914, is very meagre. We hope that Dr. Murphy will soon be able to review them more thoroughly on the hand of fresh and intelligently collected material. Splendid figures of the bills are in Mathews' *B. Australia*, p. 294, and in *Manual B. Australia*, pl. ii!

TUBINARES.

† 1495. *Diomedea culminata mathewsi* R. = *Diomedea chrysostoma*.*Diomedea culminata mathewsi* Rothschild, *Bull. B.O. Club*, xxix, p. 70 (1912—"Campbell Island, New Zealand seas").

Type: ♀ juv. (immature) bought frozen on the London market in February 1903, supposed to be from Campbell Island.

The differences stated to distinguish this form are those of young birds;

¹ Continued from NOVITATES ZOOLOGICAE, 1925, p. 276. See also NOVITATES ZOOLOGICAE, 1918, pp. 4-63; 1919, pp. 124-178; 1920, pp. 425-505; 1922, pp. 365-412; 1924, pp. 112-134; 1925, pp. 138-157 and 259-276.

of the three bought in the London market, two are juvenile, the third adult, with top of head, cheeks, and throat grey, and the culmen yellow, while in the younger birds the culmen is dark.

Mathews, in his *Birds of Australia*, ii, p. 280, separates *Thalassogeron*¹ *chrystostoma chrystostoma*: "Cape seas (breeding)."

Thalassogeron chrystostoma harterti: Kerguelen (breeding).

Thalassogeron chrystostoma culminata: Australian seas (breeding).

Thalassogeron chrystostoma rothschildi: New Zealand seas (Campbell Island breeding).

He, however, suggested these forms rather than making them clear. Differences of "*culminata*" and "*chrystostoma*" are not even indicated. I do not know where in the "Cape Seas" the species breeds, and it seems to me clear that the form nesting on Kerguelen, South Georgia, Marion, and Crozet Islands goes north, when not breeding, to the "Cape Seas." The birds from Campbell Island are like those from Kerguelen, and these are probably the birds which range north to the Bass Straits and elsewhere on the Australian coasts. No Australian breeding place is indicated by Mathews!

Mathews has, I think, correctly used the name *chrystostoma* (Forster 1785!) for this species. Having grasped better than most former writers, that many Petrels and other sea birds have a much more restricted distribution than had been supposed before, and have separable subspecies in almost every breeding colony, he, apparently, thought this was the case in all species, but many Petrels (and some other sea birds) are after all widely spread, and stray away very far from their breeding places out of the nesting season. It is, of course, not always safe to generalize facts in zoology, animals not being machines.

† 1496. *Thalassogeron chrystostoma harterti* Math. = *Diomedea chrystostoma*.

Thalassogeron chrystostoma harterti Matthews, *B. Australia*, ii, p. 280 (1912—"South Indian Ocean, Kerguelen Island breeding").

Type: ♂ ad. Latitude 46°52' South, long. 85° East. R. J. England coll.

This seems to be the specimen figured as *Th. c. culminatus* on plate 97 of the *B. of Australia*.

† 1497. *Thalassogeron carteri* Rothseh. = *Diomedea chlororhynchos*.

Thalassogeron carteri Rothschild, *Bull. B.O. Club*, xiv, p. 6 (1903—Point Cloates, N.W. Australia).

Type: A non-adult male, with injured wing and in very emaciated condition, caught at Point Cloates, in West Australia, 12.v.1900. Tom Carter coll. No. T.C. 142.

When this specimen was described it was not recognized that it was juvenile, as there was no material available. It was described as a species, as the relationship was uncertain. Later on Mathews treated it as the West Australian subspecies of *D. chlororhynchos*, and called it the "Westralian Yellow-Nosed Mollymawk," in opposition to the "East Australian Yellow-Nosed Mollymawk." There is, however, no West Australian subspecies known to exist—the type being, apparently, the only known specimen from West Australia—no more than an East Australian one, these birds not being known to nest in either East or West Australia; their breeding places are on Gough Island, Nightingale, and other

¹ I cannot appreciate the differences between *Thalassogeron* and *Diomedea*, as some species are intermediate.

islands of the Tristan da Cunha group, and from there they visit the Australian coasts. Off East Australia they are sometimes common. There is, in the Mathews collection, a wonderful series collected for Messrs. Tost and Rohu, in Broken Bay, N.S. Wales, not far from Sydney; among these is a juvenile specimen exactly like the type of *T. carteri*, with beak quite black, and less grey on the sides of the head. This series was not available to Mathews when he wrote the second volume of the *Birds of Australia*. He seems now to have recognized that neither *carteri* nor his *bassi* are separable subspecies, as in the *Manual of the Birds of Australia*, vol. i, 1921 (no more has appeared so far!), he and Iredale say that the "races are not yet determined," and that "the West Australian bird" (meaning *carteri*) was named from an immature specimen and "the Tristan da Cunha bird was described as *D. eximia* Verrill owing to a misunderstanding of the species"; it was, as a matter of fact, described from Gough Island. Mathews adds "When breeding places are discovered, forms may be accurately circumscribed." Since several breeding places are now known, and the birds from them seem to be indistinguishable, we may regard *chlororhynchos*, *carteri*, *eximia*, and *bassi* as synonyms.

1498. *Diomedea immutabilis* Rothsch. = *Diomedea immutabilis*.

Diomedea immutabilis Rothschild, *Bull. B.O. Club*, i, p. xlvi (1893—"Laysan Island, North Pacific").

Type: ♀ ad., Laysan, 22.vi.1891. H. C. Palmer coll. No. 1163.

Cf. also Rothschild, *Avifauna of Laysan*, pp. 57, and chiefly 291, and plates.

1499. *Diomedea bulleri* Rothsch. = *Diomedea bulleri*.

Diomedea bulleri Rothschild, *Bull. B.O. Club*, i, p. lviii (1893—"New Zealand").

Type: Adult, said to be from "New Zealand," which meant somewhere near New Zealand. Ex Sir Walter Buller collection.

The nearest species to *D. bulleri* seems to me to be *D. melanophris*, but—apart from the different colour on head and neck and the grey latericorn of the bill—it differs from the latter by having a line of (apparently soft) skin, protruding a few mm. along the lower bill, along the base of the lower mandible. It seems that the only known breeding place of *D. bulleri* is the Snares Islands, but *D. chrysostoma* breeds on Campbell Island, not far away for an Albatross.

It is obviously impossible to recognize the genera *Diomedea* and *Thalassogeron* as different.

1500. *Thalassogeron salvini* Rothsch. = *Diomedea cauta salvini*.

Thalassogeron salvini Rothschild, *Bull. B.O. Club*, i, p. lviii (1893—"New Zealand").

Type: Adult "♀," said to be from New Zealand. Received from Sir Walter Buller.

I have no doubt that *salvini* must be treated as a subspecies of *cauta*. Unfortunately work with New Zealand sea birds and others is often hampered by the unscientific labelling. Very often neither exact localities, nor coloration of bill, iris, and feet, nor the sex, nor the condition of sexual organs, whether caught on breeding place or at sea, is indicated; not in one instance are all these important details on any specimen of the Buller collection.

1501. **Oestrelata nigripennis** Rothsch. = *Pterodroma cookii nigripennis*.

Oestrelata nigripennis Rothschild, *Bull. B.O. Club*, i, p. lvii (1893—Kermadec Islands).

Type : Adult, Sunday I., Kermadec group.

I agree with Mathews and Iredale that *nigripennis* can be looked upon as a subspecies of *cookii* (and *defilippiana*).

1502. **Aestrelata wortheni** Rothsch. = *Pterodroma wortheni*.

Aestrelata wortheni Rothschild, *Bull. B.O. Club*, xii, p. 62 (1902—Pacific Ocean, 3° S., 118° 45' W., not far from the Galapagos Islands).

Type : ♀ Pacific Ocean, 3° S., 118° 45' W., 2.i.1901. R. H. Beck coll. No. 143.

This is probably a subspecies of *Pt. magentae*, of which, however, I am not able to compare a specimen. It is smaller and darker than the latter.

1503. **Aestrelata oliveri** Math. = *Pterodroma oliveri*.

Aestrelata oliveri Mathews, *Austral Avian Record*, ii, p. 113 (1914—Kermadec Islands).

Type : “ ♂ ” ad., Sunday Island, Kermadec group, 7.iii.1913. King Bell coll. No. 158, No. 18479 of the Mathews collection.

P. oliveri appears to be quite a distinct form, unknown till 1914. I am not at all sure if *parvirostris*, which has yellow legs, is its nearest ally ; the fact that the legs are described as “ slightly pink ” points more towards *magentae*, which is, however, larger. I would not call the upperside “ dark dull bluish black,” but greyish black, with a brownish tinge, especially on the wings. The wing measures 278 mm., bill from end of frontal feathering 28 mm. The under wing-coverts are dark brownish slate, only along the arm is a patch of white feathers.

† 1504. **Puffinus obscurus atlanticus** Rothsch. and Hart. = *Puffinus assimilis baroli*.¹

Puffinus obscurus atlanticus Rothschild & Hartert, *Bull. B.O. Club*, xxvii, p. 43 (1911—“ North Atlantic Isles ”).

Type : ♂ Porto Santo, 16.ii.1895. Ex Padre Schmitz.

1505. **Puffinus reinholdi reinholdi** Math. = *Puffinus reinholdi reinholdi*.

Puffinus reinholdi reinholdi Mathews, *Birds of Australia*, ii, pt. 1, p. 74 (1912—New Zealand).

Type : ♂ ad., New Zealand, exact locality not revealed. Bought by Lord Rothschild from Sir Walter Buller, given in exchange to Mr. Mathews. Marked as type by Mathews. This is also the specimen figured in *B. Australia* (pl. 74).

This is the bird for a long time called *gavia*, but I agree with Mathews (cf. *B. Australia*, ii, p. 53) that the description of *gavia* as blue-black above does not apply to this species, which is above blackish brown or “ sooty black ” as described in the *Manual of the Birds of Australia*.

¹ Cf. *Practical Handb. Brit. B.*, ii, p. 426, *Vög. pal. Fauna*, pp. 1421, 1422. There is some uncertainty about the name *obscurus*, therefore *assimilis* has been adopted ; there is, however, also some uncertainty about the name *baroli* ; if the latter is rejected our *atlanticus* must be called *godmani* Allen 1908.

† 1506. *Puffinus reinholdi huttoni* Math. = *Puffinis reinholdi reinholdi*.

Puffinus reinholdi huttoni Mathews, *Birds of Australia*, ii, p. 77 (1912—Snares Island, accidental in South Australia).

Type: “♀” ad., Snares Islands, south of New Zealand. A specimen received by the Tring Museum from Dannefaerd, given in exchange to Mathews.

Described as having a longer bill and longer wings, and more brown on the sides of neck and chest.

There was no ground on which to stand, when this form was named, as these characters are visible in only one of our Snares Islands specimens, in the other not! The wing is 227 mm. long, but the wing of others, not from the Snares, ranges up to 221; in our second Snares bird the primaries are still slightly growing, so that the exact length cannot be correctly stated.

? † 1507. *Reinholdia reinholdi byroni* Math. = ? *Puffinus reinholdi byroni*.

Reinholdia reinholdi byroni Mathews, *Austral Avian Record*, i, p. 187 (1913—“Type, Byron Bay, North New South Wales, No. 15842. Range, New South Wales”).

Type: “♂?” “Eastern Australia,” Tost and Rohu coll.

In *Bull. B.O. Club*, xxxvi, p. 89, Mathews says: “The type-locality of *Reinholdia reinholdi byroni* Mathews and *Cookilaria cookii byroni* Mathews is given as Byron Bay, Northern New South Wales. Both these I consider now to be wrong: the first comes from Five Islands, south of Woollongong, New South Wales, where I believe it breeds; the other from Cabbage Tree Island, and, if so, is a synonym of *leucoptera* (Gould).” The words “I consider” and “if so” suggest that even now there is some doubt about the exact localities: if specimens are properly labelled their localities require no consideration, and no “if.”

The type-specimen is obviously juvenile, and the outer primaries are not at all full grown, a fact that must have escaped the author, or he would have mentioned it. Also the “darker upper-coloration” may be due to its not being an adult bird, as the young of these Petrels have a more blackish upper surface.

We have now quite a series of specimens from the sea east of Australia, collected by Tost and Rohu (S. E. Rohu), from Broken Bay and Bondi Beach, N.S. Wales, June, July, to December. They average smaller than *P. reinholdi reinholdi* from the New Zealand Seas, but a number of them are moulting, and series from certain breeding places are not available. I doubt if the coloration is actually darker, but from our material it looks as if it was *generally* darker—but not constantly. If there really is a nesting-place somewhere on the Australian coast (of which Australian specialists should be aware?), “*byroni*” would probably be a subspecies, but I am not sure if not all these birds from East Australian waters are birds that pass their time there after the breeding season on the islands of New Zealand, including the Snares.

(As I had to examine all these birds I have included in this list some Australian birds from the Mathews collection, which should be discussed at a future time.)

† 1508. *Reinholdia reinholdi melanotis* Math. = *Puffinus reinholdi reinholdi*.

Reinholdia reinholdi melanotis Mathews, *Bull. B.O. Club*, xxxvi, p. 89 (1916—Kaipara Beach, near Helensville, Waitemata Co., North Island, New Zealand).

Type: ♂ jun. Kaipara Beach, 10.i.1915. Robin Kemp coll. No. 4758.

Described as being blackish above and in being smaller. It is, however, a

juvenile character, to be blacker above! Also the small size is of no value, as the outer primaries are *in moult*; therefore the length of wing, correctly given by Mathews as 189 mm., is not comparable! The other characters mentioned in the description are those of any *reinholdi*.

† 1509. **Cinathisma cyaneoleuca** Hull = *Puffinus reinholdi byroni* or *reinholdi*.

Cinathisma cyaneoleuca Hull, *Emu*, xv, p. 205 (1916—"Open sea between Ulladulla and on Brush Island, N.S. Wales").

Type: ♀ Open sea near Ulladulla, 5.xii.1915.

This new "genus" and species is merely a *P. reinholdi*, of which flocks were observed at the time. It is to be hoped that Australian ornithologists are not following Mathews in his endless splitting of supposed genera. The genus "*Cinathisma*" is characterized as follows: "Differs from *Puffinus* in the stronger bill, shorter in proportion to length of bird; shorter wing, tail square (not rounded), rectrices 9." The bill, however, is *not* stronger than in typical *Puffinus* (the type of which genus is *Puffinus puffinus*); the wing-feathers of the ♀ are moulting, so that the exact length is not known, but however that may be, there are *Puffini* with even shorter wings, and a somewhat shorter wing is not a generic character; the tail of the ♀ type is *not* square, but rounded.

This specimen is marked "type," but there is at its back a note that there is also a male type, in Mr. H. L. White's collection! The author would not have marked this ♀ as type if it were very different from the "male type." The plate accompanying the description (not quoted in the text) shows the bill much thicker than in the ♀ type, and the coloration of the feet can hardly be as described and figured, for the inner toes are yellowish, as in all *reinholdi*. "Rectrices 9" is misleading, as all *Puffini* have 12, and the ♀ type has 10.

(In the *Emu*, i.e., it is stated that the description had already been published in *Bulletin* No. 5 of the R.A.O.U., 21.xii.1915. Mathews, in the *Bibliography on the B. of Australia*, p. 22 (1923), says that this *Bulletin* was not published, but only distributed in small numbers to a few Australian ornithologists.)

1510. **Puffinus bannermani** Math. and Ired. = *Puffinus assimilis bannermani*.

Puffinus bannermani Mathews & Iredale, *Ibis*, 1915, p. 594 (Bonin Islands).

Type: Adult, North Iwojima, Bonin Islands, February 1910. From Alan Owston's Japanese hunters. Purchased from Owston by G. M. Mathews.

I have no doubt after all that this form is a subspecies of *P. assimilis* (cf. *Vög. pal. Fauna*, pp. 1421-1423, where I reviewed this group). Probably, also, if some visitor to Christmas Island in the Pacific Ocean brings us the Petrel probably nesting there, we may after all find it to be the form which has for many years been called *P. obscurus*. I have, however, agreed with Mathews¹ not to accept the name *obscurus*, but I cannot follow him in grouping the numerous forms under two species, *assimilis* and *l'herminieri*, but look upon them as subspecies of *assimilis*.

¹ In the *B. Australia*, vol. ii, Mathews has written over 20 pages on these Petrels, also in *Ibis*, 1915, p. 596; in the description of *P. obscurus*, however, is nothing absolutely disagreeing with the bird now called *minor*, but we do not know the Christmas Island form! As the description is too superficial it is for the time being better not accepted.

1511. *Puffinus lherminieri becki* Math. = *Puffinus assimilis becki*.

Puffinus lherminieri becki Mathews, *B. Australia*, ii, p. 70 (1912—"Culpepper and Wenman Islands, Galapagos group").

Type: ♀ ad., Culpepper Island, northern Galapagos, 27.vii.1895. C. M. Harris coll. No. 184.

Mathews merely said that this form was constantly larger and had the under wing-coverts and axillaries lighter than a series from the southern Galapagos Islands. The amount of white on the under wing-coverts and axillaries is, however, variable, and there are specimens from Culpepper which have these parts quite as dark as specimens from the southern islands, *P. a. subalaris*, but among the latter is not one in which these parts are practically quite white, as they are in the type and the one specimen in the British Museum. The wings of our adult, *P. a. becki*, measure 194, 203 (five specimens), 205, 208 mm. In *P. a. subalaris* 190 to 193, once 195, once 197 mm. (nine measured). The differences are therefore slight, and it would be useful if they were confirmed from examination of the material accumulated in American museums.

1512. *Puffinus assimilis kemp* Math. = *Puffinus assimilis kemp*.

Puffinus assimilis kemp Mathews, *B. of Australia*, ii, p. 69 (1912—Chatham Islands).

Type: ♀ ad., Chatham Islands. Purchased from Dannefaerd.

1513. *Puffinus assimilis tunneyi* Math. = *Puffinus assimilis tunneyi*.

Puffinus assimilis tunneyi Mathews, *Birds of Australia*, ii, p. 71 (1912—"West Australian Seas, type Boxer Island off Esperance Bay, West Australia").

Type: ♂ Boxer Island, 14 miles west of Esperance, S. West Australia, 4.vi.1906, evidently breeding there. J. T. Tunney coll.

I cannot in the least confirm Mathews' and Iredale's statement that this form is paler than *assimilis*, nor has it "more white on the forehead," but it seems to be smaller. (Cf. *Manual B. Australia*, i, p. 23, 1921.)

† 1514. *Puffinus assimilis howensis* Math. = *Puffinus assimilis assimilis*.

Puffinus assimilis howensis Mathews, *Austral Avian Record*, ii, p. 125 (1915—Lord Howe Island).

Mathews states that *assimilis* was described by Gould from Norfolk Island. In 1915 he says of his "*howensis*" that it is darker above than *assimilis*, and has a shorter bill. It does not, however, differ from Norfolk Island specimens, but the bills are smaller than in the Kermadec form. Mathews unites the Kermadec form with *assimilis* from Norfolk I., but it seems that the Kermadec birds require a new name, as they have larger bills than the Norfolk and Lord Howe specimens. The Kermadec birds seem to me to belong to *gavia*, and not to *assimilis*.

† 1515. *Puffinus chlororhynchus iredali* Math. = *Puffinus pacificus pacificus*.

Puffinus chlororhynchus iredali Mathews, *Bull. Brit. Orn. Club*, xxvii, p. 40 (1910—Kermadec Islands).

Type: ♂ Sunday Island, Kermadec group, 30.i.1895. H. H. Travers coll.

I have adopted Mathews' nomenclature, who accepted Gmelin's name *Procellaria pacifica* for the Petrel generally called *chlororhynchus*; he suggested

Kermadec Islands as the substituted terra typica, though it is almost certain that Latham's "Pacific Petrel," on which Gmelin's name was based, did not come from there!

† 1516. **Puffinus pacificus royanus** Math. = *Puffinus pacificus chlororhynchus*.

Puffinus pacificus royanus Mathews, *B. Australia*, ii, pp. 83, 85 (1912—"East Australia").

Type: ♂ picked up dead on Bondi Beach, near Sydney, N.S. Wales, 27.iii.1904, ex coll. Matthews, No. 252.

I cannot see how the birds from East Australia, Lord Howe and Norfolk Islands (which Mathews wisely unites) differ from *chlororhynchus* of West Australia, of which I found two in the Mathews collection. The supposed pale colour of the bill is obvious in the type (which was found dead!), but not in other East Australian specimens, and the size varies to some extent.

? † 1517. **Puffinus pacificus hamiltoni** Math. = *Puffinus pacificus chlororhynchus*.

Puffinus pacificus hamiltoni Mathews, *B. Australia*, ii, p. 82 (1912—Seychelles).

Type: ♂ "The Cousin," Seychelles, 9.vii.1904. Thibault coll.

I cannot appreciate the supposed differences of this form; there seems to me to be nothing in the colour, but dirty and worn examples are darker, and there is a good amount of individual variation, which is best displayed in the large series from Australia in the Mathews collection; nor do I think that the bills are differently coloured (see among others Mathews' remarks). All I can see is that the bills in the majority of our specimens are somewhat slenderer, and often longer, than in *chlororhynchus*, but some specimens of the two forms are indistinguishable. As only 14 Seychelle examples are available, I prefer to leave the question open, whether they should be distinguished or not. Mathews would, I do not doubt, separate them because of their different breeding place. While I appreciate Mathews' apparent theory that the same Petrel cannot occur in two widely separated breeding places, we must not model facts according to any theory or rule, but must deduce from facts only.

? † 1518. **Puffinus pacificus alleni** Math. = *Puffinus pacificus chlororhynchus*.

Puffinus pacificus alleni Mathews, *B. Australia*, ii, p. 83 (1912—San Benedicto Island, Revilla Gígedos group, off Mexico).

Type: ♀ San Benedicto Island, 30.iv.1897. A. W. Anthony coll. No. 813.

Mathews says (t.c.p. 84) that *P. p. alleni* is separable from any other form of *P. pacificus* by its "more powerful" bill, but *P. pacificus pacificus* has a more powerful bill. Perhaps Mathews originally meant to say less powerful bill, and forgot afterwards. I cannot see satisfactory differences of our three specimens from Australian *chlororhynchus*, but having seen only three examples I leave the question open for the moment. Mathews also speaks of "light birds" from San Benedicto, but I do not know where he saw them.

As I said before, I adopt Mathews' acceptance of Gmelin's name, though I consider it unfortunate that he fixed the type locality Kermadec Islands for the name *pacificus*, but as I cannot disprove it I adopt it. Kermadec specimens are exactly like the Australian *chlororhynchus*, only their bills are as a rule much larger, wings and tail longer.

† 1519. **Puffinus pacificus laysani** Math. = *Puffinus pacificus cuneatus*.

Puffinus pacificus laysani Mathews, *B. Australia*, ii, p. 83 (1912—Laysan).

Type : ♀ ad., Laysan Island, 22.viii.1896. Professor and Mrs. Schauinsland coll.

There can be no doubt that the specimens from Krusenstern Islands,¹ Laysan, French Frigate Island, Kauai, Bonin Islands, Volcano Islands, and the Pescadores are all one and the same, and *laysani* is a pure synonym.

I have no doubt—and Lord Rothschild agrees with me—that Mathews' former view, that *cuneatus* with white underside and *pacificus* (*chlororhynchus*) are subspecies of one species, is correct. Unfortunately, Mathews later abandoned this view and considered *pacificus* and *cuneatus* two different species, which hybridize occasionally—"a commingling of the two on one or two groups of islands in different ratios, which strongly suggests hybridism and the separation of the two as distinct species," as they put it (*Ibis*, 1915, p. 600). It is true that in the Kermadec Islands, in the Australian Seas, and on the Seychelles, etc., only the form with dark underside is known, while *cuneatus* is nearly always light on the underside, but we have in Tring a bird with dark underside from French Frigate Island, while others from the Bonin Islands show traces and mottlings of brownish grey; as the dark-breasted form is otherwise not known from these islands, this cannot reasonably be supposed to be hybridism, but must be individual variation. Moreover, according to Anthony, white-breasted and dark-breasted specimens inhabit the Revilla Gigedos group west of Mexico. (See Mathews, *B. Australia*, ii, *Ibis*, 1915, p. 600, *Manual B. Australia*, i, p. 26, Oberholser, *Auk*, 1917, p. 474, also Rothschild's "Avifauna of Laysan.")

We wish here to call attention to the importance of collecting in a scientific way; this is very seldom done, and Lord Rothschild and I consider it especially important with sea birds; we mean that the colours of the soft and other unfeathered parts should be marked, that the size of the ovaries and testes should be well described, that it should be fully stated if the birds were breeding or not, and whether they were moulting or not. Moreover, there are many breeding places of sea birds, from where skins are not available in any collection, though they have been visited by Japanese plume-hunters.

1520. **Puffinus bulleri** Salvin = *Puffinus bulleri*.

Puffinus bulleri Salvin, *Ibis*, 1888, p. 354 (New Zealand).

Type or cotype : ♂ Waikanae, New Zealand, from the late Sir Walter Buller's collection. This specimen is figured in Godman's *Monograph of the Petrels*, pl. 23. This specimen is the one formerly in Buller's collection. It seems that this species (which is *not* a subspecies of the *pacificus* or *cuneatus* group) is still very rare, and almost unknown. As far as I know only 5 have been recorded from New Zealand, and one on the sea off California; it would be desirable to compare the latter with the types. Our second specimen, a male, was purchased from H. H. Travers, and was obtained at Cuvier Island, 5.v.1900. Probably this petrel breeds on some island or islands near New Zealand, but the nesting-place is not yet known. It differs from *cuneatus* and its allies besides other characters in the strongly marked difference of the colour of the outer and inner toes. The

¹ This island, or rather Krusenstern Islands or Rocks, is south of Lisiansky and Laysan, and has nothing to do with the Marshall Islands, from which it is more than a thousand miles away!

outer toe is dark brown in skins (blackish brown in a spirit specimen, according to Buller), but not greyish blue as in the plate in the *Monograph of the Petrels*.

† 1521. *Neonectris griseus pescadorei* Math. = *Puffinus griseus*.

Neonectris griseus pescadorei (sic!) Mathews & Iredale, *Ibis*, 1915, p. 602 (Pescadore Islands).

Type: May 1909, Pescadores or Fisher Islands, near Formosa. Bought by Mathews from Owston, who had it from his Japanese collectors. Cf. *Vög. pal. Fauna*, pp. 1426, 1427. I doubt that these birds were breeding. The body plumage is in moult.

† 1522. *Neonectris griseus missus* Math. = *Puffinus griseus*.

Neonectris griseus missus Mathews, *Ibis* 1915, p. 602 (Kurile Islands).

Type: "Kurile Islands," bought from Alan Owston. Probably not nesting on Kurile Islands.

† 1523. *Neonectris griseus nutcheri* Math. = *Puffinus griseus*.

Neonectris griseus nutcheri Mathews, *Austral Avian Record*, iii, p. 54 (1916—"Type Sydney, New South Wales").

Type: "♂," "picked up dead at Bondi Beach, March 1904, by Moffatt."

No reason is given at all why this new name was created, but it is said that it was given to the bird figured and described in *B. Australia*, ii, pl. 77, p. 92. In that place it is stated that this Bondi Beach specimen is the one figured and described. No diagnosis being attempted, the name is virtually a *nomen nudum*, though not technically. It is inconceivable why it has been published.

(About the impossibility to separate the genus "*Neonectris*" from *Puffinus* see Oberholser, *Auk*, 1917, p. 472. Oberholser, however, accepts the genera *Calonectris*, *Ardenna*, and *Thyellodroma*, which are usually united with *Puffinus*.)

1524. *Pelagodroma marina maoriana* Math. = *Pelagodroma marina maoriana*.

Pelagodroma marina maoriana Mathews, *B. Australia* ii, p. 24 (1912—"New Zealand, breeding Chatham and Aukland Islands").

Type: Juv. Chatham Islands, no original labels, perhaps collected by Hawkins.

The series from the Chatham Islands shows this form to have a shorter bill, though single specimens cannot always be distinguished. This is probably the bird described by Solander in his unpublished MS. in the British Museum as "*passerina*"—see Mathews, t.e. p. 24.

1525. *Oceanites oceanicus exasperatus* Math. = ? *Oceanites oceanicus exasperatus*.

Oceanites oceanicus exasperatus Mathews, *B. Australia*, ii, p. 11, pl. 69 (1912—New Zealand, south to Cape Adare, Australia).

Type: A ♂ (sexed by Cullingford) that had come frozen to the London Market and was said to have come from the islands south of New Zealand.

It seems that the birds from the New Zealand seas and Cape Adare are generally larger than those nesting south of the Atlantic Ocean, on South Georgia and Kerguelen (adult and pullus collected by Robert Hall), but more breeding birds should be examined, the different size not being certain. Cf. *Vög. pal. Fauna*, p. 1412.

† 1526. *Bulweria bulweri pacifica* Math. and Ired. = *Bulweria bulwerii bulwerii*.

Bulweria bulweri pacifica Mathews & Iredale, *Ibis*, 1915, p. 607 ("The Pacific-breeding Bulwer's Petrel").

Type: ♂ Iwojima, Bonin Islands, 15.vii.1911.

Separated "on account of its stronger bill, no other difference being apparent." Unfortunately even the supposed bigger bill is in no way constant, and the "Pacific-breeding" *bulwerii* cannot be separated from those of the Atlantic Ocean!

1527. *Pagodroma confusa* Math. = *Pagodroma confusa* (?).

Pagodroma confusa Mathews, *B. Australia*, ii, p. 177 (1912—Cape Adare, Antarctic).

Type: Unsexed, without original label, said to be from Cape Adare, probably a duplicate from the National Antarctic Expedition.

Quite a number of naturalists have remarked upon the various sizes of these "Snowy Petrels," but they did not consider them to be different species. Sharpe, in his report on the "Southern Cross" birds, p. 148, gave a great many measurements of the wings; Wilson, in the *Zoology of the National Antarctic Expedition*, p. 88, mentioned the variability in size, but nobody considered them to be two different species, occurring in the same areas. Mathews took the plunge, and described *P. confusa* from Cape Adare, from where the smallest specimens have also been recorded; he also believed that there were several subspecies of the smaller species.

While there does not seem to be any good reason to talk of several subspecies, it would indeed appear to be the case that two species, *only differing in size*, live together. This is a peculiar instance, and special investigation by a zoologist is required to settle this problem. The question is if this species might not vary in size more than usual, though in that case intermediate examples should not be rare. A female collected by Nicolai Hanson at 65° 3' Southern latitude during the Southern Cross Expedition, while in wing and feet like the largest, has the bill smaller, but not as small as that of small specimens.

I confess that I cannot understand all the measurements of Forster (cf. Mathews, l.c.), but we must accept Mathews' ruling that the name *nivea* belonged to the small form. The question is if large and small birds nest in the same places—if they have separate nesting-places the large and small birds would best be treated as subspecies, occurring together when not breeding.

1528. *Procellaria aequinoctialis steadi* Math. = *Procellaria aequinoctialis steadi*.

Procellaria aequinoctialis steadi Mathews, *Birds Australia*, ii, pp. 108, 112 (1912—"Breeding on Antipodes and Auckland Is.").

Type: ♂ ad., Antipodes Islands, collected by Dannefaerd. Apparently Mathews was quite justified in giving a name to the form breeding on the Antipodes (and Auckland) Islands, south of New Zealand, which have usually a smaller white chin-spot than the birds from the Cape Seas, in fact sometimes there is only a vestige of the white spot left. Such birds with small white chin-spots, however, are also common in the Cape Seas, Table Bay for instance.

? † 1529. **Procellaria aequinoctialis mixta** Math. = ? *P. aequinoctialis aequinoctialis*.
Procellaria aequinoctialis mixta Mathews, *B. Australia*, ii, p. 111 (1912—"Cape Seas. Probably the breeding bird of Kerguelen Islands and Crozets").

Type: ♂ ad., South Atlantic, 300 miles north of Capetown, 26.iv.1909. Tom Carter coll. No. 3748 of the Mathews coll.

I cannot see that the theory of Mathews, that the birds nesting on the Kerguelen and Crozet Islands and occurring in the "Eastern Cape Seas" (*Manual B. Austr.*, i, p. 30), have larger chin-spots than those from the Falklands and South Georgia, can be endorsed. There seems to be no reason for this belief. We have a South Georgian specimen with a rather small chin patch. The amount of white on the chin varies much, and the biggest white patch is also seen among some birds from Table Bay, which cannot be called "Eastern Cape Seas"; moreover, the type is from the Atlantic Ocean, 300 miles north of Capetown, and not from east of Cape of Good Hope.¹ Most authorities now believe that the "Spectacled Petrel," *Procellaria conspicillata* Gould, is only a variety or mutant of *aequinoctialis*, while Mathews treats it as in 1912 as a subspecies of the latter, in 1921 as a species. It is true that in some specimens the white extends in irregular spots on to the sides of the head, but this cannot be called an intergradation between *aequinoctialis* and *conspicillata*; at the present we must therefore treat *conspicillata* as a separate subspecies and await the discovery of its nesting home.

† 1530. **Pseudopron turtur huttoni** Math. = *Pachyptila turtur turtur*.

Pseudopron turtur huttoni Mathews, *B. Australia*, ii, p. 220 (1912—Chatham Islands nesting).

Type: Chatham Islands, H. C. Palmer coll.

All the series of Chatham Islands birds collected by H. C. Palmer are without exact localities and without dates and sexes; they had numbers tacked on to each skin, referring to a full list in a diary which was burnt by the carelessness of a late taxidermist in Cambridge.

I cannot see sufficient reason for separating the Chatham Islands series from East Australian *P. turtur turtur*. Mathews says that the bill of *huttoni* is stronger and the wing longer, but I cannot find this to be constant; there is, of course, some individual variation, and probably the females have narrower bills and often shorter wings, judging from a few reliably sexed specimens available; I don't know if this has ever been considered, but it requires attention!

1531. **Pseudopron turtur crassirostris** Math. = *Pachyptila turtur crassirostris*.

Pseudopron turtur crassirostris Mathews, *B. Australia*, ii, p. 221 (1912—Bounty Island).

Type: ♂ ad., Bounty Island, south of New Zealand, 2.vii.1875. A. Reischek coll.

As Mathews states, this form from Bounty Island has a more powerful bill and, as a rule, longer wing than *P. turtur turtur*.

¹ Edwards, on whose figure and description Linné's *P. aequinoctialis* was founded, had a bird without any white on the chin, with uncertain locality; but surely not from the New Zealand seas. Mathews thinks that this must be another form, whose breeding place is so far unknown, but there is little doubt that it was an aberrant specimen, such as have been seen by several explorers; the measurement of the bill alone proves it not to have been *parkinsoni*!

† 1532. **Heteroprion desolatus macquariensis** Math. = *Pachyptila desolata mattingleyi* ?

Heteroprion desolatus macquariensis Mathews, *Birds Australia*, ii, p. 231 (1912—Macquarie Islands).

Type : “ ♀ ” ad., Macquarie Is., November 1899. H. Travers coll.

These specimens do not have a broader bill than Mathews' *mattingleyi* “ from the East Australian seas ”—there is some individual variation (possibly sexual !), and some “ *macquariensis* ” and “ *mattingleyi* ” are quite alike ; therefore, if *mattingleyi* is tenable, the Macquarie Islands birds must be united with it. Further investigation, however, is required to prove that, as the whole description of *mattingleyi* is “ narrower bill than any other subspecies of *desolatus*,” which does not hold good !

1533. **Heteroprion desolatus alter** Math. = *Pachyptila desolata altera*.

Heteroprion desolatus alter Mathews, *Birds Australia*, ii, p. 231 (1912—Auckland Is.).

Type : “ ♂ ” Auckland Is., south of New Zealand, March 1894. Ex Dannefaerd.

The four Auckland specimens I have seen have wider bills than the four from Kerguelen, but one of the latter, a ♂, has a wider bill than two females. The sexing of the Dannefaerd specimens does not show sexual differences, but cannot be relied on.

1534. **Fregettornis insularis** Math. = *Fregetta grallaria insularis*.¹

Fregettornis insularis Mathews, *Austral Avian Record*, ii, p. 124 (1915—Lord Howe Island).

Type : ♀ West coast of Lord Howe Island, 2.ii.1914. Roy Bell coll. No. 88.

The form from Lord Howe Island seems to be larger than the “ typical ” one inhabiting the waters off the west coast of southern South America : cf. Murphy, *American Mus. Nov.*, No. 124, p. 10, July 1924.

It is, however, doubtful if the birds from Rapa, Austral group, are the same, or still a larger form, the wings, according to Murphy, measuring 179–186, while the Lord Howe birds have wings of 170 (type of *insularis*), 167 (type of *innominatus*), 168 (type of *alisteri*), 156, 165, much smaller than the Rapa birds and mostly all intermediate between *F. grallaria grallaria* from the islands of Massatierra, Juan Fernandez, and Goat Island (teste Murphy), who found among scores of specimens not one bridging over the differences in size, viz. wings 151–158 in the Juan Fernandez form and 179–186 mm. in the Rapa one.

In any case the first of Mathews' three names must be accepted for the form nesting on Lord Howe Island, if we accept the few measurements as typical, though one is as small as some Juan Fernandez birds.

† 1535. **Fregettornis alisteri** Math. = *Fregetta grallaria insularis*.

Fregettornis alisteri Mathews, *Austral Avian Record*, ii, p. 124 (1915—Lord Howe Island).

Type : ♀ ad., S.W. Beach, Lord Howe Island, 23.ix.1913. Roy Bell coll.

† 1536. **Fregettornis innominatus** Math. = *Fregetta grallaria insularis*.

Fregettornis innominatus Mathews, *Austral Avian Record*, ii, p. 124 (1915—Lord Howe Island).

Type : ♀ Pines, Lord Howe Island, 21.v.1914. Roy Bell coll.

¹ See note under *royanus* !

1537. **Fregettornis royanus** Math. = ? *Fregetta grallaria insularis*.

Fregettornis royanus Mathews, *Austral Avian Record*, ii, p. 86 (1914—Lord Howe Island).

Type : ♂ Lord Howe Island, 3.iii.1914. Roy Bell coll. No. 168.

I have very little doubt that *royanus* is a melanistic *insularis* ; if this can be proved the Lord Howe Island form—if separable from *grallaria*—must be called *royana* !

? † 1538. **Fregetta tropica australis** Math. = *Fregetta tropica melanogaster* ?

Fregetta tropica australis Mathews, *Austral Avian Record*, ii, p. 86 (1914—New Zealand).

Type : Adult, New Zealand. From the Otago Museum. Wing 165 mm.

More material will have to be examined, to confirm that the form from the New Zealand waters is really larger than *melanogaster*.

THE *AGARISTIDAE* AND *ZYGAENIDAE* FROM THE BISMARCK
ARCHIPELAGO IN THE TRING MUSEUM.

BY DR. KARL JORDAN.

I. *AGARISTIDAE*.

In *Voy. Astrolabe*, *Entom.* i. p. 179 (1832), Boisduval described as *Agarista praslini* a species which Hampson, in *Lep. Phal.* iii. p. 663 (1901), placed in the list of unrecognized species of *Agaristidae*, adding the remark "type lost." I did not mention the species in my account of the Eastern *Agaristidae* in *Seitz, Macrolep.* xi (1912, Febr.), but neglected to give any reason for omitting it. The fact is that *praslini* is a Noctuid, belonging to the genus *Apsarasa* Moore (1867). We have a pair from New Ireland and several pairs from New Britain.

1. *Immetalia saturata tyrianthina* Butl. (1879).

Agarista tyrianthina Butler, *Proc. Zool. Soc. Lond.* p. 160 (1879) (N. Ireland, 5).

Phalaenoides tyrianthina, Kirby, *Cat. Lep. Het.* i. p. 23, no. 24 (1892).

Phalaenoides (!) *tyriantina* (!), Pagenst., in *Lep. Bismarck-Arch.*, ii. p. 68, no. 117 (1900).

Immetalia longipalpis, Hampson (err. determin.), *Lep. Phal.*, iii. p. 535, no. 21 (1901) (partim); Strand in *Lep. Cat.* pt. 5, p. 8 (1912) (partim).

I cannot understand why Hampson treated this very conspicuous moth as identical with *I. longipalpis* Kirsch (1877); he would have been nearer the truth, if he had considered it a distinct species.

Second segment of palpus without white scaling. Forewing with a white patch which is acuminate costally and placed entirely outside the cell, the patch extending from the areole to below M^2 , the portion below this vein usually being diffuse. The white band of the hindwing of *longipalpis* replaced in *tyrianthina* by a large rounded area extending to near base. The metallic blue stripe running from base to near metallic discoecellular lunule very conspicuous, widened distally into a hook.

Hab. New Ireland, xi.-xii. i. 1923/4, two pairs.—Telesea, New Britain, iii.-iv. 1925, four ♂♂, one ♀. All collected by A. F. Eichhorn.

2. *Burgena chalybeata* Roths. (1896).

♂. *Burgena chalybeata* Rothschild, *Nov. Zool.* iii. p. 39, no. 15 (1896) (N. Britain).

♀. *Burgena amoena* id., l.c. no. 16 (N. Britain).

♂♀. *Damias chalybeata*, Jordan, in *Seitz, Macrolep.* xi. p. 13 (1912) (*amoena* = ♀ of *chalybeata*).

The generic name *Damias* Boisduv., *Voy. Astrol.*, *Ent.* i., p. 259 (1832), was a nomen indesscriptum. Walker, *Cat. Lep. Brit. Mus.* i. p. 14 (1854), gave a diagnosis of *Damias* which was evidently taken from *Damias varia*, and for this reason I have lately used *Damias* instead of *Burgena* Walk. (1864). However, if for the sake of convenience it is desirable to retain for the *Agaristidae* the generic term *Burgena*, I have no objection.

Our series of *B. chalybeata* convinces me that I was wrong when I said in

NOV. ZOOL., 1915, p. 274, that *amoena* and *chalybeata* are two distinct species. I was misled by the fact that the species is sexually monomorphic on Rook I. and dimorphic elsewhere.

(a) **B. chalybeata rookensis** Jord. (1915).

♂♀. *Damius amoena rookensis* Jordan, *Nov. Zool.* xxii. p. 274, no. 2, text-fig. 2. (1915).
Burgena amoena subsp. *rookensis*, Hamps., *Lep. Phal.*, Suppl. ii. p. 541, sub no. 29 (1920).

Sexes practically alike, similar to the ♀ of *B. ch. chalybeata*, but the band-like patch of the forewing broader.

Hab. Rook I., viii. 1913 (A. S. Meek), two ♂♂, one ♀.

(b) **B. chalybeata chalybeata** Roths. (1896).

B. ch. Rothschild, l.c. ; Pagenst. *Lep. Bismarck-Arch.* ii. p. 67, no. 112, tab. 1, fig. 4 (1900); Hamps., *Lep. Phal.* iii. p. 539, no. 29, tab. 51, fig. 15 (1901); Strand, *Lep. Cat.* pt. 5, p. 8 (1912); Hamps., l.c., Suppl. ii. p. 541, no. 29 (1920).

Breast, coxae and the long hairs of the femora orange. ♂ with a subbasal bluish white band on forewing, and ♀ with a discal one; in ♀ a bluish white spot in cell near apex. Length of forewing: 18 to 26 mm.

Hab. New Britain: Telesea, i.-iv. 1925 (A. F. Eichhorn), a series of both sexes; Kinigunang (C. Ribbe), two ♂♂, one ♀; no special loc. (Cotton and Webster), one ♂, type; Vuna Pope, one ♂; no special loc., one ♀.

(c) **B. chalybeata diserta** subsp. nov.

Orange colour restricted to forecoxa. In ♂ the upperside of wings as in *B. ch. chalybeata*, but on underside of forewing an uninterrupted bluish white band, which usually widens behind, and in cell a bluish white spot.—♀. Discal band of forewing, above, practically of even width from subcosta to close to hindmargin, posteriorly more bluish than anteriorly.

Hab. New Ireland, xi.-ii. 1923/4 (A. F. Eichhorn), a series.

(d) **B. chalybeata leucidia** Jord. (1912).

Damius chalybeata leucidia Jordan, in Seitz, *Macrolep.* xi. p. 13 (1912).
Burgena chalybeata subsp. *leucida* (!), Hampson, *Lep. Phal.*, Suppl. ii. p. 541, sub no. 29 (1920).

Only the ♀ known. Orange colour restricted to forecoxa. Discal band of forewing above much narrower from M² to hindmargin.

Hab. New Hanover: iii. 1897 (Webster), one ♀, type; ii. 1923 (A. F. Eichhorn), one ♀.

3. **Mimeusemia simplex limata** subsp. nov.

♂♀. Forewing, above, with a prominent continuous metallic blue discal line as in the various subspecies from the Moluccas, a stripe of the same colour along hindmargin, another on M² and the usual metallic spots in and before cell and on cross-veins likewise conspicuous, creamy white band not quite reaching to M², widest in lower half; in ♀ a subbasal dot in cell and two minute ones beyond middle of cell creamy white.—Fringe of termen of hindwing creamy white, this colouring penetrating on to the wing before anal angle, as is often the case in *M. s. vitticollis* Roths. (1896).

Hab. New Britain : Telesea, iii.-iv.1925, two ♂♂, type.—New Ireland, xi.1923, one ♀. Collected by A. F. Eichhorn.

4. *Ophthalmis haemorrhoidalis* Boisd. (1832).

Agarista aemorrhoidalis (!) Guérin, *Voy. Coquille, Ins.*, Atlas tab. 19, fig. 1 (1830-1) (♀, indescript.).
Agarista haemorrhoidalis Guérin, Boisd., *Voy. Astrolabe*, Ent. p. 177, no. 9 (1832) (N. Ireland);
 Guér., l.c., p. 283 (1838) (N. Ireland).
Phalaenoides haemorrhoidalis, Kirby, *Cat. Lep. Het.* i. p. 22, no. 3 (1892).
Ophthalmis haemorrhoidalis, Hampson, *Lep. Phal.* iii. p. 647, no. 197 tab. 54, fig. 21 (1901) (♀,
 N. Ireland, N. Britain).

Hindwing with a white band which does not reach costal margin. On forewing one or two white spots near tornus, often absent. Fringe of both wings white. Collar and apex of abdomen orange, the collar narrow above, broader below, extending on to the base of the forecoxa. The sexes almost alike, the ♀ differing in the somewhat larger size of the subternal spots of the forewing.

Hab. Known from N. Hanover, N. Ireland, N. Britain, and Feni I.

(a) *O. haemorrhoidalis gentilis* subsp. nov.

♂. Forewing with a diffuse white double spot above and below before tornus ; white band of hindwing extending forward to R^1 , there being in addition some white scales in front of R^1 (= vein 6) on underside, at anal angle the band sharply separated from fringe by a black marginal line ; metallic spots of forewing below somewhat narrower than in *O. h. haemorrhoidalis*.

♀. Subternal spots of forewing above as in the next subspecies, but below larger, the spots forming a band which extends from SM^2 forward to R^1 (= vein 5), the first spot diffuse ; metallic spots of underside smaller than in *O. h. haemorrhoidalis*. Band of hindwing as in the next subspecies except that (in the only specimen we have) there is on the upperside a small distinct spot in front of R^1 .

Hab. New Hanover, ii.-iv.1923 (A. S. Meek), one pair.

(b) *O. haemorrhoidalis haemorrhoidalis* Boisd. (1832).

Agarista aemorrhoidalis Guérin, l.c. (indescript).
Agarista haemorrhoidalis Guérin, Boisd., l.c. (N. Ireland).
Phalaenoides (!) *haemorrhoidalis*, Pagenst., *Lep. Bismarck-Arch.* ii. p. 67 (1900).
Ophthalmis haemorrhoidalis, Hampson, l.c. ; Jord. in Seitz, *Macrolep.* xi. p. 18, tab. 3, *h* (1912) ;
 Strand in *Lep. Cat.* pt. 5, p. 37 (1912).

In ♂ the subternal spot of forewing absent below and at most faintly indicated above ; in ♀ one or two spots above and two or three below, the anterior one diffuse ; band of hindwing, in both sexes, more or less separated at anal angle from white fringe, spot in front of R^2 (= vein 5) absent in ♂ or indicated.

Hab. New Ireland, xi.1923-iii.1924, five pairs.—Feni I., v.-vii.1924, three ♀♀. All collected by A. F. Eichhorn. One worn ♀ labelled "N. Britain," locality evidently erroneous.

The figures in Hampson and Seitz, l.c., were taken from the above-mentioned worn specimen, the only one we had at the time, and may be looked upon as fair representations of the N. Ireland subspecies. The specimen differs slightly from our ♀♀ from N. Ireland in having, on the underside of the forewing, two diffuse white streaks in front of the two large subternal spots. In the figures

quoted the white band of the hindwing is separated from the fringe at anal angle by a black line; in the specimen this line is represented by more or less dispersed scales only. The locality label "N. Britain" is evidently erroneous; the specimen, probably collected by some missionary thirty to forty years ago, possibly came from Duke of York I. or from N. Ireland.

(c) *O. haemorrhoidalis castalis* subsp. nov.

On the whole the metallic spots a little larger than in the previous races; both sexes with white subternal spots on forewing above and below, the white band of the hindwing broadly united with the white fringe at anal angle, usually extending farther forward than in the previous forms, anteriorly nearer the termen, the black terminal band, therefore, being much narrower, only measuring 3 or 4 mm. at R¹.

Hab. New Britain: Telesea, ii.-iv. 1925 (A. F. Eichhorn), five pairs.

5. *Ophthalmis lincea bismarcki* Jord. (1912).

Ophthalmis lincea Cram., Pagenstecher, *Lep. Bismarck-Arch.* ii. p. 68, no. 120 (1900) (partim); Hamps., *Lep. Phal.* iii. p. 648, no. 200 (1901) (partim); Strand, in *Lep. Cat.* pt. 5, p. 37 (1912) (partim).

Ophthalmis lincea bismarcki Jordan, in *Seitz, Macrolep.* xi. p. 19 (1912) (N. Hanover, N. Lauenburg, N. Pommern).

Ophthalmis lincea subsp. *bismarcki*, Hampson, l.c. Suppl. ii. p. 591 (1920).

Orange apical spot of forewing reduced, in ♂ restricted to the fringe or nearly, in ♀ the orange extending on to the wing but much less so than in *O. lincea lincea*; the two middle metallic discal vein-streaks broad, proximally contiguous, at least in ♂; proximal margin of orange band of hindwing straight, not concave as in *O. l. aluensis* Butl. (1887) from the Solomons.

Hab. New Hanover, ii.-iii. 1897 (Webster), four ♂♂.—New Ireland, xi. 1923, ii. 1924 (A. F. Eichhorn), six ♂♂, two ♀♀; also two ♂♂ and one ♀ without indication of collector.—Feni I., iv.-vii. 1924 (A. F. Eichhorn), five pairs.—Mioko (C. Ribbe), one ♂.—Duke of York I. (= New-Lauenburg), one ♀.—New Britain: Telesea, i.-iv. 1925 (A. F. Eichhorn), six ♂♂, two ♀♀; Gazelle Peninsula (Cotton and Webster, and C. Ribbe), eight ♂♂, four ♀♀.

6. *Argyrolepida novaehiberniae* Boisd. (1832).

Agarista Novae Hiberniae Boisduval, *Foy. Astrolabe*, Ent. i. p. 178, no. 10 (1832) (N. Ireland).

Represents *A. aequalis* on the Bismarck Archipelago; metallic blue markings more strongly developed, white discal band of forewing short, straight. Known from New Hanover, New Ireland, and New Britain.

Odice Hübn., *Verz. bek. Schm.*, p. 258 (1825), contains five species, of which Hampson, *Lep. Phal. Suppl.* ii. p. 543 (1920), selected the first (*pamphilia*) as genotype of *Odice*. This same species Hampson had already designated genotype of *Argyrolepida* Hamps. (1901) without reference to *Odice*, which had been overlooked. Hampson, it seems to me, was at liberty in 1920 to select as genotype of *Odice* any one of the five species included by Hübner in that genus, if there was no prior type-selection for *Odice*. But as I had designated *acharia* as genotype of *Odice* as far back as 1912, Hampson's action in 1920 was *ultra vires* and therefore *Argyrolepida* must be restored for *pamphilia* and allies.

(a) *A. novaehibernia novaehiberniae* Boisd. (1832).

- Agarista Novae Hiberniae* Boisd., l.c. (1832); Walk., *Cat. Lep. Het. B.M.* i. p. 45, no. 12 (1854) (partim, nec Australia).
Phalaenoides Novae-Hiberniae, Kirby, *Cat. Lep. Het.* i. p. 23, no. 13 (1892) (partim, nec "Butl., *Illustr. Lep. Het. B.M.*, i. p. 8, tab. 4, fig. 5, Australia.")
Phalaenoides (!) novae hiberniae, Pagenst., *Lep. Bismarck-Arch.* ii. p. 67, no. 115 (1900) (partim, nec "Butl., *Illustr.*").
Argyrolepidia novae-hiberniae, Hampson, *Lep. Phal.* iii. p. 550, no. 44, tab. 52, fig. 9 (1901) (N. Hanover, N. Ireland); Strand, in *Lep. Cat.* pt. 5, p. 12 (1912) (partim, nec "Butl., *Illustr.*").
Argyrolepidia novaehiberniae, Jordan, in Seitz, *Macrolep.* xi. p. 22, tab. 3. b (1912) (N. Mecklenburg, N. Hanover).

Hindwing metallic glossy blue from base to beyond apex of cell.

Hab. New Hanover, ii.-iii. 1897 (Webster), two ♂♂, one ♀; ii.-iv. 1923 (A. S. Meek), six ♂♂, two ♀♀.—New Ireland, xi. 1923-iii. 1924 (A. F. Eichhorn), seven ♂♂, three ♀♀.

(b) *A. novaehiberniae mesotis* subsp. nov.

In both sexes the hindwing with a large, round, transparent white spot outside the end of the cell, shaded with blue and corresponding to the outer portion of the blue area of the previous subspecies.

On forewing, above, the white discal band narrower than in *O. n. novae-hiberniae*, the white apical spot smaller, particularly in ♀, the blue discal spots and those between cell and hindmargin smaller. On underside the blue discal line of forewing vestigial and that of hindwing interrupted or nearly. Apex of midcoxa white like hindcoxa, not shaded with orange as in the previous subspecies.

Hab. New Britain: Telesea, i.-iv. 1925 (A. F. Eichhorn), nine ♂♂, one ♀.

7. *Argyrolepidia restrictus* Roths. (1897).

- Phalaenoides restrictus* Rothschild, *Nov. Zool.* iv. p. 311, no. 10, tab. 7, fig. 8 (1897) (♂, N. Britain).
Phalaenoides (!) restrictus, Pagenst., l.c., p. 68, no. 118 (1900).
Phalaenoides restricta (!), Hampson, *Lep. Phal.* iii. p. 557, no. 54 (1901) ("♀" ex err.); Strand, in *Lep. Cat.* pt. 5, p. 14 (1912) ("♀" ex err.).
Argyrolepidia restrictus, Jordan, in Seitz, *Macrolep.* xi. p. 24, tab. 3. c (1912) (N. Pommerania, N. Hanover).

Represents *A. megisto* Boisd. (1832) in the Bismarck Archipelago. A very constant insect as compared with *A. megisto*. The specimens from New Ireland and New Hanover have, on the whole, the mesonotum more extended orange than the majority of our New Britain examples.

Hab. New Britain, Telesea, i.-ii. 1925 (A. F. Eichhorn), three ♂♂, four ♀♀; Kinigunang (C. Ribbe), one ♂ (type).—New Ireland, xii. 1923-ii. 1924 (A. F. Eichhorn), three pairs.—(New Hanover, ii.-iii. 1897 (Webster), one pair; ii. 1923 (A. S. Meek), three ♂♂, two ♀♀.

II. ZYGAENIDAE.

In 1912 only two species of *Zygaenidae* were known from the Bismarck Archipelago. The expeditions of A. S. Meek and A. F. Eichhorn have added no less than nine, some of which are, in addition, split up into subspecies.

1. *Heteropan lycaenoides apinus* Jord. (1925).

H. l. a. Jordan, *Nov. Zool.* xxxii. p. 235, no. 17 (1925) (N. Ireland).

Both sexes without white area on the upperside of the wings. Forewing of our ♀♀ more glossy blue than in ♂.

Hab. New Hanover, ii.-iii. 1923 (A. S. Meek), two ♀♀.—New Ireland, i. 1924 (A. F. Eichhorn), one ♂, type.

2. *Heteropan cyaneus difformis* Jord. (1907).

H. c. d. Jordan, in Seitz, *Macrolep.* x. p. 12 (1907) (Lousiades, N. Guinea).

Type of *H. c. difformis* from S. Aignan. The specimens which we have in some numbers from the Lousiade Archipelago (S. Aignan, Rossel, and Sudest), and from the Octakwa R., Dutch N. Guinea, the Aroa R. district, Hydrographer Range, and Biagi R. in British N. Guinea, differ individually in size and in colour, particularly in the extent of white on the underside of the wings. The material from the Admiralty Is. and New Ireland vary in the same way. Forewing with four subcostals in all specimens.

Hab. New Ireland, xi. 1923–ii. 1924 (A. F. Eichhorn), a series.—Manus, Admiralty Is., ix.–x. 1913 (A. S. Meek's expedition), a series.

3. *Eusphalera multicolor* Jord. (1925).

E. m. Jordan, *Nov. Zool.* xxxii. p. 236, no. 19 (1925) (N. Ireland).

Represents the N. Guinean *E. semiflava* Jord. (1904) in the Bismarek Archipelago. Amazingly variable in colouring; markings orange, white or metallic blue.

(a) *E. multicolor multicolor* Jord. (1925).

The series obtained by A. F. Eichhorn in New Ireland—the first species of *Chalcosiinae* known from the Bismarek Archipelago—contains nine forms of the ♂ and seven of the ♀; cf. *Nov. Zool.*, l.c.

Hab. New Ireland, ix. 1923–iii. 1924 (A. F. Eichhorn), a series of both sexes.

(b) *E. multicolor pacalis* subsp. nov.

♂. Similar to *E. multicolor* f. *tricolor* Jord. (1925), but body beneath more extended yellow: anterior side of femora, a spot on forecoxa and apex of mid- and hindcoxae, and underside of foretibia and of first foretarsal segment yellow; on abdomen the yellow colouring extends upwards above the stigmata and also covers the false claspers, the pleural portion orange, visible from above.

On upperside the forewing with a basal spot, an oblique postmedian narrow band and a subapical curved band glossy metallic blue; on hindwing a diffuse orange oblique patch proximally of M^1 (i.e. more proximal than in the dark forms of *E. m. multicolor*), much shaded with black.

On underside the metallic blue basal spot of forewing extended along costal margin, and the postmedian band broadened. Hindwing with metallic blue subapical line, the orange discal patch barely vestigial.

Hab. New Britain: Telesca, ii. 1925 (A. F. Eichhorn), one ♂.

4. *Hemiscia meeki vigens* Jord. (1925).

H. m. v. Jordan, l.c. p. 230, no. 6 (1925).

Lower portion of frons orange like posterior margin of head, palpus and anterior surface of forecoxa. White band of forewing narrow.

Hab. New Hanover, iv. 1923 (A. S. Meek's expedition), one ♂.

5. *Caprima necopina* Jord. (1925).

C. n. Jordan, l.c. p. 232.

Collar and on both wings a broad band between base and middle chrome-yellow, on forewing a very large rufous-red patch from middle to near apex.

Hab. New Hanover, ii.-iii. 1923 (A. S. Meek's expedition), one ♂.

6. *Caprima albifrons* Roths. (1899).

Caprima albifrons Rothschild, *Nov. Zool.* vi. p. 436, no. 13 (1899); Jord., *ibid.* xxxii. p. 233, no. 10 (1925).

Crown of head and frons white. Abdomen often with white tip (*f. leucura* Jord., l.c.).

(a) *C. albifrons albifrons* Roths. (1899).

Very variable in the extent of black on the hindwing, in some specimens this wing being almost entirely black. The proximal area of both wings either yellow or orange.

Hab. New Hanover, ii.iii. 1897 (Webster), three ♂♂, type; ii.iii. 1923 (A. S. Meek's expedition), a long series.—New Ireland, xi. 1923–i. 1924 (A. F. Eichhorn), a series.

The New Ireland series not so variable as the larger series from New Hanover.

(b) *C. albifrons nupera* subsp. nov.

♀. Subapical patch of forewing smaller than in the ♀♀ of the previous race, much shaded with black in type and a second specimen, purer in colour and therefore better defined in the third example; terminal black band of hindwing narrower and consequently the yellow are more rounded.

Hab. New Britain: Telesea, ii.–iv. 1925 (A. F. Eichhorn), three ♀♀.

Seventh tergite without white scaling in type, with a few white scales in specimen similar to type, and almost entirely white in third specimen (which has the discal patch of forewing bright-coloured).

7. *Hadrionella ludia* Jord. (1925).

H. l. Jordan, l.c. p. 232, no. 8 (1925).

In colouring similar to *Caprima necopina* Jord. (1925), but forewing with five subcostals: ♂ much smaller than ♀.

Hab. New Ireland, xi. 1923–ii. 1924 (A. F. Eichhorn), two ♂♂ and eight ♀♀.

8. *Aphantocephala solitaria* Jord. (1907).

A. s. Jordan, in Seitz, *Macrolep.* x. p. 42, tab. 8, a (1912) (N. Georgia); id. *Nov. Zool.* xxxii. p. 230, no. 2 (1925) (distribution).

Uniformly black, centre of hindwing slightly transparent, with some white scales.

Hab. New Ireland, xi.1924-i.1925 and Feni I., east of New Ireland, vi.1925 (A. F. Eichhorn), a series.—Also from Manus, Admiralty Is., ix.x.1913 (A. S. Meek), a small series, and New Georgia, Solomons, iii.1904 (A. S. Meek), one ♂, type.

9. *Aphantocephala collaris* Jord. (1925).

A. c. Jordan, *Nov. Zool.* xxxii. p. 231, no. 4 (1925).

Bluish black; collar, sides of abdomen and transverse bands on venter orange-yellow.

Hab. New Hanover, ii.iii (A. S. Meek's expedition), one ♀.

10. *Homophylotis aenea* Jord. (1925).

H. a. Jordan, l.c. p. 231, no. 5 (1925).¹

Hindwing without transparent area, on underside much shaded over with white. Clasper of ♂ with a long apical process curved forward, lying along the ventral margin of the clasper. No veins on forewing stalked; in hindwing R¹ absent, R² and M¹ stalked, R² from cell.

Hab. Feni I., east of New Ireland, v.vi.1924 (A. F. Eichhorn), one ♂, three ♀♀.

11. *Homophylotis doloides* Pagenst. (1900).

Procris doloides Pagenstecher, *Lep. Bismarck-Archip.* ii. p. 25 (1900) (Ralum, ♂♀).

Hindwing below cell with a transparent area from near base to beyond lower cell-angle, entering cell and clothed with semi-erect hairs. In forewing SC⁴ stalked with SC⁵, the other veins from cell, in hindwing R¹ (= 6) absent, R² and M¹ coincident, R² (= 5) from cell.

Apical margin of abdominal sternite VIII of ♂ simple, without median sinus, without tooth; clasper without armature at ventral margin.

Hab. New Ireland, xii.1923-i.1924 (A. F. Eichhorn), one ♂.—Ralum, New Britain (Dahl), one pair in Mus. Berlin.

H. doloides has been left out in Seitz, *Macrolep.* x. (1912); but a form of it has been described there as *H. thyridota* Turn. Whether my identification as *thyridota* of a ♂ from North Queensland and some specimens from Batjan, in the Rothschild Museum, is correct remains to be seen. The specimens agree with Turner's description except in the neuration of the hindwing. Turner says of the hindwing "all veins present; 3 and 4 stalked, 6 and 7 separate, 8 connected by a bar with cell about middle." In none of our specimens of the various species of *Homophylotis* is vein 6 present, and in all examples of "*thyridota* Turn. teste Jord." are veins 3 and 4 coincident, not stalked. It is hardly likely that the statement of such a careful observer as Dr. Turner is incorrect.

¹ In the description of this species reference is made to *H. chalcosoma*, a new species which I intended to publish in the paper quoted, but accidentally omitted. The description will be found at the end of the present article.

Appendix (cf. footnote on p. 365).

Homophylotis chalcosoma sp. nov.

Brownish black, with a purple sheen, upperside of antenna and abdomen glossy blue, underside of body, palpus and legs white, tibiae with one or two blackish patches on upperside, tarsal segments I to IV blackish with white tips, V white; sealing of long outer branches of ♂ antenna more or less white. Upperside of forewing brownish black, with a purple sheen, fringe black. On hindwing a white streak below cell, fringe white.—On underside base of forewing somewhat washed with white. Hindwing proximally white to apex of cell or beyond, distal area blackish brown, variable in width, often band-like, fringe white and this colour extending on to wing-margin.

Margin of sternite VIII of ♂ with a small median sinus flanked by a small rounded lobe each side, into the sinus projects the apex of a median carina of the segment. Proximal ventral portion of clasper strongly chitinised, a longitudinal ventral ridge being formed which ends with a sharp projection pointing straight anad, from the innerside of the ridge a large tooth projects mesad.

Neuration as in *H. aenea*, cf. *antea*.

Hab. Little Key, i., ii., iv. 1898 (H. Kühn), two ♂♂, five ♀♀.

ON A PYRALID PARASITIC AS LARVA ON SPINY SATURNIAN CATERPILLARS AT PARÁ.

BY DR. KARL JORDAN.

(With 6 text-figures.)

SOME years ago the Rev. Arthur Miles Moss, British Chaplain at Pará, Brazil, made the most interesting discovery that some of the *Automeris* caterpillars he was rearing were infested with larvae which lived among the spines, and were undoubtedly those of a small species of moth. My friend has since succeeded in breeding the moth and obtaining it at light in some numbers, and has very kindly placed the larvae, cocoons and imagines, as well as his experience, at my disposal.

The species being a Pyralid, I considered it advisable to send a specimen to Professor A. J. T. Janse, of Pretoria, who makes a special study of the Pyralis of the world, and also to submit the species to W. H. Tams, of the British Museum. Both these experts, to whom I am much obliged for their kind help, arrived independently of each other at the conclusion that the species belongs to *Sthenauge* Hamps. (1906) = *Sthenobaea* Rag. (1890, nec *Sthenoboea* Champ. 1885).

The only species of the genus so far known is *S. abnormalis* Rag. (1890), from Ecuador, a yellowish insect evidently quite distinct from the blackish one discovered by A. M. Moss. In looking over the unarranged American Pyralis in our collection, I found several species congeneric with *S. abnormalis*, but not this genotype. They all agree in some striking particulars: the labial palpus is slender and curved upwards, being more or less applied to the frons, but not extending up to the antenna, the lateral cilia of the antenna are long in the ♂, the lower median vein of the forewing is elbowed at the base (text-figs. 1 and 2, M²) and the second and third radials of the hindwing (R² and R³ = vein 5 and 4) are coincident. The submedians of the forewing form a loop at the base, as stated in Ragonot's description; this loop is left out in Hampson's figure (*Proc. Zool. Soc. London*, 1899, p. 657).

1. *Sthenauge parasitus* sp. nov.

Scape of antenna half as long again as broad, shaft in ♂ with long lateral cilia, which are four or five times as long as the shaft is broad, cilia of ♀ short; proboscis pale yellow, scaled base brownish black; labial palpus slender, reaching to near middle of frons in ♀, somewhat shorter in ♂, segments 2 and 3 smooth, 1 with longer scales; tibiae and upperside of hindtarsal segment 1 moderately rough. Body and upperside of forewing brownish black, distinctly glossy, with a purplish sheen; lateral apical spots on anterior abdominal segments small, variable and often indistinct, and segments 2 to 5 of tarsi creamy buff.

Forewing bent down at apex, a thin pale discal line quite evenly curved, commencing just beyond middle or at two-thirds of costal margin with a minute, inconspicuous buffish spot, and ending at hindmargin close to tornus.—Hindwing

somewhat paler than forewing, a pale line, inconspicuous and slightly curved, extends from below apex of M^2 obliquely forward, but does not reach costal area.

Underside purplish sepia, changing in depth of tint according to the light; on hindwing reappears the pale line of the upperside as a diffuse shadowy band which is indistinctly continued to costal margin, and from below tip of M^2 runs parallel with termen to hindmargin.

Length of forewing: ♂ 8-9 mm., ♀ 8.5-11 mm.

Neuration: cf. text-fig. 1, ♂; variable in detail, SC^5 either from a point with stalk of SC^{3-4} or from stalk of SC^{3-4} , sometimes SC^5 free but close to SC^4 ; in a few of the ♀♀ SM^3 of hindwing forked (text-fig. 2), in which case there are four submedians.

♂-genitalia: anal tergite (text-fig. 3, x.t., lateral aspect) broad, spatulate, thin in dorso-ventral sense, convex above, concave below, apex rotundate-truncate in anal aspect, round if seen from above as in our figure 4; anal sternite concealed under the tergite, very narrow and long, spine-like. Clasper (Cl) irregularly lanceolate; harpe (text-fig. 5, H, inner surface of clasper) broad, curved dorsad, the apex of the upwards projection round; beyond the harpe a tubercle. Penis-sheath (text-fig. 6) acuminate, from the orifice projects a bundle of about ten straight spines directed laterad, the spines unequal in length and somewhat arranged in fan-shape if viewed from the anal side.

♀. Ovipositor, in ventral aspect, more than three times as long as broad, elongate-lanceolate, gradually acuminate. Orifice of duct of bursa copulatrix transverse, its anterior lip slightly more raised than the posterior lip and rather more strongly chitinised.

The sheeny black larva occurs on several species of *Automeris* at Pará, and has once also been found by A. M. Moss on *Dirphia*.

Though living exposed and plainly visible, it spins a web across the back of the caterpillar from spiracle to spiracle between two rows of spines, drawing a few of them together by threads of silk so that a loosely constructed tunnel open at both ends is formed as a retreat. As many as six larvae have been found on one caterpillar. They are very active, in the manner of Pyralid larvae, gliding quickly from one side of the host to the other when disturbed. Here it lives eating the spines of the *Automeris* or *Dirphia* caterpillar, which sickens and in the end succumbs. They have been observed to feed on a dead host, and even to bore into the skin. At first sight the black larvae, lying across the back, look as if they were transverse ridges belonging to the host. When full grown they go into the ground, pupating in a tough blackish cocoon covered with sand and particles of soil. As young larvae have been found on the caterpillar, we may assume that the ova are deposited on the

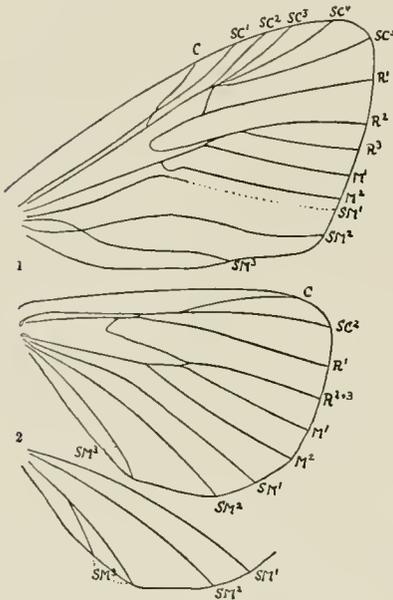
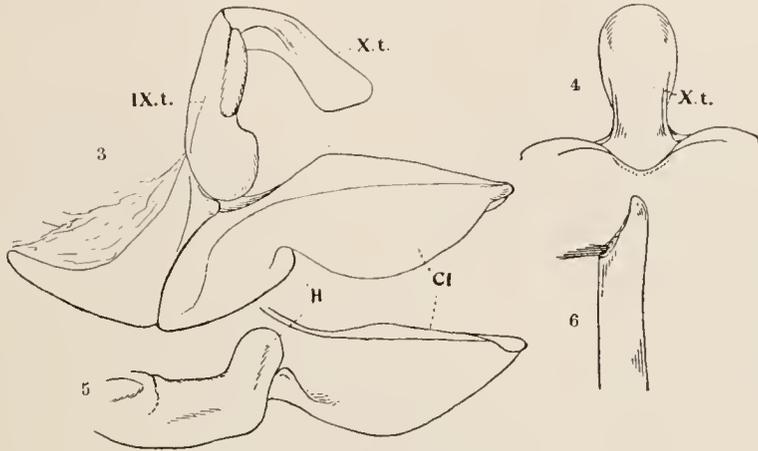


FIG. 1.—*S. parasitus*.

FIG. 2.—Another specimen; anal area of hindwing.

Automeris-caterpillar. If that is the case the embryo must be in an advanced state of development when oviposition takes place, the change of skin in the host rendering it necessary that the ova-stage is short. Perhaps A. M. Moss will one day be able to answer the many questions to which the peculiar habit of this *Pyral* gives rise.

Pupa smooth, thorax slightly wrinkled, abdominal segments II to IV with an irregular double row of rather coarse punctures at base and minute punctures



Figs. 3-6.—*S. parasitus*, genitalia of ♂.

dispersed over the surface, coarse puncturation of V to VII more extended, posterior segments smooth.

As nothing is known of the larval habits of the tropical species of the genera nearly related to *Sthenauge*, it is hardly profitable to speculate on the steps of evolution which have led *S. parasitus* to find shelter under the formidable bristles of a Saturnian caterpillar and to use the spines as food.

Hab. Pará, type, xi. 1922, iii. 1923 (A. M. Moss), a series.—French Guiana : St. Jean de Maroni, a series.

2. *Sthenauge uniformis* sp. nov.

♀. Like *S. parasitus* n.sp., but without pale line on fore- and hindwing.

Hab. Paraná : Iguassu, 1 ♀.

3. *Sthenauge bicolor* sp. nov.

♂♀. Head, thorax above and below, a patch on abdominal tergites II and III, a large lateral patch on these segments followed by a small spot, and usually a spot on tergite VII brownish black, coxae, femora and tibiae (if not rubbed) of the same dark colour, tarsal segments II to V more or less cream-colour, also abdomen and a median patch on metanotum and apex of mesonotum cream-colour.

Wings above : forewing brown-black from base to about two-thirds, this is rounded and sinuous distally, with a blue metallic gloss and bounded by a creamy area which is widest at costal margin, where it extends down to middle and distad to near apex, from about lower cell-angle backwards narrowed into

a line, widened again at tornus, a terminal band metallic black like proximal area, sinuous and diffuse on proximal side, termen itself with creamy spots, but the fringe uniformly brownish metallic black, except at tornus, where it is creamy. —Hindwing creamy shaded with brownish black, termen metallic like dark area of forewing, an indistinct pale line from apex of M^2 obliquely forward, fringe of abdominal margin and around anal angle to near M^2 cream-colour.

Underside buffish cream, washed with black, particularly in the costal and apical areas of both wings, the pale markings of the upperside of the forewing slightly indicated below.

Length of forewing : ♂ 8.5–11 mm., ♀ 11 mm.

Neuration and ♂-genitalia essentially as in *S. parasitus*.

Hab. S.E. Peru : R. Huacamayo, at various places from 2,000 to 3,400 feet, vi. viii. xii. 1904 (S. R. Ockenden), 4 ♂♂, 1 ♀, type ♂. —French Guiana : St. Jean de Maroni, 3 ♂♂.

The species recalls by its style of colouring some small European Geometers, f.i. *Eupithecia breviculata* Donz. (1837).

SOME NEW *AGARISTIDAE*, WITH REMARKS ON NOMENCLATURE.

By DR. KARL JORDAN.

(With a text-figure.)

THE well-known family-name *Agaristidae* was rejected in 1918 (Nov. Zool. xxv, p. 383) by Sir George Hampson, Bart., in favour of *Phalaenoididae*, on the ground that *Phalaenoides* Lewin, 1805, is older than *Agarista* Leach, 1815, Hampson proposing, i.e., for the first time, a rule of Nomenclature to the effect that "the family and subfamily names are derived from the oldest generic name in the respective groups." Applying this rule to all the families and subfamilies of Lepidoptera, Hampson replaces a large number of familiar names by new ones; thus the *Pieridae* are called by Hampson *Asciadae*, the *Lycaenidae* are turned into *Cupidinidae*, the *Hesperiidae* into *Erynnidae*, the *Acronyctinae* appear as *Zenobianae*, the *Syntomidae* as *Amatidae*, etc. etc. As the Code of Zoological Nomenclature does not contain a rule as to the stability and priority of names of categories higher than genera, Hampson was at liberty to invent a rule of his own. His proposal, although it does not conform with usage, would be acceptable if it led to a stabilisation of the names of families, subfamilies, etc. But such a result could only obtain—

(1) if classification were so perfect that there could be no doubt as to the family, subfamily or tribe into which each genus should be placed;

(2) if there were no difference of opinion or uncertainty as to the genotype of composite genera; and

(3) if there were no difference of opinion as to the validity of certain categories of generic names, as, for instance, names not defined by a description or not accompanied by the citation of a species.

Whoever is acquainted with systematics knows that not one of the three premises is fulfilled, and that uncertainty and difference of view are particularly frequent with regard to the correct application of the older generic names. I will give some illustrations of the three premises from Hampson's work.

1. Difference of view as to classification: Hampson, i.e. p. 384, replaces the name *Hypsiidae* by *Callimorphidae*, making *Callimorpha* the family-type and *hera* the genotype. However, the inclusion of *Callimorpha* in the "*Hypsiidae*" is due to an error of observation on the part of Hampson, who maintains that the hindwing-venuration of *Callimorpha* is the same as in *Hypsa* = *Asota*, while in reality the venuration is as in *Arctia*, *Callimorpha* being a true Arctiid and not a Hypsid. Therefore the name *Callimorphidae* is not admissible for that family.

2. Difference of view as to the genotypes of old names: Hampson, i.e. p. 383, makes *strix* L. 1758 the genotype of *Noctua*. The description of *strix*, however, is that of a Cossid, and the name has accordingly been applied subsequently by Linnaeus himself, Cramer, and all modern authors to a species of

Cossidae. If Hampson was right in selecting *strix* L. 1758 as genotype of *Noctua*, the Cossids would become *Noctuidae*, according to Hampson's rule, and what we call *Noctuidae* would have to receive another name.—A further illustration: Hampson, l.c. p. 385, replaces *Erycinidae* by *Plebejidae*, selecting *cupido* L. 1758 as type of *Plebejus* L. 1758, i.e. the first species mentioned under *Plebeji* in *Syst. Nat.* ed. x. p. 482. But in 1896 Kirby had already stated that *argus* L. 1758 was the type of *Plebejus*. Now, *argus* belongs to what is generally known as *Lycaenidae*. Therefore, if Hampson's rule is adopted and Kirby's prior type-designation considered valid, and if, further, Linnaeus's divisions of *Papilio* are accepted as generic terms dating from 1758—to which many Lepidopterists strongly object—the name *Plebejidae* would have to be employed for the Lycaenids and not for the Erycinids.

3. Difference of opinion as to the validity of certain kinds of generic names: Many Entomologists regard the Linnaean subdivisions of *Papilio* as subgeneric names, *Eques*, *Heliconius*, *Danaus*, *Nymphalis*, *Plebejus*, *Barbarus*; others accept as subgeneric terms even the Linnaean subsubdivisions *Trojanus*, *Achivus*, *Candidus*, etc.; while others again object either to both these categories of designations or only to the subsubdivisions.—Hübner's Tentamen (1805) is accepted only by a minority of Lepidopterists, and Billberg's and Dejean's undescribed catalogue names are a bone of contention, etc.—What a confusion would be the result, if Hampson's rule were applied consistently by the adherents of opposite views!

It is to be hoped that the Commission on Zoological Nomenclature will take up the matter and issue a ruling. Meanwhile we may take it that there is no reason whatever for changing the name of the family to which belong the species hereafter described: *Agaristidae*.

There is a second point with regard to the nomenclature of the *Agaristidae* which I should like to mention here. In *Lep. Phal.*, Suppl. ii, p. 549 (1920), Hampson states that "*Heraclia*, Hübn. Verz. p. 180 (1827), type *geryon*," has priority over *Xanthospilopteryx* (—the year of issue of p. 180 of the Verz. probably was 1822, not 1827, but that does not concern us here—). Hübner describes his Coitus *Heraclia* and mentions three species: "*Heraclia Euphemia* Cram., *H. Dominula* Linn., *H. Placentia* Abb." The description says: Forewing black, with green gloss and pale spots, hindwing and abdomen red. This description does not apply to *euphemia*, but very well to *dominula* and *placentia*, which fact Hampson ignores, mechanically designating the first species as type. Such action is quite contrary to his principle of rejecting every generic name that is not described, or characterised by a figure, with which principle I heartily agree. If, however, indescript names are rejected because there are no descriptions accompanying them, i.e. if we make the validity of a name dependent on the presence of a description of the name (or, rather, of a description of the concept for which the name stands), the description is rendered paramount, and definite statements contained in it are consequently of primary importance in the selection of the genotype. It was, therefore, *ultra vires* to select a species without green gloss on the forewing and with a yellow-banded abdomen as genotype of a genus said by the author to be characterised by the forewing being glossy green black and the abdomen red. The first of the three included species which agrees with this description of *Heraclia* is *dominula*, and this species should have been selected as genotype by Hampson.

1. *Xanthospilopteryx hollandi* Cockerell (1905).

Syn.: *Xanthospilopteryx kirbyi* Holland (1897) nec *X. kirbyi* Carp. (1893).

Hampson, *Lep. Phal.* Suppl. ii, p. 557, sub no. 74, says that *hollandi* is a synonym of *kirbyi*. I agree, of course, with Professor Cockerell that *kirbyi* of 1897 is invalidated by *kirbyi* of 1893, although this older name *kirbyi* sinks as a synonym of *X. pardalina* Walk. (1869).

In *Lepidopt. Catal.* pt. 5, pp. 14 and 16, Strand erroneously gives as locality of *Xanthospilopteryx abucata* and *X. lomata* "Deutsch-Südwestafrika"; the species were described from Bahiburg, Kamerun.

2. *Rothia arrosa* sp. nov.

♀. In colour similar to *R. eriopis* f. *carminata* Roths. (1896), but the body above red, the termen of both wings spotted with white and undulate, etc.

Head and palpus black, spotted with cream-colour as in *R. eriopis*; pronotum black, with two creamy spots (meso-metanotum denuded); abdomen carmine above, shading into orange at tip, greater portion of tergite I, base of II, a basal spot on III, and vestiges of basal spots on IV and V black, underside orange along middle, with some black ventral spots; legs orange, tarsi black, the segments tipped with white.

Wings, above: forewing black, with four creamy white spots as in *R. eriopis*, but bearing in addition two creamy white dots in front of SM², one before and the other (slightly larger) beyond middle, outside the upper discal spots three blue dots, similar dots on discocellulars and before tornus, termen very distinctly scalloped, in the bays white dots, which are merged together at apex of wing into a white line (fringe), dot before tornus larger than the others.—Hindwing irregularly scalloped, rather deeply excised before middle, white fringe-spots distinct, fringe of apex white; base and a broad terminal band black, the band produced basad at costa, but not quite extended to the narrow basal area, rest of wing carmine, in middle of cell and on discocellular an ill-defined small creamy spot.

Underside like upper, but forewing without the submedian spots and without metallic dots; hindwing carmine, extreme base orange mixed with black, terminal band extending as a narrow stripe along costal margin to near base; white cell-spots more distinct than above.

Length of forewing: 28 mm., breadth 14 mm.

Hab. E. Madagascar: Lac Aloatra, i.-ii. 1925, one ♀.

3. *Arrothia bicolor melanobasis* subsp. nov.

♂. The yellow area of forewing, above, reduced to an antemedian band of about 2.5 mm. width which crosses cell a short distance from apex, the basal area black powdered with yellow; yellow area of hindwing likewise reduced, the base being black for about 3 mm.

On underside the proximal area of forewing much paler than in *A. bicolor bicolor* Roths. and densely shaded over with black, as is also the costal portion of the yellow area of the hindwing.

Hab. E. Madagascar: Lac Aloatra, i.-ii. 1925, 1 ♂.

4. *Arctiopais ambusta celis* subsp. nov.

♂. Larger than our ♂♂ of *A. a. ambusta* Mab. (1881); forewing with a ferruginous terminal band, 7 mm. broad at apex, tapering behind. Black terminal band of hindwing much narrower than in *A. a. ambusta*, 7 mm. broad below apex and 1 mm. before anal angle.

On underside the terminal band of forewing as above, but nearly as deep black as that of hindwing; in ♂ of *A. a. ambusta* the forewing bears a narrow black submarginal band which reaches neither costa nor tornus and is separated from termen by a tawny-orange area.

Length of forewing: 21 mm.

Hab. Madagascar, Diego Suarez, i.1917 (G. Melou), 1 ♂.

The orange colouring has much suffered; a large proportion of the upper tales being rubbed off, the specimen is very pale.

5. *Aegocera comorana* sp. nov.

♀. In colouring unlike any other species of *Aegocera*, markings diffuse, but the orbicular and the reniform conspicuous.

Head and palpus white, frons with broad blackish median stripe, a large spot on segment II of palpus and nearly the whole of III black; pro- and mesonotum chocolate, with three white stripes, metanotum with a blackish tuft each side and an orange tuft in front of tympanal organ; abdomen orange, tergite I with black metallic double tuft, II to VII with diffuse blackish median spots, a few black scales before apex of VII; breast and underside of abdomen pale yellow, prosternum almost white; legs orange, two spots on fore- and midtibiae black, fore- and midtarsi and segments II to V of hindtarsus nearly entirely black.

Wings, above; forewing ecru drab densely irrorated with blackish scales, on discocellulars a silvery line accompanied each side by a pale wood-brown line, the whole enclosed by a brownish black ring which is open on the costal side, proximally to this spot a small circular spot of the same colour; from base to middle a diffuse whitish stripe, gradually widening distally, occupying part of the cell and being more or less bounded by the submedian fold, on the distal side of the discocellular spot a diffuse whitish patch joined to the stripe below, stripe and patch distally bounded by an indistinct pale olive-buff line, which consists of two parts, an anterior rounded portion and a more proximal straight posterior portion, on this line as well as between base and cell-apex, on the whitish stripe and patch and before hindmargin metallic silvery scales, termen slightly undulate, a thin terminal line brown, fringe ecru drab, silvery in certain lights. — Hindwing ochre-yellow, a terminal band blackish, 2 to 3 mm. broad, of nearly even width, interrupted at the veins, termen slightly undulate, fringe for the greater part white, at least in anterior third of wing.

Underside ochre-yellow, shading into creamy buff at termen, this terminal area unicolorous on forewing or shaded with brown proximally, before anal angle of hindwing some blackish submarginal spots; discocellular and orbicular of forewing circular, black, on hindwing a small black spot at upper cell-angle.

Length of forewing: 18 to 21 mm.

Hab. Grande Comoro, x.-xi.1921 (G. F. Leigh), 3 ♀♀.

"Larva very handsome, feeds on wild vine" (G. F. Leigh).

6. *Aegocera ferrugo* sp. nov.

♂. Size of *A. rectilinea* Boisd. (1836), both wings ferruginous red with buff yellow fringes.

Frontal process longer than in *A. rectilinea*, its end-surface broader transversely than sagittally, cordiform, slightly incurved ventrally and angulate dorsally, supra-oral transverse ridge higher mesally than laterally, rounded-triangular in dorsal aspect, sides of frons parallel. Frons and upperside of thorax pale cream colour, a stripe running from eye across pronotum and bordering tegula dorsally chestnut red, a narrow lateral border of tegula the same colour. First and second segments of palpus cream-colour on inside, chestnut mixed with cream and black on outside, long hair orange-ochraceous, most of the outer lateral hairs black, third segment almost entirely black. Abdomen orange-ochraceous, bases of tergites III to VII black, breast orange-ochraceous, underside of abdomen paler and sparsely mixed with black; fore- and midtibiae black mixed with grey, the long hair orange-ochraceous mixed with grey, hindtibia grey mixed with black, long hair of base orange-ochraceous, that of apical half more grey; tarsi black spotted with white; lateral scent-tuft clay-colour.

Wings nearly shaped as in *A. rectilinea*, but the termen longer and the hind-margin correspondingly shorter; forewing ferruginous red, costal and hind-margins black dusted with creamy scales, a diffuse stripe from base along submedian fold to near termen and a diffuse terminal line cream-colour dusted with black, cream-coloured scales scattered over the rest of the wing except centre: near base of cell an obscure creamy spot mixed with black, proximally to apex of cell an oblong spot with the corners rounded off and beyond apex of cell a uniform spot, both cream-colour, edged with black, the outer spot 2.5 mm. long and less than 1 mm. broad, costal margin incrassate beyond middle, along this incrassation a stripe partly denuded of scales; fringe of termen and of distal portion of costa buff-yellow, the longer scales paler, creamy scaling along fringe dense.—Hindwing a little more tawny than forewing, i.e. less red, a vestige of a darker tawny discocellular spot, fringe of termen deeper yellow than on forewing, long hair of base and abdominal margin yellow.

Underside ferruginous, costal margins and extreme edges of termen as well as the terminal fringes, the base of the forewing and the abdominal fringes of the hindwing yellow, hindwing more or less yellow between cell and costal margin, a dark ferruginous discocellular spot indicated.

Genitalia: Apical half of tenth tergite dorsally carinate, the sides distinctly flattened out, tip not carinate, curved down, very sharply pointed. Hook of harpe longer and stronger than in *A. rectilinea*.

Length of forewing: 16.5 mm.

Hab. Abyssinia: Hora Daka, 31.v.1914 (O. Kovacs), 1 ♂.

7. *Aegocera anthina* spec. nov.

♀. Size of *A. menete* Cram. (1775), colouring quite different.

Frons and scaling of antenna cream-colour, apical surface of frontal process almost circular, a little wider ventrally than above, supra-oral ridge almost straight, not produced in middle, palpus pale yellow, apex of segment III and a large lateral patch on II black; thorax above orange-yellow, on each side a

large patch on pronotum and a lateral and a dorsal stripe on meso-metanotum black with metallic gloss, on abdominal tergite I a median tuft of the same colour, abdomen above and below, breast and legs pale orange-ochraceous, two large patches on foretibia, more or less confluent, two separate patches on midtibia, segments II to V of fore- and midtarsus, and III to V of hindtarsus black, hindtibia with vestige of a subapical black spot and segment II of hindtarsus partly black, long spur of proximal pair not quite reaching to base of apical pair.

Upperside of forewing : a maize-yellow antemedian patch from hindmargin to near costa, 3 mm. broad in front and behind, about twice as wide in middle, its proximal margin straight, 5 mm. from base anteriorly and nearly 7 mm. posteriorly, the outer margin of the patch angulate below cell, in middle of patch below cell a black dot, the patches edged with black, between it and base a plumbeous double spot and a small and a larger yellow spot at costal margin, a plumbeous line and a ferruginous red patch between cell and hindmargin ; at apex of cell a transverse comma pale maize-yellow surrounded by black, proximally and distally of it a plumbeous bar, the outer one placed on the discocellulars produced basad on the median vein ; beyond this comma a large costal patch, irregularly rounded, maize-yellow, about 5 mm. wide, edged with black, on its outside a plumbeous line which is continued to hindmargin of wing, running along the black border of the yellow patches and being connected with the discocellular bar, a second, less prominent, metallic line about $\frac{1}{2}$ mm. further distal, the interspace between the two lines ferruginous red ; terminal area pale drab shaded with plumbeous and proximally washed with ferruginous red, terminal fringe and extreme costal edge maize-yellow.—Hindwing ochre-yellow, a discocellular transverse dot and a terminal band of 5 mm. width black, terminal fringe tipped with maize-yellow.

Underside black and yellow ; yellow antemedian patch of forewing extended to base and costal margin, costal margin more broadly bordered with yellow than above.

Neuration : SC^2 of forewing (= 10) from anterior side of areole, not from apex.

Length of forewing : 22 to 24 mm.

Hab. N. Nigeria : Bauchi Plateau, 2 ♀♀.

Aletopus gen. nov.

♀. In aspect similar to *Weymeria* Karsch (1895), wings shorter and more rounded, particularly the hindwing. Frons conical as in *Aegocera*, the process truncate, with raised rim, supra-oral ridge medianly produced into a short sharp tooth. Palpus as in *Aegocera*. Antenna (♀) not dilated distally. Tibiae without long hair, no spines on mid- and hindtibiae.

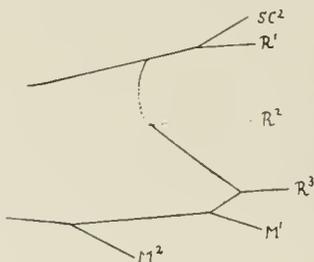


FIG. 1.—*Aletopus*, hindwing.

Neuration : SC^2 (= 10) of forewing from before apex of areole, stalk of SC^{2-4} as long as the areole, M^1 from well before angle, being farther from R^3 than this is from R^2 ; in hindwing SC^2 and R^1 stalked, M^1 from well before angle (text-fig.).

Genotype : *A. imperialis* sp. nov.

8. *Aletopus imperialis* sp. nov.

♀. Body, antenna, palpus and legs black, with the following white spots: one on antenna near base, two on each side of frons, one beyond eye, one each side of pronotum, one at apex of first and second segment of palpus, one at apex of coxae, three on tibiae, one at apex of first segment of tarsi, two on each side of the abdominal segments, one dorsally on last segment and one ventrally at apex of the first three sternites; meso-metanotum orange, black mesally, with a black dot above costal margin of forewing, tergites I to VI of abdomen orange at apex.

Wings above: forewing rufous from base to lower median, this area 8 mm. wide at costal vein, 12 mm. at hindmargin, its distal margin being obliquely rounded, rest of wing black, with a white discal band from near costal margin across discocellulars to beyond M^2 , almost straight on inner side, sinuous on outer side, 3 mm. broad in front, and nearly 5 mm. at R^2 , behind the band a round white spot on SM^2 , fringe white at apex of wing.—Hindwing scarlet, with black terminal band bearing a row of five white dots, the band 5 mm. broad below apex and about 3 mm. in front of anal angle, fringe white at apex of wing.

Underside like upper, but basal area of forewing scarlet, and the terminal band of the hindwing with six white spots.

Length of forewing: 24 mm., breadth 14 mm.

Length of hindwing at subcosta 18 mm., at submedian 17 mm., breadth 15 mm. (from tip of C to tip of SM^2).

Hab. Tanganyika Territory: Bungu, Usambara, ix. 1921 (Loveridge), 1 ♀.

9. *Acantuerta ladina* sp. nov.

♀. Similar to *A. thomensis* Jord. (1904), black border of hindwing not continued along abdominal margin to base.

Frons, palpus, legs and underside of abdomen without white markings, breast dark brown, sides of frons ferruginous chestnut.

Upperside of forewing: the orbicular in cell replaced by an oblique line bearing plumbeous scaling, a plumbeous oblique line behind cell at basal fifth, plumbeous scaling also on discocellular spot, on the line connecting it with hindmargin, and at the outside of the discal line.—Hindwing orange, a black terminal band 5 mm. wide below apex and 3 mm. before anal angle.

Underside: base of forewing pale orange, this area extending beyond middle on submedian fold, oblique distally, its anterior corner separated by an oblique black cell-spot which is united with the black median black, outside this black band an obscure discal band, pale brown like termen (not white as in *A. thomensis*), reaching from near costal margin to M^2 , ground outside this band blackish.—Hindwing orange, with black dot at upper cell-angle, black terminal band as above, but somewhat paler except its proximal edge.

Length of forewing: 23 mm.

Hab. Lado Enclave: Shambo, 17.xii.1911, 1 ♀.

10. *Seudyra vitalis* sp. nov.

♂. In size and shape similar to *S. longipennis*, colouring quite different, the forewing being creamy white banded and striped with chocolate-brown.

Head creamy white, chocolate-brown at side above palpus and beyond eye, frons raised into a high cone, the raised rim of the small circular apical surface of the cone ventrally produced into a tooth; palpus blackish brown, ventral surface of segment I and tip of II and III white. Thorax chocolate brown, with three white stripes, abdomen, breast and legs buff yellow, on upperside of abdomen a row of rather diffuse black spots, upperside of fore- and midtibiae and tarsi blackish.

Wings, above; forewing creamy white, costa brownish black from base to two-thirds, from this border extend two abbreviated chocolate-brown bands, the first across cell, oblique, stopping short just below base of M^2 , the second including the discocellulars, 3 mm. broad, reaching to M^2 and being drawn out into three vein-streaks on R^2 , M^1 and M^2 , interspace between the bands 3 mm. broad, a terminal band composed of chocolate-brown lines and spots separated by creamy white interspaces, the inner margin of this band well defined, but the component parts more or less diffuse, particularly behind, where the band is more extended white than brown, width at apex 8 to 9 mm., at tornus 4 mm., from base along hindmargin a chocolate-brown stripe, 3 mm. broad at base, 2 near tornus, joining the terminal band, in this stripe a diffuse white line.—Hindwing buff-yellow, a round spot at upper cell-angle, another, somewhat larger, distally of lower cell-angle, which it does not touch, a terminal band from costal margin to near R^2 , scalloped on proximal side and nearly 4 mm. broad between the veins, followed by a submarginal row of three spots, all blackish brown with a chocolate tint.

On underside the hindmarginal brown stripe of forewing absent, base washed with yellow, terminal band almost uniformly chocolate except behind, where the outer portion is white and the last spot of the inner portion blackish.—On hindwing the terminal band narrower than above, more distinctly separated from fringe by a yellow line.

Length of forewing: 31 mm.

Hab. Annam: Thado Cuarao (R. Vitalis de Salvaza), 2 ♂♂, type in Mus. Brit.

ON SOME OLD WORLD SPHINGIDAE.

BY DR. KARL JORDAN.

(With 7 text-figures.)

1. *Dovania neumanni* sp. nov.

♂. In structure closely resembling *D. poecila* R. & J. (1903), but much smaller, the abdomen not distinctly banded, the hindwing not ferruginous, etc.

Head and thorax dark russet, with an intermingling of narrow white scales at the sides, abdomen olivaceous black, posteriorly with some white scales, at sides partly pale drab, this colouring appearing in an oblique aspect as transverse patches; underside blackish olive, palpi darker, breast somewhat russet, legs with an admixture of white scaling, which forms a spot at apex of first hind-tarsal segment; first foretarsal segment with four long spines as in *D. poecila*.

Upperside of forewing nearly as in *D. poecila*: ground olivaceous black, much shaded with blue-white scales between the black markings, base dark, at one-third two black transverse lines, curved obliquely basad at both ends, the outer one broad, partly divided by some blue scaling into two lines, stigma pale yellow, on disc a black band, slightly curved in S-shape, well defined on proximal side, diffuse distally, outside this band a pale line bearing blue scales, its distance from proximal margin of black band 3 mm. at costa, 4 in middle of wing and 2 mm. at hindmargin, before apex a triangular black patch outwardly bounded by a thin white interrupted line.—Hindwing olivaceous Vandyke brown, with an indistinct dark line on disc, some blue scaling at termen, and pale fringe-dots.

Underside olivaceous Vandyke brown, pale blue scaling along termen of both wings and along costal margin of hindwing, near apical angle of both wings a small space bare of blue scales, abdominal margin of hindwing grey.

Genitalia of the same type as in *D. poecila*: anal tergite less pointed, anal sternite narrower and more claviform in a dorsal or ventral aspect; harpe (text-fig. 1) broad, almost gradually narrowed, with the apex truncate-rotundate and slightly denticulate; penis-funnel (text-fig. 2, P-F.) triangular, pointed, directed ventrad; penis-sheath (text-fig. 2, Pen.) with indication of a short longitudinal reddish-brown swelling which ends with a small subapical tooth, membranous lobe projecting from sheath covered with short hairs.

Length of forewing: 26 mm.

Hab. S.W. Abyssinia: Djimma, 14.v.1925 (Prof. O. Neumann), 1 ♂. Named in honour of the discoverer.

2. *Pseudodolbina fo celator* subsp. nov.

♂♀. The three males examined differ from Assamese and Sikkimese examples of *P. fo* in the harpe bearing a ventral tooth close to apex, variable in size (text-fig. 3). There does not appear to be any other distinction.

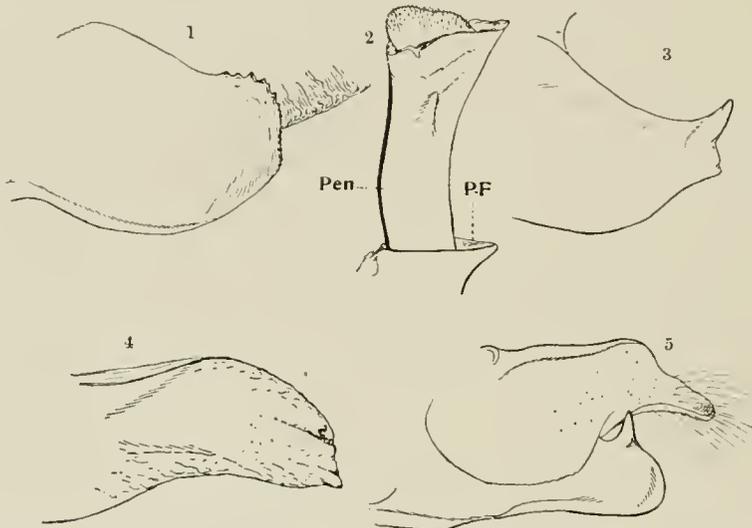
Hab. N.W. India: Dharmsala, viii.1924 (Major F. A. Scott), 1 pair, type ♂; Masuri, vii.-x.1922 (Mackenzie), 1 pair. Also in B.M.

3. *Marumba microta* Hamps. (1907).

This species belongs to *Agnosia*. We have now several ♂♂ obtained at light at Nagpur, Central Provinces, in August and October, a most welcome contribution to our collection by Prof. T. Bainbrigge Fletcher.

4. *Cypa decolor pallens* subsp. nov.

♀. Large; upperside: body and proximal half of forewing wood-brown, with a slight ferruginous tint, outer half of forewing shaded with pale sepia; hindwing ferruginous.—Underside: body pinkish buff; forewing pale ferruginous from base to three-fourths, terminal area clayish buff, with some diffuse darker tints in certain lights; hindwing paler than termen of forewing, being almost creamy buff. Markings as in *C. d. decolor*. Much paler than *C. d. decolor*, the forewing and body contrasting strongly with the upperside of the hindwing.



FIGS. 1 & 2.—*Dovunia neumanni*.
,, 3.—*Pseudodolbina fo celator*.

FIG. 4.—*Lophostethus demolini negus*.
,, 5.—*Sataspes scotti*.

Length of forewing: 34 mm.

Hab. N.W. India: Masuri, 14.iv.1906; 1 ♀, received from Prof. T. Bainbrigge Fletcher.

5. *Lophostethus demolini negus* subsp. nov.

♂. The only specimen obtained is much worn, but nevertheless sufficiently well preserved for comparison with specimens from other districts of Africa, whence we have over a hundred in the collection.

Body and wings with a slight vinaceous-cinnamon tint. Wings, above, as deep-coloured as dark West African specimens, termen a little less undulate, subbasal dark stripe of forewing more prominent, creamy white cell-spot elliptical, discocellular spot different from that of all our other specimens in the costal branch being the longest (text-fig. 6). On underside the discal dark brown line (about halfway between cell and termen) well marked on both fore- and

hindwing; the black costal median patches rubbed away on all four wings, the forewing bearing, as a remnant of the costal patch, a line which is distinct costally and fades away towards hindmargin, whereas there is on the hindwing a prominent median line extending from costal margin towards anal angle; cell-apex of hindwing less oblique than usually, the upper cross-vein a little less than half as long again as the second. Anal tergite dorsally convex at each side before the tip, which is curved down and rounded; apex of harpe acuminate, slightly curved ventrad, with a small tooth at the tip and another above it (text-fig. 4).

Hab. S.W. Abyssinia: Kambatta, 1.v.1925 (Prof. O. Neumann), 1 ♂.

6. *Sataspes scotti* sp. nov.

♂. Body drab grey (Ridgway, 1886, pl. ii, 13), segments II and V to VIII dorsally and tail laterally blackish; tergite I (almost concealed under the hairs of the thorax), tips of side-tufts of abdomen, anterior surface of forecoxa, upperside of foretibia and -tarsus, and outer surface of mid- and hindlegs dull pale yellow, this colouring not at all conspicuous.

Upperside of wings: forewing less elongate than in *S. infernalis*, distal margin shorter and more convex, colour drab grey like that of thorax, termen dark hair-brown (Ridgway, l.c. iii, 12), this border about 1.5 mm. broad at tornus, gradually becoming broader and at costal margin from vein R^1 (= vein 6) suddenly being produced basad to middle, the grey area traversed by an obscure broad subbasal band, beyond one-fourth by a straight line, and in middle of wing by another somewhat broader line, which begins at middle of costa and ends a little beyond middle of hindmargin, these lines the same colour as the terminal band.—Hindwing like termen of forewing, shaded with drab grey from base to disc and anal angle, costal area (concealed) creamy, behind it some white hairs.

Underside drab, with a slight tint of cinnamon and a faint purplish sheen, which is also present on the upperside in certain lights.

Genitalia resembling those of *S. infernalis*, but horns of anal tergite rather slenderer, harpe more rounded at apex, its tooth smaller (text-fig. 5).

Neuration: in both wings R^1 (= 6) branching off beyond cell.

Length of forewing: 22 mm., breadth 7 mm.

Hab. N.W. India: Dehra Dun, 29.iv.1926, 1 ♂ bred by Major F. B. Scott, in whose honour the species is named.

The dull colouring is most strange for a species of *Sataspes*. This species probably is in colour a more ancestral type than the metallic mimetic species. The grey scales of the upperside of the forewing are nearly all long and narrow.

7. *Nephele lannini* sp. nov.

♂. Closely related to *N. bipartita* Butl. (1878). Antenna thicker. Forewing broader, the termen more convex than even in the female of *N. bipartita*, incurved below apex, which projects as a distinct hook.

Antenna pale buff down to middle. Black bands of abdomen not interrupted above, but here narrowed, there being a dark olive patch on segments 3 to 6; head and thorax dark olive, underside of thorax and abdomen paler; segment 1 of palpus and base of 2 as in *N. bipartita* white much mixed with dark olive scales.

Upperside of forewing olive, paler than thorax, without the ochraceous-buff or clayish patches of *N. bipartita*, the ground being unicolorous, lines dark olive, from tornus to costal margin a blackish olive stripe as in *N. bipartita* (black scales mostly short), on the distal side of the stripe a triangular area somewhat darker than the ground and very slightly mummy brown, widening towards termen, a minute white stigma, in an oblique view the dark oblique stripe widened on the veins into short streaks.—Hindwing with dark mummy brown tint shading into olive at base, fringe of termen pale ochraceous-buff.

Underside of wings like breast and abdomen somewhat paler olive than upperside of forewing, with a slight buffish tint, lines as in *N. bipartita*.

Length of forewing 38 mm., breadth 16.3 mm.

Hab. S. Rhodesia : Xmas Pass, Umtali, 14.v.1926 (bred) (E. W. Lannin), 1 ♂. Named in honour of the discoverer, of whose collection the specimen forms part.

The olive or green colouring of the species of *Nephele* is generally much faded in cabinet specimens, particularly if they have gone through a process of relaxing for setting.

8. *Macroglossum dohertyi melanura* subsp. nov.

♂. Segment II of abdomen with the yellow side-patch barely vestigial; tail black, with an admixture of chocolate scales (in *M. d. dohertyi* buff, in middle cream colour). Terminal border of hindwing strongly convex in middle.

Length of forewing : 22 mm.

Hab. Bismarek Archipelago : Telesea, N. Britain, i.1925 (A. F. Eichhorn), 1 ♂.

The ♂ from British New Guinea mentioned in the Revision of the Sphingidae, p. 648, has a similar terminal band to the hindwing and probably belongs to this subspecies; but as the abdomen is almost entirely denuded and there is only a small remnant of the tail left, we must wait for a better specimen before we can be certain.

9. *Macroglossum caldum* sp. nov.

Macroglossum calescens Butl., Roths. & Jord. (err. determ.), Nov. Zool. ix, Suppl. p., 639, no. 575, tab. 3, fig. 5 ♂, tab. 51, fig. 7 and tab. 56, fig. 33 (genit.) (1903) (Milne Bay; Fergusson; nec N. Britain).

The species described and figured by us in the Revision, i.e., as *M. calescens* is not that species. It differs from true *M. calescens* especially in the yellow side-spots of the abdomen being small and in the genitalia, see below.

Type from Milne Bay, S.E. New Guinea, iv.1899 (A. S. Meek).

10. *Macroglossum calescens* Butl. (1882).

The type, a ♀, has the abdomen somewhat soiled, which explains our mistake in identification. We have now four specimens from New Britain which a re-examination of the type proves to be *M. calescens*. The wings are practically the same in markings as in *M. caldum*, except that the orange band of the hindwing is on the whole a little broader than in the figure of *M. caldum*, i.e., and that the underside of the hindwing is much more extended

yellow. There are four orange side-patches on the abdomen on segments II to V, the first vestigial (σ) or small (σ), the second and third large, separated from each other only by the brown edge of the segment, fourth spot much smaller than second and third.

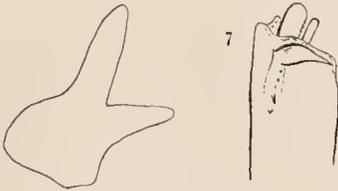


FIG. 6.—*L. demolini negus*.
,, 7.—*MacroGLOSSUM calescens*.

Genitalia of σ almost as in *M. castaneum* R. & J. (1903), but the harpe thicker, its apex curved down and the spikes pointing distad and ventrad, not dorsad; penis-sheath (text-fig. 7) with short pointed process, which is absent in *M. castaneum* and very long in *M. caldum*.

Two pairs from Telesea, New Britain, ii.-iv.1925 (A. F. Eichhorn).

11. *Hippotion moorei* sp. nov.

Close to *H. rosae* Butl. (1882), but head and thorax without a white lateral stripe.

Two subspecies:

(a) *H. moorei moorei*.

Body above silvery grey, slightly shaded with pink here and there, mesonotum anteriorly russet or chestnut, this colour extending along the tegulae as a diffuse line, underside a little more pink than upper, especially the breast; palpi, prosternum and pro- and midfemora more or less chestnut. Scaling of antenna pink.

Wings somewhat shorter than in *H. rosae*. Forewing as in that species, except that the transverse bands are a little more distinct, particularly the subbasal line, which forms an angle of 90° in the cell, the short costal arm of the angle being 8 to 9 mm. distant from base at costal margin and the long straight posterior arm reaching hindmargin 5 to 6 mm. from base, from the patch of black speckles at hindmargin two shadowy parallel bands extend forward to costa, nearly straight behind and then rounded, curving costad, the oblique blackish apical streak and the stigma as in *H. rosae*.—Hindwing vinaceous pink, terminal area grey, ill-defined, with slight suffusion of pink at the veins and extreme margin, the shadowy dark submarginal band of *H. rosae* barely indicated.

Underside: forewing more or less conspicuously vinaceous pink from base to disc, this colour gradually shading into the pinkish grey of the terminal area, hindwing grey washed with pink, most of the transverse striae pinkish, those of terminal area blackish, on both wings a postdiscal curved line, more or less distinct on forewing, sometimes obsolescent on hindwing.

Genitalia essentially as in *H. rosae*, the upper margin of the harpe a little more undulate.

Hab. Tanganyika Territory: Mwanza, Victoria Nyanza, xii.-i.1925/26 (Lt. M. S. Moore, V.C.), several σ σ , type in Mus. Brit.

(b) *H. moorei canens* subsp. nov.

σ . Without any pink except on antenna.

Hab. Abyssinia: Dalada, 10.viii.1908 (R. E. Drake-Brockman), 1 σ , type, in Brit. Mus. Somaliland: Malka Re, 1.v.1901 (C. von Erlanger), 1 σ in Mus. Tring.

In *H. rosae*, *H. moorei*, and *H. dexiippus* Fawc. (1915), the clasper bears on the outer surface a subdorsal patch of numerous lanceolate scales; in *H. roseipennis* Butl. (1882), *H. rebeli* R. & J. (1903), and *H. exclamationis* Fawc. (1915) the patch is replaced by a single, very large, scale.

The genitalia of the three ♂♂ of *H. rosae* compared by me are not quite alike; these specimens being from different districts it is possible that the slight differences noticed by me are geographical, but a larger series must be examined before a more definite opinion can be expressed with some degree of reliability.

NEW SIPHONAPTERA.

By DR. KARL JORDAN.

(With 22 text-figures.)

Delopsylla gen. nov.

Near *Moeopsylla* Roths. (1908), but differs considerably in the epipharynx and mandibles being slender, the metanotum much shorter than the mesonotum and devoid of a row of bristles, the mesepisternum oblique, the mesothoracical stigma placed close to the coxa as in *Echidnophaga*, the fifth tarsal segment bearing five large plantar bristles, etc.

Frontal tubercle not quite so far dorsal as in *Moeopsylla*. Ventral genal lobe long. Mandibles and epipharynx slender, their teeth small; labial palpus membranous, segmentation indistinct. Mesonotum as long as pronotum, metanotum much shorter. Antepygidial bristles strong, one in ♂, two to four in ♀. Anterior margin of pygidium dorsally not much raised. Hindcoxa with apical tooth anteriorly; bristles of tarsi and dorsal and apical ones of tibiae strong, as are the five lateral bristles of tarsal segment V.

♂. Tergite IX without manubrium above that of clasper; the two lower processes of clasper as in *Echidnophaga* a pair of pincers (text-fig. 1).

♀. Head of spermatheca small, tail long and curved, orifice subdorsal (text-fig. 2).

Genotype: *D. crassipes* sp. nov.

1. **Delopsylla crassipes** sp. nov.

♂♀. Frons with two large bristles, occiput with one; bristles of second segment of antenna and one bristle of first long; proboscis reaching about to two-thirds of forecoxa; the labial palpus apparently divided by one joint into a short basal segment and a long apical one. Pro- and mesonotum with a row of bristles, consisting on each side of four to six large lateral ones and two or three small dorsal bristles; on mesopleura two, on metepisternum one bristle, on metepimerum two or three rows, containing in ♂ usually eleven, sometimes ten, in ♀ from twelve to seventeen bristles. On tergite I on each side two or three bristles, on II to VI one, on VII two or three, on sternites II to VI no bristles, on VII one or two. Hindtibia with at least thirteen stout dorsal bristles exclusive of apical ones, and no lateral bristles; the two longest apical bristles reaching beyond apex of tarsal segment I, one or two of I beyond II, and one or two of II to or beyond middle of V.

♂. Upper process P¹ of clasper more than twice as long as second (text-fig. 1), straight, of nearly even width, about four times as long as broad, dorsal margin hairy, on outer surface about six to eight slightly longer bristles, at apex a straight, cylindrical, obtuse spine. On each side of sternite VIII three or four bristles.

♀. On outer surface of ventral area of tergite VIII five or six large bristles and one to three small ones, at apical margin ten or eleven bristles, of which

two or three are short. Head of spermatheca (text-fig. 2) as broad as long, tail twice as long and rather less than half as wide as head.

Length (mounted specimens): ♂ 1.7-1.9 mm., ♀ 2.7-3.1 mm.

Hab. Kenya Colony: Nairobi, off *Pedetes surdaster larvalis*, March 1925 (Dr. V. G. L. van Someren), a small series.

2. *Ceratophyllus gallinulae perpinnatus* Baker (1904).

The North American specimens of this species which we have so far treated as identical with European ones are in reality distinguished by some details in

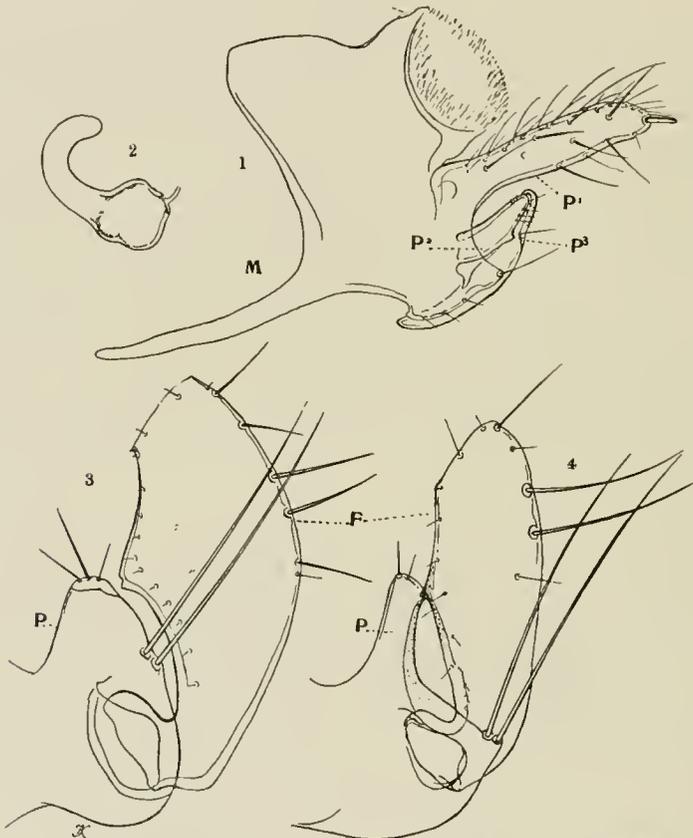


FIG. 1.—*Delopsylla crassipes* ♂. FIG. 3.—*Ceratophyllus vagabunda alpestris* ♂.
 " 2. " " ♀. " 4. " " *celsus* ♂.

the tail-ends. For instance, in the ♂ the process P of the clasper is hardly at all incurved on the posterior side and the exopodite F has the apical margin less slanting and therefore the anterior apical angle less acute, and in the ♀ the sinus of sternite VII is smaller and the lobe above it broader and always rounded. The name *perpinnatus* Baker 1904, based on Nearctic specimens, must be revived. We have now a good series of this subspecies.

3. *Ceratophyllus vagabunda* Boh. (1866).

The study of further material proves the species to vary geographically.

(a) *C. vagabunda vagabunda* Boh. (1866).

The Arctic subspecies, of which Dr. A. Dampf has given beautiful figures in 1911 (in König, *Avifauna Spitzbergensis*).

(b) *C. vagabunda insularis* Roths. (1906).

The British subspecies. Distal portion of sternite IX of ♂ much narrower than in Arctic specimens.

(c) *C. vagabunda alpestris* subsp. nov.

Ceratophyllus vagabunda Boh., J. & R., *Ectoparasites*, i. p. 85, no. 12 (1920) (above Zermatt).

♂. Exopodite F (text-fig. 3) much shorter and broader than in the previous races, more curved and its bristles stouter. Distal portion of sternite IX as narrow as in *C. v. insularis*. Apical fringed lobe of sternite VIII small, the dorsal prolongation spine-like (variable in length) and without fringes, or with hardly any. As in *C. v. insularis*, P of clasper broader and the pair of acetabular bristles placed farther upwards than in *C. v. vagabunda*.

♀. Below stigma of tergite VIII three to six bristles (usually three or four), of which two or three are long; on the ventral outer area of this segment from fifteen to twenty bristles. Head of spermatheca (measured in a straight line) a little shorter than the first midtarsal segment.

Hab. Switzerland: Findelen, above Zermatt, in nest of *Pyrrhocorax graculus*, a series.

4. *Ceratophyllus celsus* spec. nov.

♂. Allied to *C. diffinis* Jord. (1925), but distinguished from all the allied bird-fleas by the long and narrow process P of the clasper (text-fig. 4). Comb a little longer than the pronotum, measured in middle of side. Abdominal tergites I, II and III with two apical spines each side, IV two on one side and one on the other; basal sternite with two ventral bristles on the two sides together (no lateral ones), III and IV with five, V with four, VI with six and a small one in front, VII with four and three small ones. On outer surface of hind-femur two bristles, besides a third towards base and a fourth towards apex, these latter two subventral. On outer surface of hindtibia a single lateral subdorsal row, containing nine bristles, not counting the small bristle at apex. None of the hindtarsal bristles reach the apex of the segment following; on outer surface of segment I of hindtarsus five bristles in one tarsus and seven in the other, apart from the lateral and apical bristles; on sole of segment V very few minute hairs. Tergite VIII not unlike that of *C. niger* Fox (1908); it bears nine or ten bristles at and near the dorsal margin, two or three towards base and one long one near ventral margin. Process P of clasper about four times as long as it is broad in middle; posterior margin of clasper straight and slanting between P and the acetabular bristles, forming a right angle with the ventral margin, the two bristles placed just above this angle, being subventral; exopodite F of the same type as in *C. niger*, somewhat longer and bearing on the posterior side in apical half two rather strong bristles, between them and apex two small ones, of which the apical one is the longer, and below the strong bristles one small slender one. Dilated portion of proximal half of ninth sternite longer and narrower, i.e. less strongly rounded than in *C. niger*. Sternite VIII with

seven long bristles at apex (on the two sides together), and two spiniform membranous projections which are directed distad, each preceded by a small membranous lobe, which does not seem to be fully expanded in the only specimen before me.

Hab. British Columbia; Okanagan Falls, April 1913, off *Riparia riparia* (C. Garrett), one ♂.

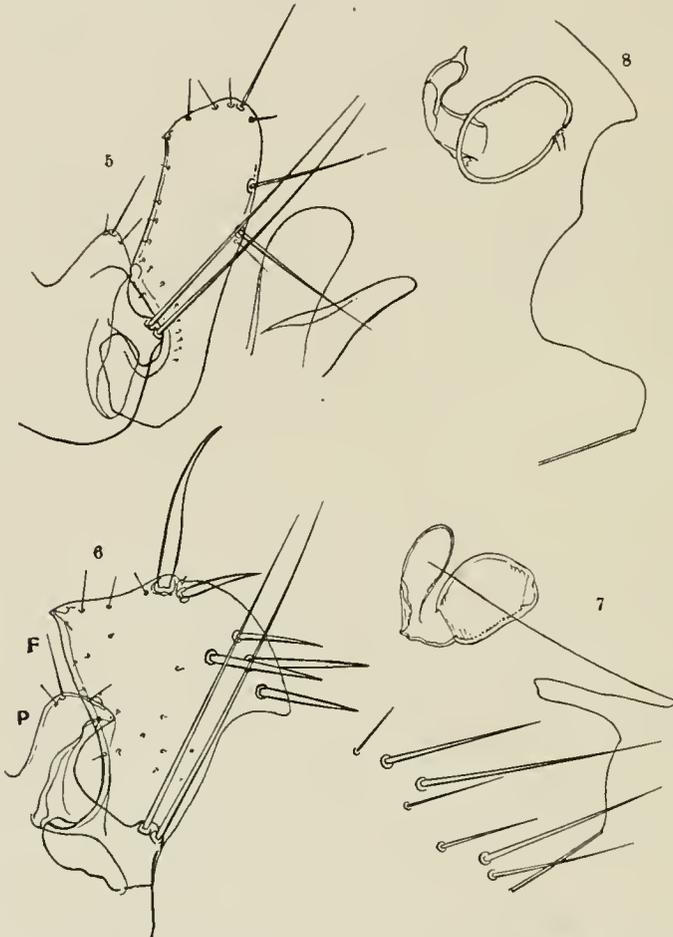


FIG. 5.—*Ceratophyllus tribulis* ♂.
,, 6. ,, *borneensis* ♂.

FIG. 7.—*Ceratophyllus borneensis* ♀.
,, 8.—*Stivalius mjobergi* ♀.

5. *Ceratophyllus tribulis* sp. nov.

♂. Similar to *C. gallinae* Schrank (1803), which it probably represents in Central Asia: bristles of exopodite thinner (text-fig. 5), the two lower ones, below which there is a small bristle, placed farther down, the short, spiniform, third bristle farther up, the apical one at least as stout as the second; paramere broader. Differs from *C. pullatus* J. & R. (1920) in the denticulated dorsal area of tergite VIII being as wide as in *C. gallinae*, and in the paramere and the distal portion of sternite IX being broader.

Hab. E. Turkestan: Narankol and Djarkent, off *Gallus domesticus* (W. Rückbeil), two ♂♂.

6. *Ceratophyllus borneensis* sp. nov.

Near *C. agathus* J. & R., *Ectoparasites*, i. p. 225, no. 6, text-fig. 219 (1922), from Sumatra.

♂. Seventh tergite with short dorsal median process. Eighth tergite large, with a dorso-apical row of nine to eleven long bristles, seven to nine lateral bristles, and two long ventral ones (in type accompanied by a short one). Eighth sternite on each side with a bristle, proximally of which the segment is divided into a right and a left lobe, the lobes ovate-lanceolate, distally membranaceous, entire, not fringed; proximally the segment with a short narrow vertical projection. Manubrium of elasper without hump on dorsal margin; process P (text-fig. 6) narrow, apically dilated on the posterior side into a nose; exopodite broadest distally, recalling *C. levis* J. & R., *Ectoparasites* i. p. 219, no. 3, text-fig. 213 (1922), from the Malay peninsula, but its distal margin not incurved between the two sets of bristles, bearing six heavy bristles, of which two are dorsal and four subventral. Apical portion of sternite IX much broader than in *C. levis*, with a lateral row of longish slender bristles and distally with numerous small ones.

♀. Sternite VII deeply sinuate, the upper lobe narrow and projecting much more than the ventral lobe (text-fig. 7).

Length. ♂ 2.1-2.2, ♀ 2.3 mm.

Hab. Borneo: Mt. Murud, Oct. 1922 (Dr. E. Mjöberg), two ♂♂, one ♀ on *Sciurus jentinki*.

7. *Stivalius mjobergi* sp. nov.

♀. Abdomen with two combs, the spines of which are similar to those of the prothoracic comb, but somewhat smaller, the first abdominal comb containing sixteen spines, the second eight. In *S. jacobsoni* J. & R. (1922), from Sumatra, the abdomen bears only one comb. Lobe above the sinus of sternite VII (text-fig. 8) acuminate, the ventral lobe rounded. Spermatheca recalling that of *S. synetus* J. & R. (1922), its head being widest near the tail.

Length (of distended mounted specimen) 4.3 mm.

Hab. Borneo: Mt. Murud, off *Tupaia montana* (Dr. E. Mjöberg), one ♀.

8. *Stivalius rhaebus* sp. nov.

♂. Related to *S. robinsoni* Roths. (1905). Spinose process of sternite VIII (below sternite IX) much shorter. Exopodite F (text-fig. 9) much more strongly curved, bearing a row of three large bristles close to apex. Distal portion of ventral arm of sternite IX less curved than in *S. robinsoni*, with a dorso-apical tooth and a subapical lateral flap which bears small marginal bristles, above this flap, on inside, a patch of small hairs; at ventral margin at some distance from apex a row of five short blunt spines and proximally of them some small hairs and two strong curved bristles.

♀. Sinus of sternite VII (text-fig. 10) larger than in *S. robinsoni*; head of spermatheca narrower; as in *S. robinsoni* tergite VIII proximally with an

incrassation which in the main is tripartite, one branch extending upwards, a second downwards, and a third distad.

Hab. Borneo : Mt. Dulit, off *Sciurus brooksi* (Dr. E. Mjöberg), one pair, type ♂.

More detailed descriptions and figures of the preceding three species were sent to Sarawak in 1923, but do not seem to have as yet been published. As I have to refer to these species in the course of my researches in Siphonaptera the publication of the present preliminary descriptions is a necessity to me.

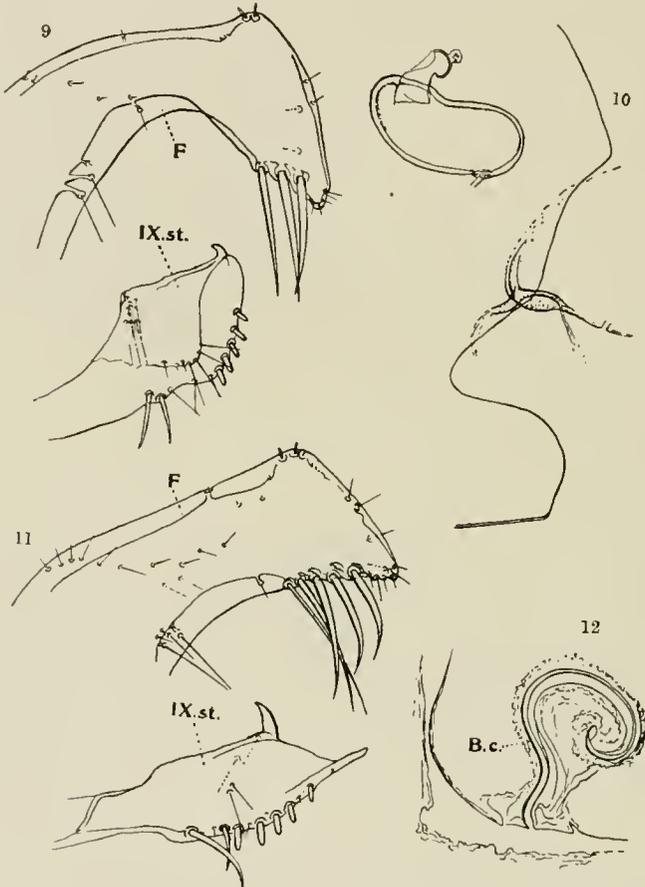


FIG. 9.—*Stivalius rhaebus* ♂.
 „ 10. „ „ ♀.

FIG. 11.—*Stivalius lonchus* ♂.
 „ 12. „ „ *spiramus* ♀.

9. *Stivalius lonchus* sp. nov.

♂. Likewise related to *S. robinsoni*. The spiniform bristles of the ventral process of sternite VIII much longer. Exopodite F (text-fig. 11) not essentially different, but sternite IX peculiar, ending with a short straight process and bearing a prominent dorsal hook.

Hab. Borneo : Mt. Poi, 5,000 ft., Oct. 1923, from *Tupaia* spec. (Dr. E. Mjöberg), one ♂.

10. *Stivalius spiramus* sp. nov.

♀. Bristles as in *S. robinsoni*, but more numerous, particularly on the abdomen: in front of the postmedian row forty-one smaller bristles on tergite II on the two sides together, on III forty, on VI thirty-six, on VII thirty-three, on basal sternite on one side twenty, on the other nineteen small lateral bristles, sternite VII with a row of eleven large bristles and fifty-three small ones on the two sides together. Anal sternite proximally more convex than in *S. robinsoni* ♀, the bristles on this basal portion more numerous than in that species. Sternite VII almost as in *S. rhaebus* (text-fig. 10), the upper angle more rounded. Tergite VIII without the incrassation of *S. robinsoni* and *S. rhaebus*; the upper (= posterior) wall of the oviduct more strongly chitinised than usually; bursa copulatrix (text-fig. 12, B.c.) long and involute, quite different from that of the allied species.

Hab. Philippines: Baguio Bengue, viii.1923, from *Rattus quereci* (E. H. Taylor), one ♀.

11. *Stenopsylla intermedia* Wagn. (1901).

The examination of further material proves that we were wrong when we stated in *Ectoparasites*, i. p. 25 (1915), that this species "does not appear to be split up into geographical varieties." The specimens before me represent four subspecies, distinguished by differences in the tail-ends, at least in the ♂♂.

(a) *S. intermedia intermedia* Wagn. (1901).

Syn.: *Stenopsylla cruzi* Cunha, 1914 (Brazil).

♂. The apical margin of the clasper distinctly incurved at some distance from the deep sinus which separates the dorsal, bristle-bearing, process P¹ from the body of the clasper, a short second process P² being formed, which is broad and rounded.

♀. The lobe above the sinus of sternite VII long, the proximal outline of the internal incrassation almost semicircular, the bristles of VII st. stout, the upper one nearly always vertically above the subapical pair.

Hab. S.E. Brazil and Paraguay; from *Didelphys azarae*, *Marmosa cinerea*, *Chironectes minimus*, *Metachirus opossum* and *M. nudicaudata*. A series.

(b) *S. intermedia oxyura* subsp. nov.

♂. Process P² of clasper (text-fig. 13) narrower than in the previous form and longer.

♀. As in *S. i. intermedia*, the upper lobe of sternite VII long (text-fig. 14) and mostly rather narrower than in the previous form.

Hab. Venezuela: S. Esteban (S. M. Klages); on *Didelphys marsupialis*, *Marmosa cinerea* and *M. murina*. A series.

(c) *S. intermedia cophia* subsp. nov.

♂. Apical margin of clasper very slightly or not at all incurved, the angle of P² not projecting as a separate process (text-fig. 15).

♀. Sternite VII less deeply sinuate than in the previous forms, the lobe above the sinus shorter and more obtuse; the upper bristle of this sternite more proximal

than the subapical pair, the proximal outline of the incrassation oblique (text-fig. 16).

Hab. Panama : Boquete (J. H. Batty), off *Didelphys* "azarae" (probably = *D. marsupialis etensis*), type ; Colombia : Pacho (Rev. P. Apollinaire-Marie), off *D. marsupialis* ; Ecuador : Paramba (W. F. H. Rosenberg), from *D.* "azarae." A series.

(d) *D. intermedia vidua* subsp. nov.

♀. The sinus of sternite VII (text-fig. 17) very shallow, the incrassation weak, the upper bristle far in front of the subapical pair and thin.

Hab. Mexico : Misantla, off *Didelphys*, one ♂.

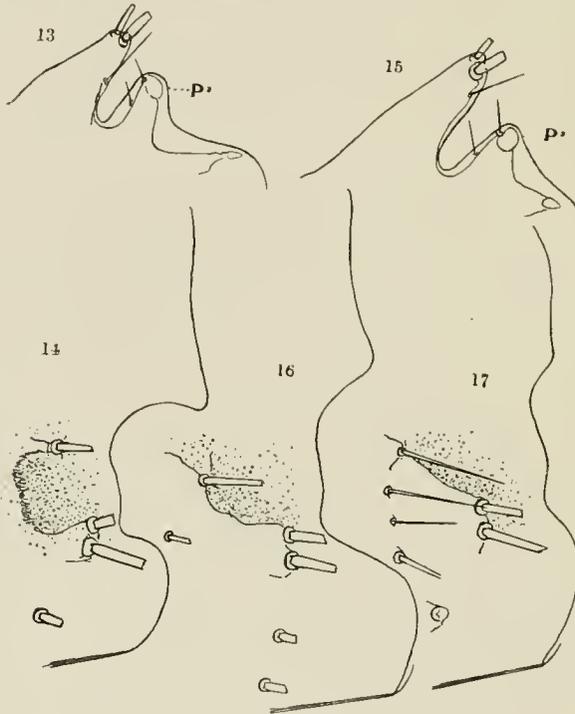


FIG. 13.—*Doratopsylla intermedia oxyura* ♂.
 .. 14. " " " " ♀.
 .. 15. " " " " *copha* ♂.
 .. 16. " " " " " ♀.
 .. 17. " " " " " *vidua* ♂.

12. *Doratopsylla antiquorum discreta* subsp. nov.

♂. Differs from *D. a. antiquorum* Roths. (1904, S.E. Brazil) in the lower antepygidial bristle being nearly as long as the upper, though thinner, and in the shape of the elasper : the nose of the posterior side of P (text-fig. 18) is placed about halfway between the lower apical bristle and the base of the exopodite F, the corresponding angle and pan of F being moved upwards to one-third of the proximal margin of F ; the apical bristles of P farther apart than in Brazilian examples (*D. a. antiquorum*).

Hab. Colombia : Cundinamarca, off *Peromyscus adustus*, two ♂♂.

13. *Ctenophthalmus agyrtes graecus* subsp. nov.

♂. Similar to *Ct. agyrtes provincialis* Roths. (1910), but process P² of elasper (text-fig. 19) shorter, the exopodite, therefore, projecting much more than in *provincialis*, apex of ninth sternite more rounded.

♀. Like that sex of *provincialis*.

Hab. Greece: Pelion, Thessaly, vi. 1922, found in rotten wood (E. Moczarski), two pairs.

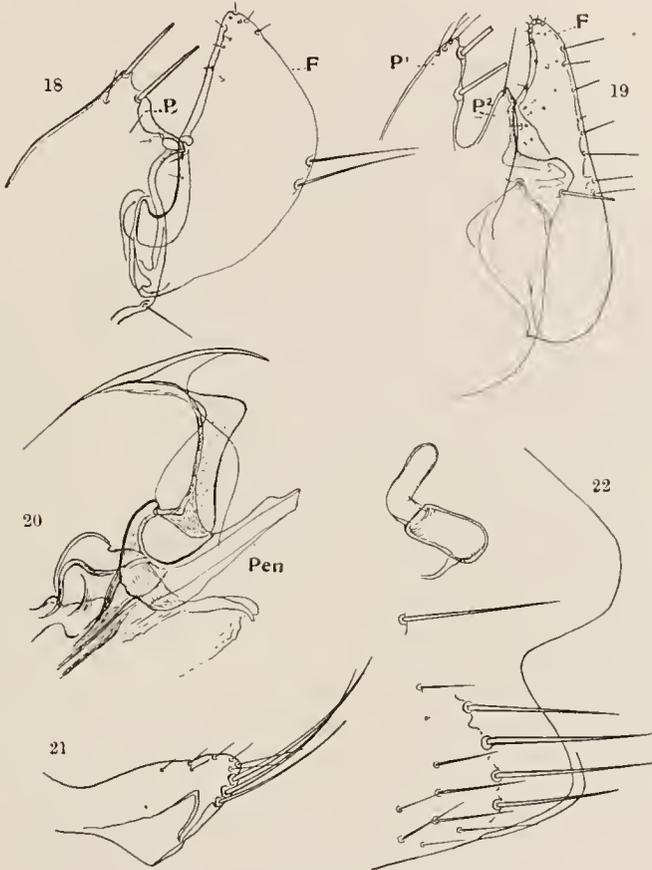


FIG. 18.—*Doratopsylla antiquorum discreta* ♂.
 ,, 19.—*Ctenophthalmus agyrtes graecus* ♂.
 ,, 20. ,, *moratus* ♂.
 ,, 21. ,, ,, ♂.
 ,, 22. ,, ,, ♀.

14. *Ctenophthalmus moratus* spec. nov.

Belongs to group II of our Key published in NOVITATES ZOOLOGICAE, xx. p. 560 (1913), being related to *Ct. cabirus*, *Ct. atomus*, etc. Both sexes are easily recognised by the tail-ends. In the ♂ the eighth sternite is very large, the ventral arm of the ninth sternite very short, and the penis is armed with a long dorsal apical sickle-shaped hook. The ♀ agrees with *Ch. cophurus* in the distal

bristles of the eighth tergite being placed at some distance from the margin, but differs from that species in the mesonotum bearing more than two rows of bristles, in the spermatheca being smaller, and the seventh sternite resembling that of *Ct. cabirus*.

♂. Sternite VIII very large, apically almost evenly rounded, bearing ventrally on each side twelve to sixteen bristles. Process P of clasper about as long as broad, obliquely truncate, slightly sinuate, bearing four long bristles, besides some small ones: two at upper angle, the third below the small apical sinus, and the fourth ventral, placed about as far from the ventral apical angle of P as the third bristle. Exopodite F more than twice as long as broad, the breadth measured from the nose of the anterior margin straight to the hindmargin, apical margin more or less strongly rounded from angle of anterior margin to posterior apical angle and bearing a row of nine to thirteen small bristles; there are several small bristles at the apical angle, the posterior margin slightly concave from apex to about middle, here angulate, below this angle three bristles (small, long, medium). Ventral arm of ninth sternite (text-fig. 21) rounded-triangular, a little longer than broad, bearing three long bristles, which are ventral, and seven or eight small ones. Armatures of parameres large (text-fig. 20), with a sharp dorsal apical hook each side, armature of duct ending with a well-chitinised horizontal tube (Pen), which is ventral and bears a small tooth dorsally near middle, between this tube and the dorsal hooks on each side a vertical sclerite, the posterior side of which is more or less incurved.

♀. Sternite VII deeply sinuate (text-fig. 22), the upper lobe broad and evenly rounded, the lower lobe short, broad, a subapical row of five long bristles on each side, the upper one far removed from the others, in the gap or near it a smaller bristle, ventrally on each side four to eight small ones in front of the row. On eighth tergite a subventral row containing six long and slender bristles and one or two smaller ones, above the row a long bristle and four to eight smaller ones, on each side of the body, the two distal bristles of the row equal in size or nearly and remote from the apical margin, on inside four to six small bristles. Head of spermatheca somewhat shorter than the tail.

Length ♂ 2.1-2.4 mm., ♀ 2.4-2.6 mm.

Hab. Gold Coast: Kumasi, off *Typomys trivirgatus*, discovered by Major C. M. Ingoldby, R.A.M.C., and kindly sent to us by Lt.-Col. W. P. MacArthur, R.A.M. College, London. A series.

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NOVITATES ZOOLOGICAE

Vol. XXXIII.

FEBRUARY 1927.

No. 4.

SUPPLEMENTAL NOTES ON THE AVIFAUNA OF YUNNAN.

By LORD ROTHSCHILD, F.R.S.

JUST as my article, "On the Avifauna of Yunnan, with Critical Notes," had passed through the Press, I received Mr. J. H. Riley's paper, "On a collection of birds from the Provinces of Yunnan and Szechwan, China, made for the National Geographical Society by Dr. Joseph H. Rock." Of these birds Mr. Riley says that they fall under 244 forms, of which 3 were apparently unnamed. Of these 2, *Ithaginis rocki* and *Strix aluco nivipetens*, were described by Mr. Riley in a preliminary article (*Proc. Biol. Soc. Wash.*, vol. xxxviii, pp. 9-12, 1925); and *Luscinia davidi gloriosa* by Dr. P. Suschkin (in the *Auk*, vol. xliii, pp. 181-183, 1926). These 3 birds therefore I was able to discuss fully in the above-mentioned paper; from which it will be seen that I have proved that *L. davidi gloriosa* is a pure synonym of *L. davidi davidi*; that I consider *S. a. nivipetens* as either a synonym of *S. a. nivicola* or of *S. a. harterti*; but that both of Yunnan birds and the Chinese *S. a. harterti* we have too few specimens to finally decide whether all 3 are synonymous with *nivicola*, or if *nivicola* and *harterti* are Eastern and Western subspecies. Therefore there remains only *Ithaginis rocki* as the single bird in Dr. Rock's collection which is new to science. There are, however, altogether 12 forms in the collection new to the avifauna of Yunnan, one of which, *Urocissa flavirostris flavirostris* Blyth, was added at the same time, viz. early in 1925, both by George Forrest and Dr. Joseph H. Rock, so there remain 11 forms new to Yunnan obtained solely by Dr. Rock.

Of the 244 forms recorded by Mr. Riley, 1, *Coloeus neglectus* (Schleg.) (239), is undoubtedly a juvenile melanistic mutant of *C. dauuricus* (238); as to whether Mr. Riley is right in acknowledging the validity of Dr. Suschkin's *C. d. khamensis* or not, I am unable to decide at present, for, although I have a large series of the Daurian Jackdaw, I have not enough material from the BREEDING-PLACES of the two supposed races.¹ In the case of *Hypopicus hyperythrus subrufinus* (59) Mr. Riley has fallen into the same error as I did in my four former articles; it must stand as *Dryobates hyperythrus hyperythrus* (Vigors). Mr. Riley has identified Dr. Rock's *Muscicapa tricolor* (70) examples (6) as *M. t. cerviniventris*, but my birds from the same locality are undoubtedly *tricolor tricolor*, so I expect his are also this race. Mr. Riley records *Pericrocotus brevirostris affinis* and *P. b. ethelodus*

¹ It has been proved by Dr. Weigold's series that all the dark birds, i.e. *neglectus* Schleg., are juvenile; but it is not absolutely proved yet that all the light birds, i.e. *dauuricus* Pall. are adult.

from Tengyueh and Lichiang respectively; these are the birds I have recorded as *P. b. affinis* and *P. b. styani* respectively, and they must undoubtedly stand under those names till a larger Hupeh series decides if *styani* and *ethelogus* are different or not. Under No. 83 Mr. Riley records the glossless grey-breasted *Microscelis* as *psaroides concolor*; on pages 301-302 (NOVIT. ZOOLOG. xxxiii, 1926) I think I show that the Yunnan birds are NOT *concolor*, but a similar phase of *leucocephalus leucocephalus* which alone of the seven subspecies of *leucocephalus* is polychromatic. (Though inadmissible under the International Rules of Nomenclature Dr. Staudinger's method of naming forms of *lepidoptera* alone expresses the status of Chinese grey-breasted *Microscelis* satisfactorily; under it the following would be the terminology: *Microscelis leucocephalus concolor* (Blyth) var. (= subsp.) et ab.)

No. 88, *Babax lanceolata*, is recorded as *bonvaloti* Oust., but in the article just published I consider I have shown that *bonvaloti* has no standing.

Under No. 95 Mr. Riley records the form of *Pomatorhinus ruficollis* obtained by Dr. Rock as *bakeri*, but true *bakeri* does not occur in West Yunnan (it is much redder below than West Yunnan birds), and Dr. Rock's birds must stand as *Pomatorhinus ruficollis similis* Rothsch. Under No. 96 Mr. Riley records Dr. Rock's specimens of *macdellandi* under the name of *m. dedekensi*, and says that *odicus* Bangs & Phill. appears to him to be only a synonym of Oustalet's *dedekensi*. This I am not prepared to accept, as the Yunnan examples are much more vivid in colour than Thibetan and Szechwan birds. I also do not consider *macdellandi* a subspecies of *erythrogonis*, for *macdellandi odicus* and *erythrogonis imberbis* occurs in the same area. I am unable to separate *sannio sannio* and *sannio albosuperciliaris*; the large series at Tring and in the British Museum shows every gradation from the same place. Mr. Riley has followed my fourth paper in the question of *Yuhina diademata* and *Y. ampelina*, but the 1926 (fifth) article I think finally clears up the case. Under No. 184 I believe Mr. Riley has wrongly identified Dr. Rock's bird as *vinaceus*; it should be *glaucogularis*. No. 204 should be *Eophona migratoria harterti*. No. 223 Mr. Riley calls *Emberiza elegans elegantula*, but Dr. Hartert and I have not recognised *elegantula*.

Nos. 225 and 226 are both recorded as subspecies of *godlewskii*, but both Dr. Hartert and I consider *godlewskii* only to be a subspecies of *Emberiza cia*; therefore these must stand as *Emberiza cia yunnanensis* and *E. cia omissa*. Nos. 238 and 239 must be united, as *neglectus* is only a juvenile melanistic mutant of *Coloeus dauricus*. Mr. Riley follows Bangs & Phillips and Kleinschmidt in uniting *Nucifraga caryocatactes macella* and *N. c. yunnanensis*; all I can repeat is that my series of *yunnanensis* do not agree with *macella*, as they have as a rule the zone of white spots more extended. For the present I think they must be kept separate. Thus there remain 242 species and subspecies obtained by Dr. Rock, and the following are the 11 new to Yunnan:

- Ithaginis cruentus rocki* Riley.
- Larus canus major* Middendorff.
- Ibidorhyncha struthersi* Vig.
- Anas pocillorhyncha haringtoni* (Oates).
- Mergus merganser orientalis* Gould.
- Falco regulus insignis* (Clark).
- Bubo bubo setschuanus* Reichenow.

Muscicapula superciliaris astigma (Hodgs.).
Grandala coelicolor Hodgs.
Luscinia tschebaiewi Przew.
Emberiza cia omissa Rothsch.

The number of examples listed is 829 ; but under Nos. 7, 8, 9, 43, 53, 56, 69, 71, 81, 82, 87, 88, 89, 90, 91, 93, 96, 97, 100, 106, 108, 109, 111, 122, 123, 128, 133, 134, 141, 143, 146, 150, 169, 177, 180, 185, 186, 193, 194, 196, 215, 225, 232, 235, there are no figures given, only the word series preceded by fair, good, large, or fine respectively.

CORRECTIONS AND CRITICISMS TO THE ARTICLE ON THE
AVIFAUNA OF YUNNAN, pp. 189-343

BY LORD ROTHSCHILD

I SENT a separate copy of this article to Dr. Erwin Stresemann, who communicated to me a number of notes, which I embody below.

Nos. 24-26: Dr. Stresemann points out that the specific name *javanica* Rafinesque is older than *pugnax* Temm, therefore these three forms must stand as follows: 24. *Turnix javanica rostrata* Swinh.; 25. *Turnix javanica taioor* (Sykes); 26. *Turnix javanica plumbipes* (Hodgs.). As I had not got Rafinesque's work in which *javanica* is described, I may be excused for missing this name.

No. 113: Dr. Stresemann says he is convinced that *Accipiter affinis* Gurney and *A. virgatus* belong to the same "Formenkreis." I do not unite them, as I am not yet sure that this view is correct.

No. 147: Dr. Stresemann asks, "How does *Eudynamis scolopaceus enigmaticus* differ from *E. s. chinensis* Cab. & Heine?" I at once admit that I overlooked the footnote (p. 52, *Museum Heineanum*, vol. iv) in which Messrs. Cabanis & Heine describe their *E. chinensis*; therefore my name of *scolopaceus enigmaticus* sinks as a synonym of *scolopaceus chinensis* Cab. & Heine.

No. 154: Dr. Stresemann draws my attention to the fact that since publication of Dr. Hartert's vol. ii of *Palaeartic Birds* it has been ascertained the name of *intermedius* Vahl was not published till 1797, so that Latham's name of *poliocephalus* (1790) must be used. No. 154 therefore must stand as *Cuculus poliocephalus poliocephalus* Lath.

No. 205: I cannot agree with Dr. Stresemann, from my present knowledge, that *Caprimulgus monticola* is a subspecies of *C. affinis*.

No. 207: Dr. Stresemann points out that the Swiftlet *brevirostris* McClell. does not belong to the "Formenkreis" of *fucifaga*, but to that of *vestita*; therefore No. 207 must stand as *Collocalia vestita brevirostris* (McClell.).

No. 229: Dr. Stresemann expresses the opinion that *sinensis* is a subspecies of *leschenaulti*. It is, however, rather remarkable that whereas in the three races hitherto placed under *leschenaulti* the outer pair of rectrices are practically of the same length as the next outermost pair, in *sinensis* the outermost pair are very much shorter than the next outermost pair of rectrices. In coloration and pattern *sinensis* and *leschenaulti* show practically no differences.

Nos. 293-315: In vol. i, p. 624, of *Vög. paläarkt. Faun.* Dr. Hartert has united under the generic name *Ianthocincla* Gould the genera *Trochalopteron*, *Babax*, *Kaznakowia*, *Ianthocincla*, and *Pterorhinus*, but although hinting at the generic identity of *Garrulax*, he still retained this as a genus for the large-crested forms temporarily. In my five articles on the Avifauna of Yunnan, however, I have gone the "whole hog" and lumped all these birds under the one genus *Ianthocincla*, and I think rightly. Some ornithologists will, no doubt, accuse me in this of inconsistency, as I have kept the Scimitar-babblers of the

genera *Pomatorhinus* and *Xiphirhynchus* separate, but the very exaggerated bill of the latter points to totally different habits. Now Dr. Stresemann points out that *Garrulax* Less. (1831) is older than *Ianthocinclia* Gould (1837), so *Ianthocinclia* in Nos. 293-315 must sink and be replaced by *Garrulax*.

No. 400: Messrs. Mathews and Iredale were the authors responsible for refusing to admit the name *inornatus* for this bird and rechristening it *humei praemium*; Dr. Stresemann disagrees with their view and calls it *inornatus inornatus*. I, however, consider the matter is still so doubtful that for the present I prefer to use the name of *humei praemium*.

Nos. 405-408: Dr. Stresemann (*Orn. Monatsb.* 1924, pp. 8-10) sets out that the birds hitherto placed in the single "Formenkreis" *trochiloides* must now be divided into two, viz. *trochiloides* and *davisoni*. I believe Mr. Kinnear arrived independently at the same conclusion. I am not personally sufficiently *au fait* with the genus *Phylloscopus* (sensu extensiore) to venture to dogmatise on this question, but in view of the almost similar status in the white eyes *Zosterops* of the "Formenkreise" *simplex* and *palpebrosa*, I think Dr. Stresemann is correct in his conclusions, and therefore I consider Nos. 405 and 408 must stand as *Phylloscopus trochiloides trochiloides* (Sund.) and *Phylloscopus trochiloides claudiae* respectively, while Nos. 406 and 407 must be called *Phylloscopus davisoni davisoni* (Oates) and *Phylloscopus davisoni disturbans* (La Touche).

Nos. 442-444: Dr. Stresemann in drawing attention to these birds suggests that Nos. 442 and 444 of my list are the same. In his paper on "*Cyornis*" (*Orn. Monatsb.* 1925, pp. 45-53) he unites *glaucomans* Thay. & Bangs and *dialilaema* Salvad. with *rubeculoides* as subspecies of *rubeculoides*; I unfortunately have put down *glaucomans* as a subspecies of *tickellii*, whereas I placed *dialilaema* as a race of *rubeculoides*; but I maintain that whether you consider the forms with narrow central throat-bands of orange buff and those with the whole throat more or less orange buff are the same or different, the fact remains that the West Yunnan birds are smaller and the Eastern and Central Yunnan are larger; therefore they are not the same, and No. 442 must be called *Muscicapa rubeculoides glaucomans* and the West Yunnan portion of those under No. 444 *Muscicapa rubeculoides dialilaema* (Salvad.).

Nos. 514 and 518-522: Dr. Stresemann writes to me that: (1) In the Stötzner collections the series from Kwan-t sien contains all intergradations between *Paradoxornis alphonsiana* and *P. webbiana suffusa*; and (2) that although he did not possess examples of *Paradoxornis brunnea* he was convinced that it also belonged to the "Formenkreis" of *webbiana*. As regards (1), *alphonsiana* has only been recorded from East and Central Yunnan, not from West Yunnan, and in Eastern Yunnan it occurs alongside *webbiana elizabethae* with no intergrading examples; therefore until we know more about the breeding haunts of all the *webbiana* and *alphonsiana* races I prefer to keep them separate. In regard to (2), I have large series of *brunnea* from Tengyneh (Momiën), but very few from Lichiang; of *ricketti* I have examples from Yangtze Valley and Lichiang, and it appears from these examples that as a rule *ricketti* is the higher mountain race (from 9,500 ft. upwards), whereas *brunnea* occurs at from 5,000-6,500 ft. This would go a long way to proving Dr. Stresemann's contention, but as the throat and cheeks of *brunnea* are uniform dark rufous, not pinkish and striped, I think we must await breeding series before uniting *brunnea* to the *webbiana* "Formenkreis."

No. 565 : Dr. Stresemann is of opinion that *Aethopyga dabryi* is a subspecies of *gouldiae* ; I have not at the moment access to sufficient material to decide this question.

No. 639 : Dr. Stresemann considers that *tenuirostris* does not belong to the "Formenkreis" of *Oriolus chinensis*. In regard to this and No. 638 I have followed Colonel Meinertzhagen's list of the *Oriolidae* as the latest revision, and I still believe he is right.

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