

NOVITATES ZOOLOGICAE.

Vol. XXXIV, 1927-28.

NOVITATES ZOOLOGICAE.

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. XXXIV, 1927-28.

(WITH ELEVEN PLATES.)

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NOVITATES ZOOLOGICAE

Vol. XXXIV.

AUGUST 1927.

No. 1.

TYPES OF BIRDS IN THE TRING MUSEUM.

BY ERNST HARTERT, PH.D.

B. Types in the General Collection. VIII.

Continued from NOVITATES ZOOLOGICAE, vol. xxiii, 1926, p. 357. 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, 259-276; 1926, pp. 344-357.

COLUMBAE.

1539. **Treron calva poensis** Hart. & Goods. = *Treron calva poensis*.

Treron calva poensis Hartert & Goodson, *Nov. Zool.* 1918, p. 350 (Island of Fernando Po, 5 examined).

Type: Adult (marked ♀, but probably ♂), Banterbare, Fernando Po, 12.ii.1904. E. Seimund coll.

1540. **Treron calva ansorgei** Hart. & Goods. = *Treron calva ansorgei*.

Treron calva ansorgei Hartert & Goodson, *Nov. Zool.* 1918, p. 352 (Benguella, Mossamedes).

Type: ♂ ad. Huilla, Mossamedes, 21.ii.1906. W. J. Ansorge coll. No. 298 (16 examined).

1541. **Treron calva brevicera** Hart. & Goods. = *Treron calva brevicera*.

Treron calva brevicera Hartert & Goodson, *Nov. Zool.* 1918, p. 353 (Kilimanjaro, Escarpment, Athi River, Kikuyu, Machakos).

Type: ♂ ad., Moschi, foot of Kilimanjaro, 13.iv.1916. Angus Buchanan coll.

† 1542. **Vinago waalia cinereiceps** Neum. = *Vinago waalia*.

Vinago waalia cinereiceps Neumann, *Journ. f. Orn.* 1904, p. 341 ("Am mittleren Gelo").

Type: ♂ Gelo River, not far from Lake Tata, Jamboland, 17.v.1901. Osear Neumann coll. No. 1216.

1543. **Treron curvirostra hainana** Hart. & Goods. = *Treron curvirostra hainana*.

Treron curvirostra hainana Hartert & Goodson, *Nov. Zool.* 1918, p. 356 (Hainan).

Type: ♂ ad., Mt. Wuchi, Hainan, 5.iv.1903. Katsumata coll., 11 males and 5 females examined.

1544. **Osmotreron wallacei pallidior** Hart. = *Treron pompadora pallidior*.

Osmotreron wallacei pallidior Hartert, *Nov. Zool.* iii, p. 178 (1896—Djampea and Kaho).

Type: ♂ ad., Djampea Island, south of Saleyer and Celebes, December 1895. Alfred Everett coll.

1545. *Osmotreron everetti* R. = *Treron pompadora everetti*.

Osmotreron everetti Rothschild, *Nov. Zool.* i, p. 41 (1894—Sulu Islands, type Bongao).

Type: ♂ ad. Bongao Island, July 1893. Alfred Everett coll.

1546. *Treron pompadora goodsoni* subsp. nov.

Easily separable from *T. p. wallacei* by its paler coloration on the upperside, and in that respect nearest to *T. p. pallidior*, from which it differs in having a less high bill, the grey on the head not extended so far back, the throat being yellowish, not pale grey, and the underside is more greenish.

Type: ♂ ad., Tomia, Tukang Besi Islands, S.E. of Celebes, 24.xii.1901. Heinrich Kühn coll. No. 4337.

“Iris dull yellowish brown or dark burnt sienna red. Feet dark red. Bill pale yellow, base greenish.” Named after Arthur Goodson, who assisted me a good deal in my studies on pigeons.

In my article on the birds of the Tukang Besi Islands in *Nov. Zool.* 1903, the only information on the birds of that group that I am aware of, I called these pigeons “*Treron griseicauda wallacei*,” but that was not quite correct. This adds another to the specialised forms of the Tukang Besi group; the others are: *Otus manadensis kalidupae*, *Tanygnathus megalarhynchus viridipennis*, *Dicaeum kühni*, *Cinnyris infrenata*, *Zosterops flavissima*, *Oriolus chinensis oscillans*, and *Hypotaenidia torquata kuehni*.

As the males of *T. p. goodsoni* are moulting or worn I cannot give measurements. We had it from Tomia, Kalidupa, Binongka, and Wantjee Islands.

[Except by Goodson and myself very little has so far been done to group the various green pigeons of this group in a natural way. One is tempted to unite the *curvirostra* and *pompadora* forms as subspecies of one species, as the character of the obvious bare “cere” between the hard rhamphotheca and the feathering on the forehead is bridged over by forms with a very short “cere” to those with a very long cere; thus this character might as well be subspecific, but there are vast areas where forms of both groups occur together: *T. curvirostra nipulensis* and *T. pompadora phayrei* in India, etc., *T. curvirostra curvirostra* (or near subspecies), and *T. pompadora axillaris* in the Philippines. In the various forms of *T. pompadora* the various colorations of the under tail-coverts, head, and breast are clearly connected and only subspecific characters. The generic separation of *Treron* and *Osmotreron* cannot, however, be possibly admitted.]

[I now recognise the following forms of *Treron pompadora*:

Treron pompadora pompadora (Gm.) 1789. Ceylon.

Treron pompadora chloroptera Blyth, 1845. Nicobars.

Treron pompadora andamanica Richmond, 1903. Andamans. (A somewhat poor form; the supposed smaller size is by no means constant, the colour is *not* darker, but the green more yellowish, except in one specimen from Port Blair, also on South Andaman, whence the type came.)

Treron pompadora axillaris Bp. 1854. Philippine Islands.

Treron pompadora everetti (R.) 1894. Sulu Islands (Bongao typical locality).

Treron pompadora affinis (Jerd.) 1840. Indian Peninsula. (There is no reason to reject the name *affinis* of 1840, because in 1845 the same author described the male as *malabarica*!)

Treron pompadora griseicauda Gray (ex Bonaparte), 1856. Java.

Treron pompadora sangirensis Brügg. 1876. Sanghir Islands.

Treron pompadora wallucei Salvad. 1893. Celebes.

Treron pompadora pallidior Hart. 1896. Djanpea and Kalao.

Treron pompadora goodsoni Hart. Antea, Tukang Besi Islands.

Treron pompadora vordermani Finsch. 1900. Kangean Islands, north of Bali.

Treron pompadora teysmani Schleg. 1879. Sumba Island.

Treron pompadora aromatica (Gm.) 1788. Buri.

Treron pompadora phayrei (Blyth). Assam to Burma to Tavoy, and Cochin China.

Apparently also *Treron psittacea* (Temm.) from Timor, and *Treron floris* Wall. from Flores, Solor, Lombok, and Alor, and according to Schlegel, also Sumbawa, should be regarded as subspecies of *pompadora*, although they do not have the chestnut purple mantle, etc.]

1547. ***Treron bicincta leggei*** Hart. = *Treron bicincta leggei*.

Treron bicincta leggei Hartert, *Nov. Zool.* 1910, p. 193 (Ceylon).

Type: ♂ ad., Ceylon, 9.vi.1889. Bruno & H. Geisler coll. No. 7069.

(The Ceylon form is distinctly smaller than the one inhabiting the mainland of India, and it must therefore be separated as above.)

E. C. Stuart Baker, both in his lovely monograph of the Indian Pigeons, 1913, and in his somewhat hastily published Hand-list of the Birds of the Indian Empire, 1923, calls the birds from Ceylon and the Indian Peninsula "*Treron bisincta bisincta*" (sic), those from Orissa and Bengal to Burma and Hainan "*Treron bisincta domvillii*." Apart from the repeated erroneous spelling (*T. bicincta* was correctly spelt with a *c* by Jerdon, and Swinhoe called the Hainan form *domvillii*, in honour of Lieutenant Domvile), this is not correct. Ceylon birds are smaller than Jerdon's types, and the latter agree with the birds from Bengal, Assam, etc. Wings of Ceylon males 142-152, once 153, types of Jerdon ♂ 162, ♀ 158.5 mm., males of other Continental birds 157 to 163 and even 165. Hainan birds agree in size with *T. bicincta bicincta*, but in *Nov. Zool.* 1910, p. 193, I stated colour differences, which cannot be overlooked, especially the pale under tail-coverts of the males; the Hainan form appears also to occur in Tonkin. Count Gyldenstolpe is possibly right when he calls the Siamese specimens *domvillii*, but this cannot be known without a careful re-examination of his specimens, as he only states that they are larger than his *bicincta*, probably having in mind Ceylon specimens.)

1548. ***Ptilinopus cincta ottonis*** Hart. = *Ptilinopus cinctus ottonis*.

Ptilinopus cincta ottonis Hartert, *Nov. Zool.* 1904, p. 178 (Dammar and Babber Islands).

Type: ♂ ad., Wulur, Dammar Island, 4.xi.1898. Heinrich Kühn coll. No. 953.

Named after Dr. Otto Finsch.

1549. ***Ptilinopus albocinctus baliensis*** Hart. = *Ptilinopus cinctus baliensis*.

Ptilinopus albocinctus baliensis Hartert, *Nov. Zool.* 1896, p. 553 (Bali).

Type: ♀ ad., Bali, 2,000 to 3,000 feet, April 1896. William Doherty coll.

1550. **Ptilinopus everetti** Rothsch. = *Ptilinopus cinctus everetti*.

Ptilinopus everetti Rothschild, *Bull. B.O. Club*, vii, p. xxxiv (Feb. 1898—Alor Island).

Type: ♂ ad. Alor, April 1897, Alfred Everett coll.

Also found on the island of Pantar.

1551. **Ptilinopus mangoliensis** R. = *Ptilinopus gularis mangoliensis*.

Ptilinopus mangoliensis Rothschild, *Bull. B.O. Club*, vii, p. xxxiv (Feb. 1898—Sula Mangoli).

Type: ♂ ad., Sula Mangoli, October 1897. William Doherty coll.

1552. **Ptilinopus dohertyi** R. = *Ptilinopus dohertyi*.

Ptilinopus dohertyi Rothschild, *Bull. B.O. Club*, v, p. xlvi (June 1896—Sumba or Sandalwood Island).

Type: ♂ Taimanu, Sumba Island, February 1896. William Doherty coll.

Figured *Nov. Zool.* 1896, pl. xii (see also pages 579, 589).

1553. **Ptilinopus xanthogaster roseipileum** Hart. = *Ptilinopus xanthogaster roseipileum*.

Ptilinopus xanthogaster roseipileum Hartert, *Nov. Zool.* 1904, p. 179 ("Roma, Moa, Kissar, Letti, and Wetter").

Type: Adult, Roma, II. viii. 1902. Heinrich Kühn coll. No. 5384.

1554. **Ptilinopus chrysocephalus pelingensis** Hart. = *Ptilinopus melanocephalus pelingensis*.

Ptilinopus chrysocephalus pelingensis Hartert, *Nov. Zool.* v, p. 135 (1898—Peling Island, between Sula Mangoli and East Celebes).

Type: Adult, Peling Island, between May and August 1895. Cursham coll.

1555. **Ptilinopus granulifrons** Hart. = *Ptilinopus granulifrons*.

Ptilinopus granulifrons Hartert, *Bull. B.O. Club*, vii, p. xxxv (1898—Obi Major, Central Moluccas).

Type: ♂ ad., Obi Major, September 1897. William Doherty coll.

It has been suggested that a special genus should be created for this form, but there is equally much reason to consider it a subspecies of *Ptilinopus hyogaster*.

1556. **Ptilinopus lewisii vicinus** Hart. = *Ptilinopus viridis vicinus*.

Ptilinopus lewisii vicinus Hartert, *Nov. Zool.* 1895, p. 62 (Fergusson, d'Entrecasteaux group).

Type: ♂ ad., Fergusson Island, September 20, 1894.

1557. **Ptilinopus solomonensis neumanni** Hart. = *Ptilinopus solomonensis neumanni*.

Ptilinopus solomonensis neumanni Hartert, *Nov. Zool.* 1926, p. 46 (Nissan Island).

Type: ♂ ad., Nissan, I. viii. 1924. Albert F. Eichhorn coll. No. 9485.

Named after Professor Oscar Neumann.

1558. **Ptilinopus solomonensis meyeri** Hart. = *Ptilinopus solomonensis meyeri*.

Ptilinopus solomonensis meyeri Hartert, *Nov. Zool.* 1926, p. 173 (Witu Island north of New Britain).

Type: ♂ ad., Witu, French Islands, II. vi. 1925. Albert F. Eichhorn coll. No. 10263.

Named after the Rev. Father Otto Meyer.

1559. **Ptilinopus melanocephala aurescentior** Hart. = *Ptilinopus melanocephalus aurescentior*.

Ptilinopus melanocephala aurescentior Hartert, *Nov. Zool.* x, p. 33 (1903—Tukang Besi Islands south of Celebes).

Type: Kalidupa I., Tukang Besi group, 7.i.1902. Heinrich Kühn coll. No. 4567.

1560. **Ptilinopus melanocephala talautensis** Hart. = *Ptilinopus melanocephalus talautensis*.

Ptilinopus melanocephala talautensis Hartert, *Nov. Zool.* x, p. 34 (1903—Talaut Islands, north of Celebes).

Type: Lirung, Talaut group, May 1897. John Waterstradt coll.

† 1561. **Ptilinopus gestroi kaporensis** R. & H. = *Ptilinopus ornatus gestroi*.

Ptilinopus gestroi kaporensis Rothschild & Hartert, *Nov. Zool.* viii, p. 105 (1897—Kapaur, Western New Guinea).

Type: “♀” ad., Kapaur, February 1897. William Doherty coll.

Cf. *Nov. Zool.* 1913, p. 478.

1562. **Ptilinopus insolitus inferior** Hart. = *Ptilinopus insolitus inferior*.

Ptilinopus insolitus inferior Hartert, *Nov. Zool.* 1924, p. 265 (St. Matthias Island).

Type: ♂ ad. St. Matthias Island, 28.viii.1923. Albert F. Eichhorn coll. No. 8688.

1563. **Ptilinopus rivolii buruanus** Hart. & Goods. = *Ptilinopus rivolii buruanus*.

Ptilinopus rivolii buruanus Hartert & Goodson, *Nov. Zool.* xxv, p. 347 (1918—Buru).

Type: ♂ ad., Gunong Fogha, Buru, 4,000 feet, 24.ii.1912. Erwin Stresemann coll. No. 1111.

1564. **Ptilopus salvadorii** R. = *Ptilinopus pectoralis salvadorii*.

Ptilopus salvadorii Rothschild, *Bull. B.O. Club*, iii, p. x (1892—Jubi Island in Geelvink Bay).

Type: ♂ ad., Surui, Jobi I., 1.i.1883. Ex coll. A. A. Bruijn.

(Doherty collected on Jobi (near Marai) *Ptilinopus viridis musschenbroeki*; *P. pectoralis* and *P. viridis* therefore seem to be two separate species occurring in the same places.)

1565. **Ducula pistrinaria postrema** Hart. = *Ducula pistrinaria postrema*.

Ducula pistrinaria postrema Hartert, *Nov. Zool.* 1926, p. 35 (Egum, east of the D'Entrecasteaux group, and St. Aignan).

Type: ♂ ad., Egum group, June 1895. A. S. Meek coll.

1566. **Carpophaga concinna separata** Hart. = *Ducula concinna separata*.

Carpophaga concinna separata Hartert, *Nov. Zool.* iii, p. 180 (1896—Key Islands).

Type: ♀ ad., Key Weri, 9.ix.1873. Beccari coll. Specimen G of Salvadori's list in *Orn. Papuasias* iii of *C. concinna*.

1567. **Carpophaga williami** Hart. = *Ducula lacernulata williami*.

Carpophaga williami Hartert, *Nov. Zool.* iii, p. 552 (1896—Bali).

Type: ♂ ad., Bali, 2,000–3,000 ft., April 1896. W. Doherty coll.

1568. **Carpophaga sasakensis** Hart. = *Ducula lacernulata sasakensis*.
Carpophaga sasakensis Hartert, *Nov. Zool.* iii, p. 564 (1896—Lombok).

Type : Lombok, 3,000 feet, June 1896. William Doherty coll.

1569. **Carpophaga mindorensis** Whitehead = *Ducula radiata mindorensis*.
Carpophaga mindorensis Whitehead, *Ann. & Mag. Nat. Hist.* ser. 6, vol. xviii, p. 189 (1896—Mindoro).

Cotype : ♀ Highlands of Mindoro, 8.xii.1895. John Whitehead coll.

Marked as “ ♀ type of species.” This form bears a striking resemblance to *Ducula radiata* from Celebes, and I think it should be looked upon as a subspecies of the latter. It differs from *D. radiata* in its much larger size, pinkish throat and checks, grey lower abdomen and grey (not chestnut!) under tail-coverts, also the grey band across the rectrices is situated more towards the tip. The grey under tail-coverts, however, are tinged with chestnut in the “ type of the female,” which is not fully adult, as shown by the pointed tail-feathers!

1570. **Ptilocolpa nigrorum** Whiteh. = *Ducula carola nigrorum*.
Ptilocolpa nigrorum Whitehead, *Bull. B.O. Club*, vi, p. xxxiv (1897—Negros Island, Philippines).

Type : ♂ ad., Canloan Volcano, Negros, 10.iv.1896. John Whitehead coll.

1571. **Carpophaga obiensis** Hart. = *Ducula rufigaster obiensis*.
Carpophaga obiensis Hartert, *Bull. B.O. Club*, vii, p. 35 (1898—Obi Major).

Type : ♂ ad., Obi Major, September 1897.

In *Nov. Zool.* 1903, p. 15, I correctly called this very striking new form *Carpophaga basilica obiensis*, but—notwithstanding the great differences—I must now agree with Stresemann, who in 1923 called these birds *Ducula rufigaster rufigaster* (New Guinea, Jobi, Misol, Salwatti, Waigiu, and Batanta), *D. ruf. basilica* (Halmahera, Ternate, Batjan, Morty), and *D. ruf. obiensis*, from Obi Major only, where it must be quite common, having been collected by Bernstein (teste Salvadori), Doherty, Lucas, and Waterstradt. The Obi Island form is undoubtedly the representative of *rufigaster*, but much closer to *basilica*.

1572. **Carpophaga chathamensis** R. = *Carpophaga novae-seclandiac chathamensis*.
Carpophaga chathamensis Rothschild, *Proc. Zool. Soc. London* 1891, p. 312, pl. xxviii (Chatham Islands).

Type : Adult : Main Island, Chatham group, 1.v.1890.

(This fine pigeon is incidentally the first new bird described by Lord Rothschild.)

1573. **Columba albertisii exsul** Hart. = *Columba albertisii exsul*.
Columba albertisii exsul Hartert, *Nov. Zool.* 1903, p. 60 (Batjan).

Type : ♀ Batjan, 3,000 feet, June 1902. John Waterstradt coll.

1574. **Columba mada** Hart. = *Columba mada mada*.
Columba mada Hartert, *Bull. B.O. Club*, viii, p. 32 (1899—Mt. Mada, Buru); *Fig. Nov. Zool.* 1900, p. 241. Cf. also *Nov. Zool.* 1900, p. 241, 1914, p. 377.

Type : ♂ ad., Mt. Mada, 3,000 feet, August 1898. J. Dumas coll.

1575. **Columba palumbus azorica** Hart. = *Columba palumbus azorica*.
Columba palumbus azorica Hartert, *Nor. Zool.* xii, p. 93 (1905—Azores).

Type: ♂ ad., Terceira, 1,200 feet, 7.iv.1903. W. R. Ogilvie-Grant coll. No. 330.

The Azores Island form occurs on the eastern and middle Azores, but has not been found on Flores and Corvo. It is very similar to *C. palumbus maderensis* Tsch., but see *Vög. pal. Fauna*, ii, p. 1479.

1576. **Columba junoniae** Hart. = *Columba junoniae*.
Columba junoniae Hartert, *Nor. Zool.* 1916, p. 86 (Palma and Gomera).

Type: ♀ ad., La Galga, Palma, 20.iv.1889. Canon Tristram coll.

† 1577. **Columba rupestris pallida** R. & H. = *Columba rupestris turkestanica*.
Columba rupestris pallida Rothschild & Hartert, *Orn. Monatsber.* 1893, p. 41 (Altai).

(The name is preoccupied by *Columba pallida* Latham, which, however, was not a pigeon, but a young Cuculide.)

Type: ♀ Katon Karagai, Altai, mid November 1881. Bought from R. Tanéré.

1578. **Columba leuconota gradaria** Hart. = *Columba leuconota gradaria*.
Columba leuconota gradaria Hartert, *Nor. Zool.* 1916, p. 85 (Sechuan, W. China).

Type: ♂ ad., Sungpan, Sueshan, Sechuan, 16.iv.1894. Berezowsky coll.

1579. **Columba picazuro venturiana** Hart. = *Columba picazuro venturiana*.
Columba picazuro venturiana Hartert, *Nor. Zool.* xvi, p. 260 (1909—Argentina and South Bolivia).

Type: ♂ ad., Mocové, Chaco, 24.ix.1903. S. Venturi coll.

1580. **Columba plumbea baeri** Hellm. = *Columba plumbea baeri*.
Columba plumbea baeri Hellmayr, *Nor. Zool.* xv, p. 91 (1908—State of Goyaz, Brazil).

Type: ♂ ad., Goyaz, 650 m., April 1906. G. A. Baer coll.

1581. **Columba goodsoni** Hart. = *Columba goodsoni*.
Columba goodsoni Hartert, *Bull. B.O. Club*, xii, p. 42 (1902—N.W. Ecuador).

Type: ♂ ad., Pambilar, N.W. Ecuador, 31.viii.1900. Flemming, and Miketta coll.

1582. **Columba subvinacea berlepschi** Hart. = *Columba subvinacea berlepschi*.
Columba subvinacea berlepschi Hartert, *Nor. Zool.* 1898, p. 504 (Paramba, N.W. Ecuador).

Type: ♀ ad., Paramba, N.W. Ecuador, 3,500 ft., 13.vii.1897. R. Miketta coll.

Also received from Pambilar, S. Javier, and S. Domingo, W. Ecuador. Cf. Chapman, *Distr. Birdlife Colombia*, p. 206.

1583. **Macropygia doreya cunctata** Hart. = *Macropygia amboinensis cunctata*.
Macropygia doreya cunctata Hartert, *Nor. Zool.* 1899, p. 214 (Rossel Island, Louisiade group, S.E. of New Guinea).

Type: ♂ ad., Rossel Island, 4.iii.1898. A. S. Meek coll. No. 1533.

1584. **Macropygia amboinensis meeki** R. & H. = *Macropygia amboinensis meeki*.
Macropygia amboinensis meeki Rothschild & Hartert, *Nov. Zool.* xxii, p. 39 (1915—Vulean Island,
north of Kaiser Wilhelm Land).

Type : ♂ ad., Vulean Island, 28.xi.1913. Albert F. Eichhorn coll. No. 6308.

1585. **Macropygia ruficeps orientalis** Hart. = *Macropygia ruficeps orientalis*.

Macropygia ruficeps orientalis Hartert, *Nov. Zool.* iii, p. 573 (1896—Sumbawa Island).

Type : ♂ Tambora, Sumbawa, 3,000 feet, April or May 1896. William Doherty coll.

1586. **Macropygia ruficeps nana** Stres. = *Macropygia ruficeps nana*.

Macropygia ruficeps nana Stresemann, *Nov. Zool.* 1913, p. 311 ("Borneo, Malacca, Sumatra," but apparently restricted to Borneo).

Type : ♂ Kina Balu, N. Borneo, 3,000 feet, 22.iii.1888. John Whitehead coll. No. 2276.

1587. **Macropygia rufa krakari** R. & H. = *Macropygia rufa krakari*.

Macropygia rufa krakari Rothschild & Hartert, *Nov. Zool.* xxii, p. 28 (1915—Dampier Island or Krakar, north of Astrolabe Bay).

Type : ♂ ad., 4.ii.1914. Albert F. Eichhorn coll. No. 6565.

1588. **Macropygia rufa goodsoni** Hart. = *Macropygia rufa goodsoni*.

Macropygia rufa goodsoni Hartert, *Nov. Zool.* 1924, p. 266 (St. Matthias Island, N. of New Hanover).

Type : ♂ ad., St. Matthias Island, 5.vii.1923. Albert F. Eichhorn coll. No. 8636.

(A very closely allied form.)

1589. **Reinwardtoenas reinwardti griseotincta** Hart. = *Reinwardtoena reinwardtsi griseotincta*.

Reinwardtoenas reinwardti griseotincta Hartert, *Nov. Zool.* iii, p. 18 (1896—New Guinea).

Type : "♀" Mailu district, British New Guinea, July–August 1895. Anthony coll.

1590. **Reinwardtoenas reinwardti albida** Hart. = *Reinwardtoena reinwardtsi albida*.

Reinwardtoenas reinwardti albida Hartert, *Nov. Zool.* vii, p. 240 (1900—Buru).

Type : ♂ ad., Mt. Madang, Buru, 3,000 feet, September 1898. J. Dumas coll.

? † 1591. **Reinwardtoena reinwardtsi obiensis** Hart. = ? *Reinwardtoena reinwardtsi reinwardtsi*.

Reinwardtoena reinwardtsi obiensis Hartert, *Bull. B.O. Club.* vii, p. xxxv (1898—Obi Major, Central Moluccas).

Type : ♀ ad., Obi Major, September 1897. William Doherty coll.

When I first described this form, it seemed to me that it differed by a yellowish buff wash on the chin and cheeks, but *Nov. Zool.* 1900, p. 241, and 1903, p. 16, I have shown that I was in error, the yellowish wash not being natural,

but due to staining, and I thus united it with *R. r. reinwardsi* (type Amboina !), which I accepted as inhabiting the southern and northern Moluccas. With this Stresemann (Nov. Zool. 1914, p. 51) disagrees, stating that birds from the North Moluccas, Batjan, Halmahera, Morotai, and Obi are paler on the upperside. This statement is wrong, the coloration being the same in the birds from the northern and southern Moluccas, and from Obi. Arthur Goodson, however, calls my attention to the fact that birds from the North Moluccas have strikingly larger bills than those from Obi and Amboina in the Tring Museum. This is correct, and one is tempted to give a name to the North Moluccan form. I refrain from doing this, because our Obi birds are all females, while the North Moluccan ones are all unsexed or males, and I therefore prefer to await more material. If this, i.e. the separation of the North Moluccan form, was accepted, we would have forms from the North and South Moluccas differing (which is usually the case), and the Obi ones agreeing with the South Moluccan form; this is never the case, the Obi forms being either the same as the North Moluccan ones, or specialized, but never the same as the South Moluccan and differing from the North Moluccan.

Another very peculiar fact is the status of the Waigiui birds; our specimens agree with the North Moluccan ones and not with the New Guinea ones, as is usual! In Nov. Zool. 1896, p. 18, I said that Waigiui specimens were somewhat intermediate between Moluccan and New Guinea ones, but I had then very little material, and now cannot see how they differ from North Moluccan ones!

? 1592. **Turturoena iriditorques rothschildi** Neum. = ? *Turturoena irid. iriditorques*.

Turturoena iriditorques rothschildi Neumann, *Bull. B.O. Club*, xxi, p. 42 (1907—Ituri Forest, eastern Congo Free State).

Type: ♂ ad., Ituri Forest, 24.vii. (not viii) 1906, altitude 3,600 feet. C. F. Camburn coll.

Dr. Sassi, *Annalen k.k. Hofmuseum*, xxvi (not xvi, as quoted by W. L. Selater), p. 352, explains that *T. i. rothschildi* must be the same as *iriditorques*; considering the individual variation of another species, *T. sharpei*, from East Africa, this view is perhaps correct, but the type of *rothschildi* differs from specimens from Kamerun and the Lower Congo, therefore the question cannot be said to be settled, and I think that *rothschildi* is more likely to be a slightly different subspecies of *iriditorques*.

1593. **Turacoena manadensis sulaensis** Hart. = *Turacoena manadensis sulaënsis*.

Turacoena manadensis sulaënsis Hartert, *Nor. Zool.* 1903, p. 35 (Sula and Peling Islands).

Type: Sula Islands, A. R. Wallace coll. No. 9307a of the Bartlett collection, from which it came to Tring.

1594. **Nesopelia galapagoensis exsul** R. & H. = *Nesopelia galapagoensis exsul*.

Nesopelia galapagoensis exsul Rothschild & Hartert, *Nor. Zool.* vi, p. 184 (1899—Culpepper & Wenman Islands, Galapagos Archipelago).

Type: ♂ ad., Culpepper Island, 27.vii. 1897. F. P. Drowne, Webster-Harris Expedition, No. 180.

1595. *Turtur turtur arenicola* Hart. = *Streptopelia turtur arenicola*.

Turtur turtur arenicola Hartert, *Nor. Zool.* i, p. 42 (1894—Fao).

Type : Fao on Persian Gulf, 27. xii. 1893. Cuming coll.

1596. *Stigmatopelia lugens funebrea* Som. = *Streptopelia lugens funebrea*.

Stigmatopelia lugens funebrea (sic ! *funeb'ris* or *funerea* would have been correct) van Someren, *Bull. B.O. Club*, xl, p. 21 (1919—"Elgon south to Kilimanjaro").

Type : ♂ ad., Nairobi, 7. iv. 1918. V. G. van Someren coll.

Compared with specimens from northern Abyssinia (one from the Highlands, collected by Schimper, three from Eritrea collected by Schrader) van Someren's subspecies is quite distinct, while those from southern Abyssinia, the Hawash valley and Arussi Gallaland, are like *funebrea*, or intermediate. Cf. Someren's note in *Nov. Zool.* 1922, p. 38, No. 220 ; this note has not been considered by Selater, whose distribution in *Systema Avium Ethiopicarum*, i, p. 164, requires further investigation ! ("Ethiopia" is in my opinion incorrect and should be Aethiopia.)

1597. *Turtur vinaceus schoanus* Neum. = *Streptopelia vinacea schoana*.

Turtur vinaceus schoanus Neumann, *Orn. Monatsber.* 1904, p. 81 (Shoa).

Type : ♂ ad., Upper Bussigo, Shoa, 25. ix. 1900. Oscar Neumann coll. No. 79.

1598. *Streptopelia chinensis vacillans* Hart. = *Streptopelia chinensis vacillans*.

Streptopelia chinensis vacillans Hartert, *Nor. Zool.* 1916, p. 83 (Yunnan).

Type : ♂ Mengtsz, South Yunnan, 30. vi. 1910, collected by Owston's Japanese collectors.

See *Vög. pal. Fauna*, ii, p. 1491.

1599. *Turtur chinensis hainanus* Hart. = *Streptopelia chinensis hainana*.

Turtur chinensis hainanus Hartert, *Nor. Zool.* 1910, p. 195 (Hainan).

Type : ♂ Hoilow, Hainan, 4. iii. 1902. Katsumata coll.

1600. *Streptopelia chinensis forresti* R. = *Streptopelia chinensis forresti*.

Streptopelia chinensis forresti Rothschild, *Nor. Zool.* 1925, p. 293 (N.W. Yunnan, mountain form).

Type : ♂ Hill forests around Tengyeh, vii. 1924, 5,000–7,000 feet. G. Forrest coll.

1601. *Streptopelia senegalensis phoenicophila* Hart. = *Streptopelia senegalensis phoenicophila*.

Streptopelia senegalensis phoenicophila Hartert, *Nor. Zool.* 1916, p. 82 (Africa Minor).

Type : ♂ ad. Oumash near Biskra, South Algeria, 5. iii. 1911. W. Rothschild, E. Hartert, & C. Hilgert coll.

1602. *Geopelia maugens audacis* Hart. & Goods. = *Geopelia mangens audacis*.

Geopelia mangens audacis Hartert & Goodson, *Nor. Zool.* 1918, p. 358 (Tenimber, Little Key, Taam, and Kilsuin).

Type : ♂ ad., Larat, Tenimber Is., 17. i. 1901. Heinrich Kühn coll.

† 1603. **Turtur afer selateri** R. = *Turtur afer kilimensis*.

Turtur afer selateri Rothschild, *Bull. B.O. Club*, xxxviii, p. 26 (1917—"Sierra Leone to the Niger and Angola, and eastwards to Uganda and the Tanganyika district and Nyasaland, also the Zambesi").

Type: ♀ ad., Entebbe, Uganda. Rudolf Grauer coll.

Turtur afer kilimensis (Mearns), *Proc. U.S. Nat. Mus.* xlviii, p. 383 (1915—Kilimanjaro), antedates the name *selateri*, for this distinct form. Cf. Selater, *Bull. B.O. Club*, xlii, p. 118, 1922.

† **Columbigallina passerina perpallida** Hart. = *Chaemepelia passerina albivitta*.

Columbigallina passerina perpallida Hartert, *Ibis*, 1893, p. 304 (Curaçao, Aruba, Bonaire).

Chaemepelia albivitta, Bonaparte, *Conspectus Gen. Av.* ii, p. 77 (1854—Carthagenae).

Type: ♂ ad., Bonaire Island, 11.vii.1892. Ernst & Claudia Hartert coll. No. 169.

It is, as Todd, in his Revision of the genus *Chaemepelia*, in the *Annals Carnegie Museum*, viii, p. 555, 1912, justly said, "contrary to what might be expected," that the pretty little Ground Dove of the Dutch Islands on the coast of Venezuela should be exactly the same as the one from Carthagenae and Santa Marta, and ranging along the north coast of Venezuela. We must, however, follow Mr. Todd, who has examined series from Carthagenae and Santa Marta, and found them to be exactly the same as specimens from the Curaçao group of islands.

1604. **Hemicophaps foersteri** R. & H. = *Hemicophaps foersteri*.

Hemicophaps foersteri Rothschild & Hartert, *Bull. B.O. Club*, xix, p. 28 (1906—Massawa, New Britain).

Type: ♀ adult, Massawa, Gazelle Peninsula, October 1905. C. Wabnes coll. See *Nov. Zool.* 1911, p. 168, pl. i, 1926, p. 125.

1605. **Leptoptila battyi** R. = *Leptotila battyi*.

Leptoptila battyi Rothschild, *Bull. B.O. Club*, xii, p. 33 (1901—Coiba Island, off Panama, Pacific Ocean).

Type: ♀ ad., Coiba Island, 20.iv.1901. J. H. Batty coll.

This pigeon seems to be a species by itself.

1606. **Leptoptila decolor** Salv. = *Leptotila verreauxi decolor*.

Leptoptila decolor Salvin, *Nov. Zool.* ii, p. 21 (1895—Cajabamba and Huamachuco, N. Peru).

Type: ♂ ad. Cajabamba, 9,000 feet, January 1894. O. T. Baron coll.

† 1607. **Geotrygon veraguensis cachaviensis** Hart. = *Geotrygon veraguensis*.

Geotrygon veraguensis cachaviensis Hartert, *Nov. Zool.* v, p. 504 (1898—Cachavé, N.W. Ecuador).

Type: ♂ ad. Cachavé, 500 feet, 3.ii.1897. W. F. H. Rosenberg coll.

Cf. Chapman, *Distr. Birdlife Colombia*, p. 214. Hartert, *Nov. Zool.* 1898, p. 603.

1608. **Phlegoenas beccarii intermedia** R. & H. = *Gallucolumba beccarii intermedia*.

Phlegoenas beccarii intermedia Rothschild & Hartert, *Nov. Zool.* 1905, p. 246 (Bougainville, Solomon Is.).

Type: ♂ ad., Bougainville, 17.iv.1904. A. S. Meek coll. No. A. 1569.

1609. **Phlegoenas beccarii admiralitatis** R. & H. = *Gallicolumba beccarii admiralitatis*.

Phlegoenas beccarii admiralitatis Rothschild & Hartert, *Nor. Zool.* 1914, p. 287 (Manas, Admiralty Islands).

Type: ♂ ad., Manus. 11.x.1913. Albert F. Eichhorn coll., No. 6243.

1610. **Gallicolumba beccarii eichhorni** Hart. = *Gallicolumba beccarii eichhorni*.

Gallicolumba beccarii eichhorni Hartert, *Nor. Zool.* 1924, p. 266 (St. Matthias and Storm Islands).

Type: ♂ ad., St. Matthias Island, 7.vii.1923. A. F. Eichhorn coll. No. 8644.

† 1611. **Gallicolumba beccarii nodifica** Hart. = *Gallicolumba beccarii johannae*.

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

Type: ♂ ad., New Ireland, 28.xi.1923. A. F. Eichhorn coll. No. 8823.

This form cannot be upheld. It is not separable from *johannae*. Cf. *Nov. Zool.* 1926, p. 125!

† 1612. **Goura cinerea** Hart. = *Goura coronata*.

Goura cinerea Hartert, *Nor. Zool.* 1895, p. 67 (Arfak region).

Type: Not fully adult, Arfak region, New Guinea: bought from Renesse van Duivenbode.

"*Goura cinerea*" is a peculiar aberration, but certainly not a different species!

1613. **Microgoura meeki** R. = *Microgoura meeki*.

Microgoura meeki Rothschild, *Bull. B.O. Club*, xiv, p. 78 (1904—Choiseul, Solomon Islands).

Type: ♂ ad., Choiseul Island, 7.i.1904. A. S. Meek coll. No. A. 1110.

Figured: *Nov. Zool.* 1904, pl. xxi.

PTEROCLETES.

1614. **Pterocles bicinctus multicolor** Hart. = *Pterocles bicinctus multicolor*.

Pterocles bicinctus multicolor Hartert, *Bull. B.O. Club*, xxi, p. 53 (1908—Transvaal).

Type: ♂ Rustenburg, Transvaal, September 1893. W. Ayres coll.

1615. **Pterocles gutturalis saturator** Hart. = *Pterocles gutturalis saturator*.

Pterocles gutturalis saturator Hartert, *Nor. Zool.* vii, p. 29 (1900—Campi ya Simba, Ukamba district, Kenya colony).

Type: ♂ ad., Campi ya Simba (Lion Camp), 23.iv.1898. W. J. Ansorge coll. No. 372.

1616. **Pterocles coronatus atratus** Hart. = *Pterocles coronatus atratus*.

Pterocles coronatus atratus Hartert, *Bull. B.O. Club*, xii, p. 48 (1902—East Persia).

Type: ♂ ad., East Persia, 6.vii.1898 (Russian date). N. Zarudny coll. No. 5087.

1617. **Pteroclorus exustus olivascens** Hart. = *Pterocles senegalensis olivascens*.
Pteroclorus exustus olivascens Hartert, *Orn. Monatsber.* 1909, p. 183 (Massailand).

Type : ♂ ad., Campi ya Simba, Ukamba district, 14.i.1899. W. J. Ansorge coll. No. 9.

1618. **Pterocles exustus somalicus** Hart. = *Pterocles senegalensis somalicus*.
Pterocles exustus somalicus Hartert, *Nov. Zool.* 1900, p. 28 (Somaliland).

Type : ♂ Milmil, Somaliland, 30.vii.1894. Dr. A. Donaldson Smith coll. No. 106.

This form is hardly separable from *P. s. senegalensis*, i.e. *exustus* auctorum.

1619. **Pterocles senegalensis floweri** Nic. = *Pterocles senegalensis floweri*.
Pterocles senegalensis floweri Nicoll, *Bull. B.O. Club*, xli, p. 128 (1921—Fayum, Egypt).

Type : ♂ ad. Fayum, 2.iii.1918. W. Raw coll.

† 1620. **Pterocles exustus orientalis** Hart. = *Pterocles senegalensis hindustan*.
Pterocles exustus orientalis (nec *Tetrao orientalis* L. = *Pterocles orientalis*, formerly *P. arenarius*)
Hartert, *Nov. Zool.* 1900, p. 28 (India).
Pterocles senegalensis hindustan Meinertzhagen, *Bull. B.O. Club*, xliii, p. 158 (1923—India).

Type : ♂ ad., "India," exact locality unknown.

I had already pointed out (*Vöj. pal. Fauna*, ii, pp. 1511, 1512) that the name *orientalis* cannot be used, but, for want of adequate material, thought that the form from South Arabia was the same as that from India, but Meinertzhagen has explained that they differ.

LIMICOLAE.

1621. **Burhinus oedienemus astutus** Hart. = *Burhinus oedienemus astutus*.
Burhinus oedienemus astutus Hartert, *Nov. Zool.* 1916, p. 93 (Fao, Persian Gulf).

Type : Adult, Fao, 1893. W. D. Cumming coll.

1622. **Cursorius gallicus exsul** Hart. = *Cursorius cursor exsul*.
Cursorius gallicus exsul Hartert, *Vöj. pal. Fauna*, ii, p. 1526 (1920—Cape Verd Islands, apparently also Canaries).

Type : ♀ ad., Boavista, Cape Verd Is., May 1897. Boyd Alexander coll.

? 1623. **Cursorius cursor bannermani** R. = ? *Cursorius cursor bannermani*.
Cursorius cursor bannermani Rothschild, *Bull. B.O. Club*, xliii, p. 166 (1923—Canary Islands).

Type : ♀ ad., Fuertaventura, 7.vi.1902. Polatzek coll.

It stands to reason to suspect that the *Cursorius* of the Eastern Canaries should be different from that of the far distant Cape Verd Islands, but only a few of the specimens in London and Tring show the differences noticed by Lord Rothschild; probably the subspecies may have to be separated, but a larger series from the Cape Verd Islands might contain specimens like *bannermani*, in which case the latter might only refer to individual variations.

1624. **Charadrius varius allenbyi** Nic. = *Charadrius varius allenbyi*.
Charadrius varius allenbyi Nicoll, *Bull. B.O. Club*, xlii, p. 7 (1921—Egypt).

Type : ♂ Lake Karun, Fayum, Egypt, 10.iii.1917. D. Paton coll.

1625. *Charadrius alexandrinus seebohmi* Hart. & Jacks. = *Charadrius alexandrinus seebohmi*.

Charadrius alexandrinus seebohmi Hartert & Jackson, *Ibis* 1915, p. 529 (Ceylon, Red Sea, Somaliland),

Type: ♂ ad., Aripo, N.W. Ceylon, 4.iii.1869. E. Holdsworth coll.

1626. *Thinocorus rumicivorus venturii* R. = *Thinocorus rumicivorus venturii*.

Thinocorus rumicivorus venturii Rothschild, *Bull. B.O. Club*, xli, p. 111 (1921—"Barracas al Sud, Buenos Aires").

Type: ♂ Barracas al Sud, near Buenos Aires, Argentina, 4.vi.1901. S. Venturi coll.

1627. *Lobivanellus senegallus major* Neum. = *Lobivanellus* (or *Afribyx*) *senegallus major*.

Lobivanellus senegallus major Neumann, *Orn. Monatsber.* 1914, p. 8 ("Gebirge Nordost-Afrikas").

Type: ♂ ad., Chadi-Saati, Mareb River, Eritrea, 30.i.1903. G. Schrader coll.

This subspecies inhabits the mountains of Abyssinia, and is much larger, usually also somewhat darker on the upperside, than *L. s. senegallus*. In Selater's *Systema Avium Aethiopicarum*, p. 125, it has been omitted.

1628. *Rhinoptilus chalcopterus obscurus* Neum. = *Rhinoptilus chalcopterus obscurus*.

Rhinoptilus chalcopterus obscurus Neumann, *Orn. Monatsber.* 1910, p. 11 ("Afrika südlich des Äquators vom Kapland nordwärts bis Mombassa und bis zur Loanga Küste").

Type: ♂ ad., Fort Quipungo, Mossamedes, 12.vii.1906. W. J. Ansorge coll. No. 690.

1629. *Erolia maritima quarta* Hart. = *Calidris maritima quarta*.

Erolia maritima quarta Hartert, *Nor. Zool.* 1920, p. 137 (Commander Islands).

Type: ♂ ad., Bering Island, 11.v.1912. N. Sokolnikoff leg.

1630. *Scolopax rusticola mira* Hart. = *Scolopax rusticola mira*.

Scolopax rusticola mira Hartert, *Bull. B.O. Club*, xxxvi, p. 64 (1916—Amami Oshima, Riu Kiu Islands).

Type: ♀ ad., Amami Oshima, 10.xii.1904, from Alan Owston's Japanese collectors.

1631. *Coenocorypha aucklandica iredalei* R. = *Coenocorypha aucklandica iredalei*.

Coenocorypha aucklandica iredalei Rothschild, *Bull. B.O. Club*, xli, p. 63 (1921—Jack Lees Island).

Type: ♂ Jack Lees Island, Southland, New Zealand, June 1898. Received from H. H. Travers.

Five examined.

† 1632. *Gallinago tristrami* R. = *Coenocorypha aucklandica aucklandica*.

Gallinago tristrami Rothschild, *Bull. B.O. Club*, iii, p. xii (1893—"Antipodes Islands").

Type: Adult (probably ♀), said to have been caught on the Antipodes Islands, but as the specimen is, as Sharpe remarked already in 1896, the Auckland Is. form, its stated locality cannot be trusted, and it must have come from the Auckland Islands!

Not one of the 100 skins of the genus *Coenocorypha* in the Tring Museum has been properly labelled on the spot, with precise locality, date, etc., none having been collected by sufficiently skilled scientific collectors. There is thus no authority for the localities, which were apparently put on the luggage labels, attached to the skins, when shipped to Europe.

It is regrettable that Mrs. Meinertzhagen, in her up-to-date Review of the *Scolopacinae*, *Ibis*, 1926, has published these wrong localities; she says of *C. auckl. aucklandica*, that there is one from the Snares in Tring, where *huegeli* nests, of "*C. a. tristrami*," meaning the Antipodes form, that there are Snares I. specimens, of *huegeli* (the Snares subspecies), that there are three from the Auckland Islands!

As the name *tristrami* cannot be used for the Antipodes I. form, Lord Rothschild has supplied the following note and description:

[In 1893 I described a single specimen of a snipe, said to be from the Antipodes Islands, as *Gallinago tristrami*. A couple of years after, when Sharpe pointed out to me that it hardly differed from a series of Auckland Is. skins, I agreed that it was not separable. Sharpe then wrote: "I find that the type of *G. tristrami* is a rufous specimen of the true Auckland Island form, though at first sight it looks very distinct," and ". . . Mr. Rothschild now agrees with me that *G. tristrami* cannot be separated specifically from *G. aucklandica*." Later on, when more than a dozen Antipodes Is. specimens had been received, it became evidently that nearly all were nevertheless different, and both Mathews & Iredale (*Ibis*, 1913) and Mrs. Meinertzhagen (*Ibis*, 1926) have separated them, calling them *tristrami*, but they overlooked the fact that the type-specimen does not agree with the other Antipodes I. examples. This being the fact, we must conclude that the type of *G. tristrami* did not come from the Antipodes Islands, though labelled so by a dealer. As thus the real Antipodes snipe has no available name, I propose to call it *Coenocorypha aucklandica meinertzhagenae* Rothsch., subsp. nov., in honour of Mrs. Meinertzhagen, as the author of the excellent review of the subfamily *Scolopacinae* commenced in the *Ibis*, 1926.

C. a. meinertzhagenae differs from *C. a. aucklandica* in the much darker upperside, the centres of the feathers of the back being more extensively and intensively black, and the rufous edges narrower and more orange, less fulvous, and somewhat brighter. Size about the same, but difficult to determine, as hardly any of either form are reliably sexed. Type of *C. a. meinertzhagenae* ♀ ad. Antipodes Island 1898 purchased from H. H. Travers. In 1893-1895 there were in Great Britain hardly any examples of the snipe ("Semi-woodeoeks") of the genus *Coenocorypha*, and so there was no reason to doubt the labelling of the few we had. Some years later, however, I received from Henry Palmer a large series from the Chatham Islands and from H. H. Travers & Dannefaerd numbers from the Chatham, Auckland, Snares, and Jack Lees Islands, and it is quite clear that a number of examples have been wrongly labelled. It is quite impossible for these birds with their heavy bodies and soft plumaged, rounded wings to fly more than short distances, and if driven out to sea by gales they would inevitably be drowned; therefore we cannot suppose that these odd birds labelled from different islands to their home can have been strays; this supposed drowning at sea is doubtless the explanation of the finding of the skulls of the long-billed *aucklandica* or *huegeli* among the aggregations of bird bones on the shores of the Chatham Islands, where now only the very short-billed *C. a. pusilla* lives.

Dr. H. O. Forbes records under the name of *chathamica* an extinct Pleistocene *Coenocorypha* from the fossil beds of the Chatham Islands with a bill over 3 inches long, that is over $\frac{1}{2}$ an inch longer than any living *Coenocorypha* known, but among the large mass of bones I have from the shores of those islands are also recent skulls of an existing form or forms.

ROTHSCHILD.]

1633. *Coenocorypha aucklandica meinertzhagenae* R. = *Coenocorypha aucklandica meinertzhagenae*.

Coenocorypha aucklandica meinertzhagenae Rothschild, *antea*, p.

Type : ♀ ad., Antipodes Islands 1898. Purchased from H. H. Travers.

1634. *Coenocorypha aucklandica iredalei* R. = *Coenocorypha aucklandica iredalei*.

Coenocorypha aucklandica iredalei Rothschild, *Bull. B.O. Club*, xli, p. 63 (1921—Jack Lees Island, near S. New Zealand).

Type : ♂ Jack Lees Island, June 1898. H. H. Travers coll.

(The genus *Coenocorypha* is now generally admitted, and, as I said already, *Fög. d. pal. Fauna*, ii, p. 1655, 1921, one of its characteristics is the peculiar musky smell, which is even noticeable in well-naphthalined birds kept in the Museum for over 25 years.)

? † 1635. *Haematopus reischeki* R. = ? *Haematopus ostralegus unicolor* (var.) or *Haematopus ostralegus finschi* (var.).

Haematopus reischeki Rothschild, *Bull. B.O. Club*, x, p. iv (1899—Kaipara, New Zealand).

Type : “ ♂ ” Kaipara, North New Zealand, June 1885. A. Reischek coll.

The greater amount of black on the back and rump, as well as on the breast, may be either (if two species are recognized) an approach to “*Haematopus niger unicolor*,” or a hybrid between *H. o. finschi* and “*H. n. unicolor*.” It does not only differ from *finschi* in the greater extent of black, but also in the greater length of the bill, wings, tarsi, and toes.

There is a somewhat similar specimen in the British Museum, and in Tring there are two black Oyster-catchers with white feathers, in one all over the head, neck, body, and wing-coverts, in the other on the breast, abdomen, under tail- and under wing-coverts. This opens up the question, if these black “*unicolor*” are not aberrations or mutants of the white-backed, white-bellied *finschi*? Ecological or biological differences have not been recorded, and Sir Walter Buller informed us that the black and white forms were not infrequently seen in the same flock. The eggs of the two forms are probably not distinguishable, though of the Australian black form Campbell says the eggs he saw are darker—they are, however, not larger. In Australia, too, the black birds are intermingling with the white-bellied ones, and, according to Campbell, “hybrids” are recorded; Campbell also found the black form more on rocky ground, which, however, might have been accidental.

If it is confirmed, that in *New Zealand* the black and white-bellied Oyster-catchers are only mutants of one and the same subspecies, this is, however, not the fact in all localities, for example, the two forms have different bills in the Falkland Islands!

A curious fact is the occurrence of a peculiar subspecies with a naked ring round the eye in North Queensland and N.W. Australia, "*H. niger ophthalmicus*." Mathews correctly kept it separate, though he had only seen two specimens. In Tring he could have seen others from Mackay (Queensland), Broome and Lewis Island (N.W. Australia); on the other hand, examples from Point Cloates (Tom Carter coll.) in W. Australia are no longer *ophthalmicus*! The white-bellied birds from the same localities do *not* show the character of *ophthalmicus*!

Mathews' *H. niger bernieri* is only the Black Oyster-catcher in strongly worn plumage.

1636. **Haematopus ostralegus chathamensis** subsp. nov.

Type: Adult, Chatham Islands, 1890, collected by Henry Palmer.

Differs from *H. ostralegus finschi* of New Zealand (both islands) in having a shorter bill.

Bill from end of frontal feathering 64-78, mostly 67-70 mm. In *H. o. finschi* the bill, measured in the same way, is 82-89, mostly 85-87 mm. Wing as in *finschi*, not as in *longirostris* from Australia.

Habitat: Chatham Islands, east of New Zealand.

It is curious that this locality has, as far as I can see, never been mentioned. Forbes, in his list of the birds of the Chatham Islands, did not mention it as living there, nor did Buller in his works on New Zealand, nor do Mathews & Iredale in the *Ibis*, 1913, in the Reference list of the birds of New Zealand make mention of it. Henry Palmer, however, sent us 8 specimens from the Chatham Islands, and we got 2 from Dannebaerd. Therefore it is necessary to separate this form.

We also received from the late Sir Walter Buller a black Oyster-catcher, with a bill only 65 mm. long. The shortest bill of adult *unicolor* from New Zealand measures 80 mm. Unfortunately the locality is not known, but it might be from the Chatham Islands and in that case the black mutant of *H. o. chathamensis* (?). This short-billed black specimen has one white feather behind the right eye.

1637. **Sterna sumatrana mathewsi** Stres. = *Sterna sumatrana mathewsi*.

Sterna sumatrana mathewsi Stresemann, *Nov. Zool.* xxi, p. 60 (1914—"Aldabra-Inseln, Amiranten, Tschagos-Archipel").

Type: ♀ ad., Ile Piquart, Aldabra, 5.x.1904. F. R. Mortimer coll.

This form has a shorter wing and generally a longer bill, and wing-coverts and back are more whitish than typical *sumatrana*, which extends to the Torres Straits and the small islands of Bushy and Sir Charles Hardy, east of the Cape York Peninsula, *Sterna sumatrana kempii* Mathews, 1912, being quite typical *sumatrana*. When fresh (at least in breeding plumage), the breast has a delicate pink or salmon-pink tinge.

We received *S. s. mathewsi* from Aldabra from Mortimer and Thibault, altogether eleven skins.

1638. **Sterna repressa** Hart. = *Sterna repressa*.

Sterna repressa Hartert, *Nov. Zool.* xxiii, p. 288 (1916—new name for *Sterna albigena*, a name which could unfortunately not be used).

Type: Adult, Fao, Persian Gulf. Cumming coll.

† 1639. **Anous hawaiiensis** R. = *Anous minutus melanogenys*.

[*Anous melanogenys* Gray, *Gen. B.* iii, p. 661, pl. 182 (1846—figure of the Hawaiian form).]
Anous hawaiiensis Rothschild, *Bull. B.O. Club*, i, p. lvii (1923—Hawaiian Islands).

Type: ♂ ad. Kauai, 24. iv. 1891. H. C. Palmer coll. No. 1007.

Lord Rothschild, following Saunders (*Cat. B. Brit. Mus.* xxv, pp. 145-149), took the name of *melanogenys* to refer to the Australian form, and, comparing Hawaiian examples with the latter, found the Kauai birds different. Mathews, however, went over the synonymy of these birds (*B. Austr.* ii, pp. 420-424), and we must agree with his results. The name *minutus* Boie was rejected as uncertain by Saunders, but it will be better to follow Mathews, who adopts the name, which was given to an Australian bird, for the Australian subspecies. Thus the Hawaiian form becomes *A. minutus melanogenys*.

No mention is made in Boie's description in so many words of the whitish crown, but this is clearly inferred by the words "von dem typischen Colorit," which means, of the usual coloration of an *Anous*.

† 1640. **Sterna dougalli arideensis** Math. = *Sterna dougalli bangsi*.

Sterna dougalli arideensis Mathews, *B. Austr.* ii, p. 364 (1912—Île Aride, Seychelles).

Type: ♂ Île Aride, 1. ii. 1908. Thibault coll.

It seems very peculiar that *S. d. bangsi* should extend from the Seychelles, Rodriguez, Malacca to South China, New Guinea, Solomon Is., etc., while a distinct form (*Sterna dougalli korustes* Hume) inhabits the Andaman Islands, and strays occasionally to Ceylon and Tenasserim. I cannot, however, come to any other conclusion, and we must accept this, until someone *proves* that it is otherwise.

1641. **Sterna maxima albididorsalis** Hart. = *Sterna maxima albididorsalis*.

Sterna maxima albididorsalis Hartert, *Vög. pal. Fauna*, ii, p. 1698 (1921—coast of W. Africa from Straits of Gibraltar to Angola).

Type: ♂ ad., Baie du Lévrier, Cap Blanco south of Rio de Oro, 8. v. 1895. Comte de Dalmas coll.

1642. **Gygis alba royana** Math. = *Gygis alba royana*.

Gygis alba royana Mathews, *B. Australia*, ii, p. 443 (1912—Kermadec Islands).

Type: "♂" (no original label left, but Mathews says "♂"), collected on the Kermadec Islands.

1643. **Gygis alba monte** Math. = *Gygis alba monte*.

Gygis alba monte Mathews, *B. Australia*, ii, p. 443 (1912—Seychelles).

Type: ♀ ad., Praslin, Seychelles, 5. vii. 1904. Thibault coll.

1644. **Gygis alba rothschildi** subsp. nov.

Type: ♀ ad., Laysan Island, Pacific Ocean, N.W. of the Sandwich Islands, 3. ix. 1896. Dr. & Frau Schauinsland coll.

This new subspecies differs from *G. a. royana*, *pacifica*, and *candida* (*kittlitzi*) by its smaller size and shorter bill. The bill is fairly thick at base, its length not more than 38 mm. from the end of the feathering, generally less, wings not more than 245 mm.

I name this bird after Lord Rothschild, who has done so much for the knowledge of the birds of Laysan, and who has also a set of the birds collected by Professor Schauinsland and his brave wife, their collection being the finest ever made on Laysan, before its avifauna was so terribly diminished by a party of Japanese feather-hunters.

The Laysan *Gygis* is surprisingly near the Seychelle Islands "*monte*," in which, however, the wing does not seem to exceed 235 mm. in length, as a rule, while the bill is in the series not quite so thick at base, and generally a little more depressed along the basal half of the culmen.

Mathews, in his *B. Australiæ*, ii, has for the first time given a review of all the forms of the genus *Gygis*. He agrees with me (Nov. Zool. 1898, p. 67) that the name *alba* was rejected by Saunders without reason. He further designated Ascension Island in the Atlantic Ocean as the type locality of *Sterna alba* Sparrm. This must be accepted, as the birds seen in the Cape Seas are probably Atlantic breeders, and the figure and description of Sparman agree best with the Atlantic form, which has, when adult, white or very pale brownish white shafts to the primaries, and the bill entirely black—on the other hand, these peculiarities of the figure of Sparman count for nothing, as the bill is always black in skins, only in freshly killed birds blue on the basal half, and the figure (bill without a nostril!) is not exact enough to lay stress on the colour of the shafts of the primaries! If *alba* is the name of the South Atlantic form, *crufordii* of Nicoll is, of course, a synonym.

The Seychelle bird is distinct, though extremely close to the Laysan form. We have it from the Seychelles and Aldabra.

The Laysan form is quite distinct from the other Pacific *Gygis*, though very little different from the Seychelles-Aldabra subspecies (see above). It is quite unreasonable to think that the form from Christmas Island, 24° south of Laysan and nearly as far N.W. of the Marquesas, is the same as the Laysan form (Laysan is not in the Sandwich or Hawaiian group, but N.W. of the latter). Unfortunately we have no specimens from Christmas Island, the terra typica of *candida*, but, judging from a few skins from Huahine and Samoa (ex Mus. Godeffroy) and two from Nine or Savage Island in the eastern Tonga group (ex H. H. Travers), these birds are the same as the Caroline and Marianne ones—therefore it seems probable that the Christmas Island form is also the same—and there are many islands dotted in the sea between Christmas Island and the southern Polynesian groups, while the sea between Laysan and Sandwich Islands and Christmas is almost without any. If these birds are all alike, they would have to be called *candida*, and *pacifica* Lesson (terra typica Society group), *nivea* Bennett 1840 (terra typica Caroline Island north of the Society group—not the Carolines!), and *kittitzi* Hartert 1891 (terra typica the Caroline Islands) would be synonyms.

G. a. royana is larger than all these, i.e. wings and bill as a rule longer, bill slenderer, not so deep as in *rothschildi*. It inhabits Kermadec and Norfolk Islands.

A form of *Gygis alba* occurs also in the Japanese waters, chiefly on the shores of the Riu-Kiu group, but according to the *Handlist of Japanese Birds* it has also been found on the Kuriles (!), Hondo, Hokkaido, Bonin Island, Sulphur Island, Marcus Island, Kiusiu, and Riu-Kiu Islands! These birds have the shafts of the quills not clay-coloured or pale brown, but dark brown, on the first outer

primary almost black ; the bills are less high than in *rothschildi*, the wings measure about 230 mm. (worn in one). This seems to me an unnamed subspecies, but having only two specimens at hand, and knowing that the colour of the shafts varies to some extent, I do not bestow a name on these birds ; their breeding-place is probably somewhere on or near the Bonin (!), Volcano, or Marcus Is. and doubtless Japanese Ornithologists will soon inform us about this.

The rare *Gygis microrhyncha* is only known—so far—from the Marquesas Islands. Mathews created for it a new genus "*Lencanous*" ; rather than doing this I would consider it as another subspecies of *alba* ; Saunders said that both *G. alba* and *microrhyncha* were found on the Marquesas, evidently because Tristram had received a *Gygis alba candida* and a *Gygis microrhyncha* from the Marquesas ; these birds he received without detailed labels, and in fact without any individual labels, in spirits, from J. Green.

We hope to hear more about this form from Mr. Murphy, but I believe the New York Museum has received only *microrhyncha* from the Marquesas. I would therefore so far recognise the following forms :

Gygis alba alba (Sparrm.), 1786.

South Atlantic Ocean (Ascension, St. Helena, S. Trinidad). Differs from all the other subspecies in having the bill entirely black in life, the nostril is situated much nearer the base of the bill, only about 4.5 mm. from the feathering, while in the others it is nearly or quite double the distance from the feathering ; the shafts of the primaries are very pale brown, sometimes quite white.

Gygis alba monte Math., 1912.

Seychelle Islands and Aldabra—probably also other islands.

Gygis alba royana Math., 1912.

South Pacific : Kermadec, Norfolk, and probably other islands.

Gygis alba candida Gm., 1788.

Middle Pacific (see above).

Gygis alba rothschildi Hart., 1927.

Northern Pacific : Laysan, Lisiansky, Krusenstern, and probably other small islands ; not with certainty known from the Hawaiian Islands.

Gygis alba subspecies ?

Occurring (rarely) on coasts of Japanese Islands, ? breeding on Marcus Island, Bonin (!) or Sulphur Islands.

Gygis alba microrhyncha Saund., 1876.

Marquesas.

1645. *Catharacta antarctica lonnbergi* Math. = *Stercorarius skua lonnbergi*.

Catharacta antarctica lonnbergi (sic, should have been *lönbergi*) Mathews, *Nov. Zool.* xviii, p. 212 (1912—New Zealand seas).

Type : " ♂ " ad., New Zealand seas. Ex coll. Sir Walter Buller. No exact locality.

I consider all southern Great Skuas to be subspecies of *Stercorarius skua*; Mathews first did the same, when he described *lounbergi*, but afterwards grouped them into three species. I do not agree, but am pleased that Mathews discovered *C. a. lounbergi*, and I wonder that Saunders and others, who studied Skuas, did not find out that there were more forms in the southern seas than they admitted.

OTIDIDAE.

1646. **Houbara fuertaventuræ** R. & H. = *Chlamydotis undulata fuertaventuræ*. *Houbara fuertaventuræ* Rothschild & Hartert, *Nov. Zool.* 1894, p. 689 (Fuertaventura, Eastern Canary Islands).

Type: ♂ ad., Oliva, Fuertaventura, 20.iii.1889. From Ramon Gomez.

1647. **Otis tetrax orientalis** Hart. = *Otis tetrax orientalis*.

Otis tetrax orientalis Hartert, *Nov. Zool.* 1916, p. 339 (West Siberia to E. Germany).

Type: ♂ ad., Sarepta in Russia, May 1889. Bought from dealer.

RALLI.

1648. **Hypotaenidia brachypus exsul** Hart. = *Rallus (Hypotaenidia) striatus exsul*.

Hypotaenidia brachypus exsul Hartert, *Nov. Zool.* v, p. 50 (1898—Flores).

Type: ♂ Mangarai district, S. Flores, November 1896. Alfred Everett coll.

It is perhaps daring to treat *R. pectoralis*, *exsul*, and *alberti* as subspecies of *striatus*, but I think it will be accepted; the higher bill of these forms cannot be more than a subspecific character.

1649. **Hypotaenidia brachypus alberti** R. & H. = *Rallus (Hypotaenidia) striatus alberti*.

Hypotaenidia brachypus alberti Rothschild & Hartert, *Nov. Zool.* xiv, p. 451 (1907—Angabunga River, Mts. of British Papua).

Type: ♂ ad., Owgarra, Angabunga River, 6.ii.1905, about 6,000 feet. A. S. Meek coll. No. A. 2051.

1650. **Eulabeornis philippensis lesouefi** Math. = *Rallus (Hypotaenidia) philippensis lesouefi*.

Eulabeornis philippensis lesouefi Mathews, *B. Austr.* i, p. 198 (1911—New Hanover).

Type: Adult, New Hanover. 19.ii.1897. Cayley Webster coll. No. 413.

1651. **Eulabeornis philippensis goodsoni** Math. = *Rallus (Hypotaenidia) philippensis goodsoni*.

Eulabeornis philippensis goodsoni Mathews, *B. Austr.* i, p. 197 (1911—Samoa).

Type: ♂ Upolu, Samoa Islands, 28.iii.1895. C. M. Woodford coll. No. 101.

¹ The forms of *Rallus pectoralis* Temm. occupy a somewhat intermediate position between *Rallus* and *Hypotaenidia*, having the bill less elongated and nearly as slender as in *Rallus*, and the nostril as in the latter, while the markings are more as in *Hypotaenidia*. Mathews unites them with *Rallus*, recognising the forms of *philippensis*, and a few others as *Hypotaenidia*. In my mind the latter should only be treated as a subgenus of *Rallus*, and *pectoralis* might still be included in the *Hypotaenidia* group.

1652. **Eulabeornis philippensis wilkinsoni** Math. = *Rallus (Hypotaenidia) philippensis wilkinsoni*.

Eulabeornis philippensis wilkinsoni Mathews, *B. Austr.* i, p. 198 (1911—South Flores).

Type: "♂" South Flores, about 3,000 feet, November 1896. Alfred Everett coll.

1653. **Hypotaenidia kuehni** R. = *Rallus (Hypotaenidia) torquatus kuehni*
Hypotaenidia kuehni Rothschild, *Bull. B.O. Club*, xii, p. 75 (1902—Tukang—Besi Islands).

Type: ♂ ad., Binongka, Tukang Besi group, 12. xii. 1901. Heinrich Kühn coll. No. 4288.

There can be no doubt, that *R. (H.) kuehni*, *celebensis*, *saturatus*, and *sulcirostris* are subspecies of *torquatus*, though they lack the rufous chest-band of the true *torquatus*. *R. (H.) owstoni*, though it represents, so to say, the *torquatus* group on Guam, cannot be treated as a subspecies of the latter. All the *torquatus* forms have a white line under the eye from the base of the bill to the sides of the neck, throat and foreneck black, and the underside black with narrow white bars. *R. (H.) owstoni*, on the other hand, has a grey *superciliary* line, has the throat and foreneck pale grey, much wider bars to the underside, and very much shorter and weaker, softer wings, so that it can only flutter, while the forms of *torquatus* have wings of nearly twice the length and are good fliers.

1654. **Hypotaenidia owstoni** R. = *Rallus (Hypotaenidia) owstoni*.
Hypotaenidia owstoni Rothschild, *Nor. Zool.* ii, p. 481 (1895—Guam, Marianne Islands). See also Hartert, *Nor. Zool.* v.

Type: ♀ Agaña, Guam, 1. v. 1895. Collected by Alan Owston's Japanese hunters. No. A. 34.

1655. **Hypotaenidia wakensis** R. = *Rallus (Hypotaenidia) wakensis*.
Hypotaenidia wakensis Rothschild, *Bull. B.O. Club*, xiii, p. 78 (1903—Wake Island, lat. 19° N., long 167° E., north of the Marshall Islands).

Type: Wake Island, 1892, collected by Japanese bird hunters for the late Alan Owston.

To the original description of this remarkable species may be added, from further skins received, all from 1892: There are a number of narrow white bars, both on the sides of and across the jugulum, and the sides of breast and abdomen, also on the under tail-coverts. There is a pale rufous band across the chest, indistinct in some specimens. Chin and upper throat white, middle of abdomen whitish. Wings 95–100, in two specimens (none are sexed!) only about 85 mm.

1656. **Eulabeornis castaneiventris sharpei** R. = *Eulabeornis castaneiventris sharpei*.
Eulabeornis castaneiventris sharpei Rothschild, *Bull. B.O. Club*, xvi, p. 81 (1906—Wokan, Aru Islands).

Type: ♀ ad. Wokan, Aru Islands, 6. x. 1900. Heinrich Kühn coll. No. 2734.

This is the form described by Sharpe, *Cat. B.* xxiii, p. 49, as *Eulabeornis castaneiventris*, with the ochraceous rufous brown back, while *E. c. castaneiventris* of Northern Australia has the upperside somewhat pale olive.

1657. **Rallina tricolor** Gray = *Eulabeornis tricolor tricolor*.

Rallina tricolor Gray, *Proc. Zool. Soc. London*, 1858, p. 188 (Aru Islands).

Type: ♀ (teste Gray) Aru Islands. R. Wallace coll. Bought from the late H. Whitely, dealer of natural history specimens in Woolwich, for two shillings.

As I explained, *Nov. Zool.* 1924, p. 262, there can hardly be any doubt that this is the type, which, by error, passed with duplicates in the hands of Whitely, for sale. On the present evidence it is very doubtful if New Guinea specimens can be separated. They do not have the bars on the abdomen white, instead of buff, but the bills seem to be larger, and the upper throat as a rule more pronounced whitish, but this is only by comparison with the one example from Aru, i.e. the probable type. The other race, *victa* from Tenimber, Koer, and Dammar Islands, is much smaller and has the upper throat as dark as in our Aru skin. *E. t. convicta* Stres., from the Bismarek Archipelago (St. Matthias Island, New Hanover, and New Ireland), is in coloration like the Papuan race, but smaller.

1658. **Eulabeornis tricolor grayi** Math. = *Eulabeornis tricolor grayi* (?).

Eulabeornis tricolor grayi Mathews, *B. Austr.* i, p. 205 (1911—New Guinea).

Type: Adult, Dutch New Guinea, native preparation, bought from Boucard.

1659. **Rallina triolor victa** Hart. = *Eulabeornis tricolor victa*.

Rallina tricolor victa Hartert, *Nov. Zool.* viii, p. 175 (1901—Tenimber).

Type: ♂ ad., Larat, Tenimber, 18.ii.1901. Heinrich Kühn coll. No. 3173.

1660. **Sarothrura pulchra centralis** Neum. = *Sarothrura pulchra centralis*.

Sarothrura pulchra centralis Neumann, *Bull. B.O. Club*, xxi, p. 45 (1908—"Lake Region of Central Africa").

Type: ♀ Msva, on west shore of Lake Albert, 8.ii.1889. Emin Pasha coll. No. 32.

1661. **Sarothrura rufa ansorgei** Som. = *Sarothrura rufa ansorgei*.

Sarothrura rufa ansorgei van Someren, *Bull. B.O. Club*, xl, p. 20 (1919—Duque de Braganza, Angola).

Type: ♀ Duque de Braganza, 8.viii.1903. W. J. Ansorge coll.

1662. **Sarothrura rufa elizabethae** Som. = *Sarothrura rufa elizabethae*.

Sarothrura rufa elizabethae van Someren, *Bull. B.O. Club*, xl, p. 20 (1919—"Uganda, from Entebbe east to Elgon and Kisumu").

Type: ♀ Kisumu, 10.iii.1917. Dr. van Someren coll.

1663. **Porzanula palmeri** Frohawk = *Porzanula palmeri*.

Porzanula palmeri Frohawk, *Ann. & Mag. Nat. Hist.*, sixth series, vol. ix, p. 247.

Type: Adult, unsexed, sent alive from Laysan by its discoverer, H. C. Palmer, died at Cambridge. This most interesting species is figured in *Avifauna of Laysan*, i, pl. xii.

1664. **Porzana cinerea meeki** Hart. = *Porzana cinerea meeki*.

Porzana cinerea meeki Hartert, *Nov. Zool.* xxxi, p. 263 (1924—St. Matthias Island, N. Bismarek Archipelago).

Type: ♂ ad., St. Matthias Island, 30.vi.1923. A. F. Eichhorn coll. No. 8619.

1665. **Poliolimnas cinereus moluccanus** Math. = *Porzana cinerea moluccana*.

Poliolimnas cinereus moluccanus Mathews, *Bull. B.O. Club*, xvi, p. 60 (1926—"Moluccas to Key Islands and Lesser Sunda Islands").

Type: ♀ ad., Mt. Fogi, Buru Island, 18.ii.1902. Heinrich Kühn coll. No. 4955.

1666. **Porzana fusca bakeri** Hart. = *Porzana fusca bakeri*.

Porzana fusca bakeri Hartert, *Nor. Zool.* 1917, p. 272 (North India).

Type: ♀ Bhim-Tâl, Kumaon, 20.vi. ("Ovary well developed.")

1667. **Creceiscus sharpei** R. & H. = *Creceiscus spilonotus sharpei*.

Creceiscus sharpei Rothschild & Hartert, *Nor. Zool.* vi, p. 185 (1899—Indefatigable Island).

Type: ♂ Indefatigable Island, Galápagos Islands, 9.ii.1897. Hall coll. No. 942.

1668. **Gallinula chloropus guami** Hart. = *Gallinula chloropus guami*.

Gallinula chloropus guami Hartert, *Nor. Zool.* xxiv, p. 268 (1917—Guam, Marianne Islands).

Type: ♂ ad., Guam, 11.xii.1894. Collected by Alan Owston's Japanese hunters, No. A. 22.

1669. **Gallinula chloropus seychellarum** Hart. = *Gallinula chloropus seychellarum*.

Gallinula chloropus seychellarum Hartert, *Vög. pal. Fauna*, iii, p. 1843 (1921—Seychelle Islands: Ile Aride, Ile aux Fous, Praslin, St. Digue).

Type: "♂" Ile Aride, 21.viii.1905. Thibault coll.

† 1670. **Porphyrio poliocephalus caspius** Hart. = *Porphyrio poliocephalus seistanicus*.

Porphyrio poliocephalus caspius Hartert, *Nor. Zool.* 1917, p. 266 (Caspian Sea, Persia).

Porphyrio poliocephalus seistanicus Sarudny & Härms, *Journ. für Orn.* 1911, p. 240 (Scistan in E. Persia).

Type: ♂ ad., Lenkoran (Purchased).

1671. **Gallinula (Amaurornis) coccineipes** Slater = *Gallinula akool coccineipes*.

Gallinula (Amaurornis) coccineipes Slater, *Ibis*, 1891, p. 44 (near Swatow).

Type: ♂ Tai-Yang, Swatow, April 1880. Ex J. D. La Touche, per H. H. Slater Collection.

Differences from *Gallinula akool akool* (India) require confirmation!

† 1672. **Neocrex uniformis** Hart. = *Neocrex columbianus*.

Neocrex uniformis Hartert, *Nor. Zool.* viii, p. 369 (1901—N.W. Ecuador).

Neocrex columbianus Bangs, *Proc. Biol. Soc. Washington*, 1898, p. 171 (Santa Marta).

Type: ♂ Pambilar, N.W. Ecuador, 60 feet, 19.ix.1900. G. Fleming coll. No. 689.

This is not likely to be a subspecies of *N. erythropis* which occurs in Peru (terra typica Lima), and again in Merida, Venezuela, also in the mountains of Tucuman, and according to Pelzeln, in Matto Grosso, and according to Hudson at Buenos Aires—but in the Venturi collection it was not represented from there.

HEMIPODII (Turnices).

1673. **Turnix olivii** Robinson = *Turnix castanotus olivii*.

Turnix olivii Robinson, *Bull. B.O. Club*, x, p. 43 (1900—Cooktown, Queensland); Mathews, *B. Austr.*, i, pl.

Type : ♀ Cooktown, 25. vi. 1899. E. Olive coll.

This form is a subspecies of *T. castanotus* from the "Northern Territory of South Australia." It differs from the latter in the absence of white spots on the forehead and neck, as well as on the throat and chest, and its wing is much longer.

T. c. olivii is a very rare bird. I only know of the type, and of one collected at Coen, north of Cooktown, by W. R. Maclellan 1. ii. 1922, and described by Mathews as "*Austroturnix olivii coenensis*" (*Bull. B.O. Club*, xliii, p. 14, 1922), but now admitted to be a synonym.

There is a third subspecies, *Turnix castanotus magnifica* Mathews 1912, from N.W. Australia, in which the back and rump are brighter rufous, lacking the slaty or olivaceous tinge found in *T. cast. castanotus*, and it seems that the spots on the throat and chest are larger; of this there are five skins in the Mathews' collection. The size of the black spots on the back varies very much, and sometimes they are absent!

1674. **Turnix powelli** Guillemard = *Turnix javanica powelli*.

Turnix powelli Guillemard, *Proc. Zool. Soc. London*, 1885, p. 511 (Gunong Api Island, near Sumbawa).

Type : "♀" Gunong Api Island, near Sumbawa, 19. viii. 1883. H. Guillemard coll.

This specimen, if a female, is hardly adult? I think there can be no doubt that *Turnix javanica javanica*, *rufilata*, *taigoor*, *leggei*, *plumbipes*, *rostrata*, *powelli*, *blakistonii*, and also *fasciata* belong to the same species. *T. javanica powelli* is very variable, a specimen from Alor being quite slaty grey on the upperside. It is now known from Gunong Api, Sumbawa, Satonda, South Flores, Alor, Ampenan near Lombok, Lombok.

1675. **Turnix everetti** Hart. = *Turnix everetti*.

Turnix everetti Hartert, *Nor. Zool.* v, p. 476 (1898—Sumba).

Type : "♀" ad., Waingapo, Sumba, December 1896.

Very small, wing only 70 mm., but sexed by Everett himself. This curious form, of which only the type is on record, resembles in colour very much the rare *Turnix saturata*, from New Britain, but the bill is quite different, short, high, and thick, while that of *saturata* is thin and slender; it is also still smaller.

I cannot see that it can be connected as a subspecies with any of the forms known to me.

GALLI.

1676. **Lagopus mutus pyrenaicus** Hart. = *Lagopus mutus pyrenaicus*.

Lagopus mutus pyrenaicus Hartert, *Vög. pal. Fauna*, iii, p. 1869 (1921—"Pyrenäen").

Type : ♀ Pic de Barbat, val de Cambasque, 2,600 m. altitude, June 1906. J. Mousquès coll.

1677. **Alectoris graeca kleini** Hart. = *Alectoris graeca kleini*.

Alectoris graeca kleini Hartert, *Nor. Zool.* 1925, p. 137 (Skyros, Dede Agach, Harmanli, "Bosphorus").

Type : (♀ ad.) Island of Skyros, 14. x. 1894. Chr. Strimencas coll.

1678. **Alectoris graeca kurdestanicus** Meinertzh. = *Alectoris graeca kurdestanica*.
Alectoris graeca kurdestanicus Meinertzhagen, *Bull. B. O. Club*, xliii, p. 158 (1923—"Dohuk, southern Kurdestan").

Type: ♂ Dohuk, north of Mosul in N. Mesopotamia, 12.xii.1922. R. Meinertzhagen coll.

1679. **Alectoris graeca falki** Hart. = *Alectoris graeca falki*.

Alectoris graeca falki Hartert, *Nov. Zool.* 1917, p. 280 (Russian Turkestan, Bucharra, Transcaspia).

Type: ♂ November 26 (Russian date), 1901, near Prshewalsk (= Karakol), east of Issik Kul. Kutzenko coll.

1680. **Alectoris graeca cypriotes** Hart. = *Alectoris graeca cypriotes*.

Alectoris graeca cypriotes Hartert, *Nov. Zool.* 1917, p. 278 (Cyprus).

Type: ♂ Galata, 21.iii.1906. Ch. Glaszner coll.

1681. **Ammoperdix heyi nicolli** Hart. = *Ammoperdix heyi nicolli*.

Ammoperdix heyi nicolli Hartert, *Bull. B.O. Club*, xl, p. 4 (1919—Wadi Hof near Cairo).

Type: ♂ ad., Wadi Hof near Cairo, 26.xi.1909. M. J. Nicoll coll.

1682. **Francolinus pondicerianus interpositus** Hart. = *Francolinus pondicerianus interpositus*.

Francolinus pondicerianus interpositus Hartert, *Nov. Zool.* 1917, p. 288 (Western India).

Type: ♂ Oudh, India, vi, 1870.

1683. **Francolinus coqui angolensis** Rothsch. = *Francolinus coqui angolensis*.

Francolinus coqui angolensis Rothschild, *Bull. Brit. Orn. Club*, xii, p. 76 (1902—Bailundu, Angola).

Type: ♂ Bailundu, Angola, 1.ix.1901. Hubert C. Pemberton coll.

1684. **Francolinus levaillantii benguellensis** Neum. = *Francolinus levaillantii benguellensis*.

Francolinus levaillantii benguellensis Neumann, *Bull. B.O. Club*, xxi, p. 44 (1908—Benguella).

Type: ♂ Cuima, Benguella, 13.ix.1904. W. J. Ansorge coll. No. 950.

1685. **Francolinus nigrosquamatus** Neum. = *Francolinus nigrosquamatus*.

Francolinus nigrosquamatus Neumann, *Orn. Monatsber.* 1902, p. 8 (Middle Omo River).

Type: ♀ juv., Middle Omo, ford between Malo and Koseha, 21.ii.1901. Oscar Neumann coll.

This peculiar distinct bird has never been found again. I do not know if it could not after all be a subspecies of *F. sharpii* Grant (subspecies of *clappertoni* according to W. L. Selater), though the primaries and rectrices lack the well-defined bars of *sharpii*.

1686. **Francolinus garipeensis pallidior** Neum. = *Francolinus garipeensis pallidior*.

Francolinus garipeensis pallidior Neumann, *Bull. O. Club*, xxi, p. 45 (1908—North Damaraland).

Type: Cunene River. A. W. Eriksson coll.

1687. **Francolinus ugandensis** Neum. = *Francolinus icterorhynchus ugandensis*.
Francolinus ugandensis Neumann, *Orn. Monatsber.* 1907, p. 199 (Mondo in Uganda).

Type: ♂ ad., Mondo in Uganda proper, 24. xii. 1896. W. J. Ansorge coll.

If *F. ugandensis* is distinct at all, it can only be a subspecies of *icterorhynchus*. According to Dr. van Someren (*Nov. Zool.* 1922, p. 28), *emini* (*F. icterorhynchus emini* Neum.) occur together, and certainly a skin from Kyanja in Uganda does not look like *ugandensis*, but like *emini*. This would make it probable that *ugandensis* is not separable from *emini*, and van Someren thinks it is also the same as *icterorhynchus* from the Bahr-el-Ghazal, but that I doubt, and probably van Someren did not examine Bahr-el-Ghazal specimens.

The idea that the type of *F. ugandensis* might be a hybrid between *icterorhynchus* and *clappertoni* is unfounded; if *ugandensis* is not a variety of *emini* it is another subspecies of *icterorhynchus*, but neither a hybrid nor a third species.

(?) 1688. **Francolinus castaneicollis gofanus** Neum. = *Francolinus castaneicollis gofanus* ?

Francolinus castaneicollis gofanus Neumann, *Journ. f. Orn.* 1904, p. 353 (Gadat in Gofa).

Type: ♂ ad., 8. ii. 1901. Oscar Neumann coll.

The type shows the differences described by Neumann very well, but the other specimens not, nor is *bottegi* very constant; further material must therefore decide if *gofanus* can be separated.

1689. **Perdix perdix armoricana** Hart. = *Perdix perdix armoricana*.

Perdix perdix armoricana Hartert, *Nov. Zool.* 1917, p. 284 (Bretagne).

Type: ♂ ad. after first moult. Riaillé, Loire Inférieure, end of October 1900. Present from Dr. Louis Bureau.

The type is very small and very rufous; I have examined a fine series from Calvados, kindly lent me by Monsieur R. le Dart; most of these are also quite typical, but a number are not quite typical, approaching *P. p. perdix* from Central Europe.

1690. **Perdix perdix italica** Hart. = *Perdix perdix italica*.

Perdix perdix italica Hartert, *Nov. Zool.* 1917, p. 283 (Italy).

Type: ♂ ad., Badia di Passignano (Chianti), 20. i. 1905. Ex Squilloni.

1691. **Coturnix coturnix confisa** Hart. = *Coturnix coturnix confisa*.

Coturnix coturnix confisa Hartert, *Nov. Zool.* 1917, p. 423 (Madeira and Canary Islands).

Type: ♂ ad., Ponta do Pargo, Madeira, 12. ix. 1903. Ex Padre Schmitz.

1692 **Coturnix coturnix conturbans** Hart. = *Coturnix coturnix conturbans*.

Coturnix coturnix conturbans Hartert, *Nov. Zool.* 1917, p. 423 (Azores).

Type: ♂ ad., San Pedro, Sta. Maria, 400 feet, 3. iii. 1903. W. R. Ogilvie-Grant coll.

1693. **Coturnix coturnix inopinata** Hart. = *Coturnix coturnix inopinata*.

Coturnix coturnix inopinata Hartert, *Nov. Zool.* 1917, p. 422 (Cape Verd Islands).

Type: ♂ ad., Sao Nicolau, Cape Verd Islands, 7. xi. 1897. Boyd Alexander coll.

1694. **Synoicus raalteni pallidior** Hart. = *Synoicus raalteni pallidior*.

Synoicus raalteni pallidior Hartert, *Nor. Zool.* 1897, p. 271 (Savu Island, between Timor and Sumba).

Type: ♂ Savu Island, August 1896. Alfred Everett coll. Also found on Sumba!

1695. **Arboricola rolli** Rothsch. = *Arboricola rolli*.

Arboricola rolli Rothschild, *Bull. B. O. Club*, xxv, p. 7 (1909—Mt. Si Bajak, Upper Deli, Sumatra).

Type: Adult (sex not ascertained), Mt. Si Bajak, in the district of Batu Bara, Upper Deli. Procured by von Roll, ex Gustav Schneider.

1696. **Bambusicola erythrophrys** Sharpe = *Arboricola erythrophrys*.

Bambusicola erythrophrys Sharpe, *Ibis*, 1890, p. 189 (Kina Balu, N. Borneo).

Type: ♂ ad., Kina Balu, 3,000 feet, 3.iii.1887. John Whitehead coll.

1697. **Odontophorus parambae** R. = *Odontophorus parambae parambae*.

Odontophorus parambae Rothschild, *Bull. B. O. Club*, vii, p. vi (1897—Paramba, N.W. Ecuador); *Nor. Zool.* 1898, pl. 111.

Type: ♀ ad., Paramba, 3,500 feet, 17.iv.1897. W. F. H. Rosenberg coll.

† 1698. **Phasianus berezowskyi** R. = *Phasianus colchicus strauchii*.

Phasianus berezowskyi Rothschild, *Bull. B. O. Club*, xii, p. 20 (1901—Hui-Tsian or Hoi-Sian in S.E. Kansu).

Type: ♂ Hui-Tsian, 1.v.1892 (Russian date). Berezowsky coll.

Since we received a large series of *P. c. strauchii* from the Tsin-ling Mountains, which shows the individual variation of these birds, Lord Rothschild agrees with me that *berezowskyi* is only an extreme of the same form.

1699. **Phasianus hagenbecki** R. = *Phasianus colchicus hagenbecki*.

Phasianus hagenbecki Rothschild, *Bull. B. O. Club*, xii, p. 20 (1901—Kobdo valley, N.W. Mongolia).

Type: ♂ Kobdo River near Kobdo, May 1901. Wilhelm Gieger coll. Bought from Carl Hagenbeck.

1700. **Phasianus ijimae** Dress. = *Syrnaticus soemmeringii ijimae*.

Phasianus ijimae Dresser, *Ibis*, 1902, p. 656 (Province of Hinga on Kiu-siu- Island, Japan).

Type: ♂ ad., S.E. Kiu-siu, 1902. Ex H. E. Dresser.

1701. **Chalcurus inopinatus** R. = *Polyplectron inopinatum*.

Chalcurus inopinatus Rothschild, *Bull. B. O. Club*, xii, p. 42 (1903—Ulu Pahang, central Malay Peninsula).

Type: ♂ ad., Ulu Pahang, January 1902. Obtained by John Waterstradt's native hunters.

This wonderful species is in some ways so intermediate between typical *Polyplectron* and *Chalcurus* that it is advisable to suppress the latter genus. The number of tail-feathers in *P. inopinatum* is 20.

1702. **Rheinardius ocellatus nigrescens** R. = *Rheinardius ocellatus nigrescens*.

Rheinardius ocellatus nigrescens Rothschild, *Bull. B.O. Club*, xii, p. 55 (1902—Ulu Pahang, eastern Malay Peninsula).

Type : ♂ ad., Ulu Pahang, caught by John Waterstradt's native hunters.

1703. **Polyplectron katsumatae** R. = *Polyplectron bicoloratum katsumatae*.

Polyplectron katsumatae Rothschild, *Bull. B.O. Club*, xvi, p. 111 (1906—Mt. Wuchi, Hainan).

Type : ♂ ad., Mt. Wuchi, 18.x.1905. Katsumata (a Japanese collector of Alan Owston) coll.

1704. **Melanoperdix nigra borneensis** R. = *Melanoperdix nigra borneensis*.

Melanoperdix nigra borneensis Rothschild, *Bull. B.O. Club*, xxxviii, p. 3 (1917—Borneo).

Type : ♂ ad., Balingean, Sarawak, Borneo, 4.iv.1903. W. Brooks coll.

1705. **Ptilopachus fuscus major** Neum. = *Ptilopachus petrosus major*.

Ptilopachus fuscus major Neumann, *Bull. B.O. Club*, xxi, p. 68 (1908—"North Abyssinia").

Type : ♂ ad., Arba Shiko, Erythrea, 5,850 feet, on the Anseba River, 16.iii.1903. G. Schrader coll.

1706. **Ptilopachus fuscus brehmi** Neum. = *Ptilopachus petrosus brehmi*.

Ptilopachus fuscus brehmi Neumann, *Bull. B.O. Club*, xxi, p. 68 (1908—Kordofan).

Type : "♀ med." Melpes, East Kordofan, 4.v.1848. Alfred Brehm coll., von Müller's expedition.

1707. **Perdix hodgsoniae caraganae** Meinertzh. = *Perdix hodgsoniae caraganae*.

Perdix hodgsoniae caraganae Meinertzhagen, *Bull. B.O. Club*, xlvi, p. 86 (1926—Eastern Ladak).

Type : ♂ ad., near Shushal, E. Ladak, 13.vi.1925. R. Meinertzhagen coll.

1708. **Eupsychortyx mocquerysi** Hart. = *Eupsychortyx sonnini mocquerysi*, ? or more correctly : *Eupsychortyx cristatus mocquerysi*.

Eupsychortyx mocquerysi Hartert, *Bull. B.O. Club*, iii, p. 37 (1894—Cumana, N. Venezuela).

Type : ♂ ad., "Cumana," January 1894. Albert Mocquerys coll.

I cannot help feeling unhappy at some of the localities given on labels of Albert Mocquerys. It is not impossible that the specimens got mixed, only the month and year when collected being marked. It is also possible that some specimens were bought alive or had been escaped, as in Curaçao and Puerto Cabello *Eupsychortyx* are sold in cages, alive, for food and for aviaries. Mocquerys sent us several *sonnini* and two *mocquerysi*, all labelled "Cumana."

There is an excellent review of the genus *Eupsychortyx* by Clyde Todd in the *Auk*, 1920, pp. 189-220, but I am sorry to say I cannot agree with him in all points.

First of all I consider the grouping into three species quite arbitrary, and in my opinion they are best all treated as subspecies of one species. I do not believe that two forms are actually at home in Cumana proper, as I have already explained. The two different forms, *leucotis* and *parvicristatus*, which used to come among the Bogotá trade skins, do *not*, as far as we can deduct at present, occur together. Chapman only came across *leucotis*, which is found on the western slopes of the

Western Andes, in the Cauca valley as far south as La Sierra south of Popayan. "In the upper Magdalena valley it is abundant," says Chapman, who also had it from the eastern Andes, from El Carmen and El Alto de la Paz, north of Bogotá. *C. cristatus parvicristatus*, on the other hand, he only had from Foméque on the eastern slopes of the Bogotá Andes, towards the Rio Meta plains. Also, Todd allows what he calls *sonnini* only east of the Andes, while his *leucotis* is obviously only known to him from the Andes and west of the Andes.

Todd united *parvicristatus* described from Bogotá trade skins with *sonnini* from the Guianas.

Thus *sonnini* would extend throughout Guiana to East Colombia. This, however, is in my opinion not correct. It is true that we have not seen specimens from Cayenne, nor seem they to have been recorded recently from the French Colony, but they have been observed and collected in Surinam by Penard, and I have examined a good series from British Guiana, in Tring and London, which I presume to be the same as the Cayenne form. These latter differ from the specimens from the Bogotá collections and from a series from the Caura River, a southern tributary of the Orinoco, and those from Altagracia, about 150 miles west of Ciudad Bolivar (Angostura), in the Tring Museum in being generally less brightly coloured, and chiefly by the chest not being reddish chestnut, but reddish grey, in both cases very finely sprinkled, as if powdered, with blackish.

The series from the Caura and Orinoco basins are very much like *parvicristatus* from the eastern side of the Colombian Andes, and I cannot venture to separate them, though probably the ear-coverts are as a rule darker chocolate in Bogotá specimens, and possibly, if better series were available, the measures would differ somewhat.

In any case, the Guiana *E. cristatus sonnini* is not the same as *E. e. parvicristatus* and as the Orinoco skins.

1709. **Numida sabyi** Hart. = *Numida meleagris sabyi*.

Numida sabyi Hartert, *Bull. B.O. Club*, xxxix, p. 69 (1919—West Marocco); cf. *Bull. Soc. Sciences Nat. Maroc*, v, p. 302 (1926¹).

Type: Ad., shot by Monsieur Paul Saby near Oulmès, Zemmour district, West Marocco, February 1919.

† 1710. **Numida ptilorhyncha omoensis** Neum. = *Numida meleagris macroceras*.
Numida ptilorhyncha omoensis Neumann, *Journ. f. Orn.* 1904, p. 407 ("Täler des Omo und seiner Nebenflüsse").

Type: Koscha, N. of Omo River, 21.ii.1901. Oscar Neumann coll.

I cannot separate *omoensis* from the specimens from the South-Ethiopian lakes and neighbouring countries. *N. m. macroceras* (= *omoensis*) differs, however, from the Guinea-fowl of Northern Abyssinia (Erythrea), which seems to be the same as the one from Nubia (Naikhala, N. C. Rothschild coll.).

1711. **Numida ptilorhyncha toruensis** Neum. = *Numida meleagris toruensis*.

Numida ptilorhyncha toruensis Neumann, *Journ. f. Orn.* 1904, p. 410 ("Toru").

Type: ♂ ad., Mokia River, Toru (Uganda Protectorate), 24.iv.1899. W. J. Ansorge coll.

¹ The part is dated "31 août 1925," but did not appear before July 1926.

This form has only an apology of bristles and connects the bristly subspecies with those without bristles on the forehead. It differs in several ways (besides being blacker, there are not the white vermiculations surrounding the round white spots on the breast which make the northern *meleagris* (*ptilorhynchus* auct.) look so much less blackish) from the other forms.

(? †) 1712 **Numida transvaalensis** Neum. = ? *Numida meleagris coronata*.

Numida transvaalensis Neumann, *Orn. Monatsber.* 1899, p. 26 (Transvaal).

Type: ♂ ad., Rustenburg in Transvaal, 9.vii.1893. W. Ayres coll.

I have not sufficient material at my disposal at Tring at present to decide about this form; Selater is of opinion that it cannot be separated from *coronata*.

(?) † 1713. **Numida ansorgei** Hart. = probably *Numida meleagris reichenowi*.

Numida ansorgei Hartert, in Ansorge's *Under the African Sun*, p. 331 (Lake Nakuru, Uganda Protectorate).

Type: ♂ ad., Lake Nakuru, Kenya Colony, 28.iii.1898. W. J. Ansorge coll. No. 357.

Though the differences stated in my original description exist, they are probably individual. The type looks more like *N. m. intermedia* Neum., the distribution and distinguishing characters of which require further confirmation, but geographically it can hardly be different from the Lake Elmenteita and Kikuyu Escarpment examples.

1714. **Guttera cristata seth-smithi** Neum. = *Guttera edouardi seth-smithi*.

Guttera cristata seth-smithi Neumann, *Bull. B.O. Club*, xxiii, p. 13 (1908—Budongo forest, Unyoro).

Type: ♂ ad., Budongo forest, 19.iii.1907. L. M. Seth-Smith coll.

A very distinct subspecies.

1715. **Megapodius duperreyii buruensis** Stres. = *Megapodius duperreyii buruensis*.

Megapodius duperreyii buruensis Stresemann, *Nor. Zool.* 1914, p. 41 (Buru).

Type: ♂ ad., Mount Mada (Gunung Fogha), Buru, 3,000 feet, August 1898. A. Dumas coll.

1716. **Talegallus purpureicollis** Le Souef = *Alectura lathamii purpureicollis*.

Talegallus purpureicollis Le Souef, *Ibis*, 1898, p. 51 (Cape York).

Type: ♂ Somerset, Cape York, 20.x.1896. H. G. Barnard coll.

APTERYGES.

(?) 1717. **Apteryx occidentalis** R. = *Apteryx owenii occidentalis* (?).

Apteryx occidentalis Rothschild, *Bull. B.O. Club*, i, p. lxi (1893—"On the west coast of the South and North Islands." "I propose to call this *Apteryx occidentalis*, a subspecies of *A. owenii*").

Type: A live male obtained by a Mr. Bills at Dusky Sound, southern west coast of the South Island of New Zealand. (Cf. Buller, *Suppl. B. New Zealand*, p. 23.) The specimen was described from the live bird, which afterwards died. It certainly looked somewhat different from other specimens, kept alive at the same time, but if there is a second subspecies of Owen's Kiwi, it can only be the

western form, from the western side of the South Island, and it differs in no way whatever from other specimens, except perhaps by larger size, including a larger bill. We have specimens from Dusky Sound, the Upper Buller district, the Heaphy River, Gillespie Beach, Cook's Glacier, Martin's Bay, and Nelson, all localities on the west side. Our other specimens are all from "New Zealand"; they are smaller, but at least some of them are not adult. Until a series from the eastern side of New Zealand is available, it is not possible to settle the question whether there is a larger western and a smaller eastern form of Owen's Kiwi.

It must be repeated that, as far as we are aware, only one specimen is known from the North Island (cf. *Nov. Zool.* 1899, p. 385), which does not differ from west coast examples. There is, therefore no question of a different North Island form.

Apteryx mollis Potts, 1873, given to an albino Kiwi from the west coast, should apparently be the name, if the larger subspecies is recognised.

(*Apteryx lawryi* Rothschild, *Bull. B.O. Club*, i, p. lxi, 1893, was a new name for Buller's *A. maximus*, which was not Verreaux's *A. maximus* (cf. *Bull. B.O. Club*, l.c.). It was not accepted as different by the author—*Nov. Zool.* 1899, p. 363. Here again a very fine series from Stewart Island, the terra typica of *lawryi*, is available, but very few others with definite locality. There is no difference in colour between any of these, except individually darker and lighter plumage. Though the largest specimens known are from Stewart Island, we do not know if equally large ones are not found on South Island.)

CRYPTURI.

1718. *Crypturus berlepschi* R. = *Crypturus berlepschi berlepschi*.

Crypturus berlepschi Rothschild, *Bull. B.O. Club*, vii, p. 5 (1897—Cachabé, N. Ecuador); fig. *Nov. Zool.* v.

Type: ♀ ad., Caehavi, N.W. Ecuador, about 500 feet, 3.xi.1896. W. F. H. Rosenberg coll.

1719. *Crypturus soui harterti* Brab. & Chubb = *Crypturus soui harterti*.

Crypturus soui harterti Brabourne & Chubb, *Ann. & Mag. Nat. Hist.* (8), xiv, p. 321 (1914—"Vaqueria, N. Ecuador").

Type: ♀ Vaqueria, N. Ecuador, 4.iii.1902. R. Miketta coll.

This form seems to me quite distinct. We had three skins, not only from Vaqueria, but also from Bulún and Rio Tapayo in N. Ecuador. Chapman mentions it from various localities in the tropical zone in N. Ecuador and northwards to "north-western Colombia."

1720. *Crypturus soui hoffmannsi* Brab. & Chubb = *Crypturus soui hoffmannsi*.

Crypturus soui hoffmannsi Brabourne & Chubb, *Ann. & Mag. Nat. Hist.* (8), xiv, p. 321 (1914—"Humaytha, Rio Madeira").

Type: ♀ Humaytha, Rio Madeira, 19.viii.1906. W. Hoffmanns coll. No. 1115.

Judging from our material this form seems to be separable, but it requires confirmation. We have a little series from various places on the Rio Madeira.

1721. **Crypturus soui andrei** Brab. & Chubb = *Crypturus soui andrei* ?

Crypturus soui andrei Brabourne & Chubb, *Ann. & Mag. Nat. Hist.* (8), xiv, p. 321 (1914—Trinidad).

Type : “ ♀ ” Caparo, Trinidad, 16.iv.1902. André coll.

Chubb saw six specimens from Trinidad in the Tring Museum, but he mentions only one female. This form requires further confirmation ; specimens from northern Venezuela seem to be the same, but they differ much from each other.

1722. **Crypturus undulatus confusus** Brab. & Chubb = *Crypturus adspersus confusus*.

Crypturus undulatus confusus Brabourne & Chubb, *Ann. & Mag. Nat. Hist.* (8), xiv, p. 321 (1914—“ Humaytha, Rio Madeira, Brazil ”).

Type : ♀ Humaytha, 29.ix.1906. W. Hoffmanns coll. No. 1301.

1723. **Crypturus hellmayri** Brab. & Chubb = *Crypturus hellmayri*.

Crypturus hellmayri Brabourne & Chubb, *Ann. & Mag. Nat. Hist.* (8) xiv, p. 322 (1914—“ Humaytha, Rio Madeira ”).

Type : “ ♂ ” Humaytha, 18.viii.1906. W. Hoffmanns coll. No. 1107.

This is a single specimen and apparently not fully adult (see the wing-coverts). Hellmayr called it *strigulosus*, a species we do not possess. The grouping into species and subspecies of these Tinamous requires some study.

1724. **Crypturus bartletti caroli** Brab. & Chubb = *Crypturus brevirostris caroli* ?

Crypturus bartletti caroli Brabourne & Chubb, *Ann. & Mag. Nat. Hist.* (8), xiv, p. 321 (1914—“ Rio Madeira ”).

Type : “ ♀ ” Humaytha, Rio Madeira, Brazil, 1.viii.1906. W. Hoffmanns coll.

I find we have 3 adults and 2 young (supposed to belong to this form), not only one. I doubt if this form will be upheld, and I think *bartletti* and *brevirostris* are subspecies of one species, but our material is insufficient to come to a definite conclusion.

1725. *Nothura salvadorii* Hart. = *Nothura boruquira* (?) *salvadorii*.

Nothura salvadorii Hartert, *Nor. Zool.* xvi, p. 266 (1909—Salta, N.W. Argentina).

Type : ♀ ad., Arenal, province de Salta, 750 m., 6.xi.1903. L. Dinelli coll.

I think *boruquira*, *marmorata*, *darwinii*, and *salvadorii* must be subspecies of one species but our material of these birds is scanty, so I cannot form a definite opinion.

1726. **Tinamus tao septentrionalis** Chubb & Brabourne = *Tinamus tao septentrionalis*.

Tinamus tao septentrionalis Chubb & Brabourne, *Ann. & Mag. Nat. Hist.* (8), xii, p. 578 (1913—Plains of Cumana in North Venezuela).

Type : ♂ ad., Plain of Cumana, 21.iv.1898. Caracciolo coll.

CASUARI.

(All the notes signed "R." are supplied by Lord Rothschild, on whose authority the division in species and subspecies is also made. As so many of the Cassowaries came alive without any notion of their habitat, the accepted species and subspecies of course require confirmation. Collectors in New Guinea and neighbouring islands should particularly look out for Cassowaries, and if they collect specimens a sketch and description of shape and colours of the head and neck should be made. Only by much more faithful labour in many places can our knowledge of these birds be considerably advanced.)

1727. *Casuarius casuarius violicollis* R. = *Casuarius casuarius violicollis*.

Casuarius casuarius violicollis Rothschild, *Bull. B.O. Club*, viii, p. xxvii (1899—"Aru Islands, ?Trangan Island"). Fig. *Trans. Zool. Soc. London*, xv, pl. 26.

Type: Mounted by Doggett, sex not stated. Bought alive from a sailor in Liverpool, who said it came from the Aru Islands. Therefore Trangan was suggested, as *beccarii* was known from another island. As Heinrich Kühn later on collected a specimen on Trangan, that suggestion must have been correct.

1728. *Casuarius casuarius lateralis* R. = *Casuarius casuarius lateralis*.

Casuarius casuarius lateralis Rothschild, *Bull. B.O. Club*, xlvi, p. 30 (1925—"North coast to North-East New Guinea").

Type: ♂ ad., bought from the late William Jamrach, who said it came from the "north coast of Dutch New Guinea," "near the frontier of the former German colony."

"The locality given by Jamrach is probably correct, as I have now in my possession a wild shot specimen from the former German colony. This form is nearest to *C. c. altijugus* Sel. but differs by the small amount of orange-red on the lower hind-neck, by the entirely blue lower sides of the neck, and the red colour along the muscles which run up to each side of the gape only extends about half-way up towards the gape." (R.)

1729. *Casuarius casuarius intensus* R. = *Casuarius bicarunculatus intensus*.

Casuarius casuarius intensus Rothschild, *Bull. B.O. Club*, viii, p. xxi (1898—"Hab. unknown"), Fig. *Trans. Zool. Soc. London*, xv, pl. xxvii.

Type: ♂ mounted, bought alive from Jamrach in London.

"When I wrote the monograph of the Cassowaries I considered all two-wattled Cassowaries as subspecies of *Casuarius casuarius*. Dr. Wollaston, however, found *intensus* and *scateri* on the foothills of the Snow Mountains, and both *salvadorii* and *altijugus* were found on the north coast of New Guinea by Laglaize. I therefore concluded that *bicarunculatus* and *casuarius* are two distinct species." (R.)

1730. *Casuarius casuarius chimaera* R. = *Casuarius bicarunculatus chimacra*.

Casuarius casuarius chimacra Rothschild, *Bull. B.O. Club*, xiv, p. 39 (1904—"Habitat unknown").

Type: Mounted, bought alive from Carl Hagenbeek in Hamburg.

"This most extraordinary of all Cassowaries shows the nearest approach in the wattles to *C. bicarunculatus bicarunculatus* of Kabroor (Aru). It is the smallest known Cassowary." (R.)

† 1731. **Casuarius unappendiculatus suffusus** R. = *Casuarius unappendiculatus rufotinctus*.

Casuarius unappendiculatus suffusus Rothschild, *Bull. B.O. Club*, xv, p. 39 (1904—"Habitat unknown").

Type: Mounted. Bought alive from W. Jamrach in London.

"Since describing *suffusus* and *rufotinctus* I have had alive two fine adult specimens, one of each of the two supposed forms. The result of my examination of these two birds convinced me that *suffusus* is only a *rufotinctus* with the wattle partially or wholly destroyed." (R.)

1732. **Casuarius unappendiculatus rufotinctus** R. = *Casuarius unappendiculatus rufotinctus*.

Casuarius unappendiculatus rufotinctus Rothschild, *Trans. Zool. Soc. London*, xv, pt. v, p. 137 (1900—"Hab. unknown"); also *Bull. B.O. Club*, xlvii, p. 26 (October 1926).

Type: ♀ ad., mounted. Bought as a brown striped chick from Cross in Liverpool, and was reared in Tring, later on deposited in the Zoological Gardens in London, where it grew up and was described when about three years old.

"In his account of the birds from the Sepik River Dr. Stresemann said that he recognised only two certain races of *unappendiculatus*, viz. *unappendiculatus unappendiculatus* from Salwatty and *unappendiculatus occipitalis* from Jobi and the mainland of New Guinea. In vol. xlvii, p. 26, 1926, of *Bull. B.O. Club*, I explained that I did not agree with this view. Stresemann's view was evidently founded on the differences between the two specimens found by Dr. Bürgers. But the birds from various places show great differences in the helmets as well as in the colours of the bare parts. Moreover, the exact coloration of Jobi specimens is not known, as nobody in Europe has examined living Jobi examples. Now both Laglaize's specimens in Paris have the three-cornered helmet of *unappendiculatus unappendiculatus*, though of an exaggerated size. They can therefore not be identical with *rufotinctus*, which has the upright helmet of *casuarius*. The type of *rufotinctus* is a variety with much blue on the foreneck, and so is a second specimen now in the Tring Museum, but fully adult normal examples have the whole foreneck and sides of neck crimson, only the wattle being blue." (R.)

1733. **Casuarius unappendiculatus mitratus** R. = *Casuarius mitratus*.

Casuarius unappendiculatus mitratus Rothschild, *Bull. B.O. Club*, xiv, p. 38 (1904—"Habitat unknown"). Fig. *Nov. Zool.* 1907, pl. vi.

Type: Adult, mounted, bought alive from A. E. Jamrach.

"I think it is advisable, from the large size of this bird, the purity of the turquoise blue head and its great disparity from *unappendiculatus unappendiculatus*, to keep this form as a species, though, when we know the distribution of all Cassowaries it may possibly prove to be after all an extreme race of *unappendiculatus*. *C. mitratus* differs at first sight from *rufotinctus* by lacking the orange occipital patch, but it has the intensely crimson lower sides of the neck, like *unappendiculatus rufotinctus*." (R.)

1734. *Casuarium doggetti* R. = *Casuarium doggetti*.

Casuarium doggetti Rothschild, *Bull. B.O. Club*, xiv, p. 39 (1904—Habitat unknown).

Type: Mounted, bought alive from Carl Hagenbeck.

“Differs from all the one-wattled Cassowaries by having two short wattles, but unlike the forms of *C. bicarunculatus* and *C. casuarium* these wattles are placed above each other. In coloration it differs from all one-wattled Cassowaries by the very large yellow occipital patch, and from *rafotinctus* by the pale yellow border to the crimson lower sides of the neck, the yellow, not crimson foreneck, and the three-cornered helmet.” (R.)

1735. *Casuarium philipi* R. = *Casuarium philipi*.

Casuarium philipi Rothschild, *Nor. Zool.* v, p. 418 (1898—“Probably Eastern German New Guinea”).
Figured *Trans. Zool. Soc. London*, xv, pt. v. The real habitat is still unknown.

Type: Mounted, purchased alive.

“At first sight it might appear that *C. philipi* was an extreme melanistic example of *unappendiculatus rothschildi*, but the much deeper blue of the foreneck than that of the hindneck, as well as the very short and very stout legs, serve to distinguish it at once.” (R.)

1736. *Casuarium hagenbecki* R. = *Casuarium hagenbecki*.

Casuarium hagenbecki Rothschild, *Bull. B.O. Club*, xiv, p. 40 (1904—No locality).

Type: Mounted, purchased from Carl Hagenbeck.

“*Casuarium hagenbecki* and *jamrachi* differ from all other Cassowaries by having five wattles. They differ from each other in the coloration of the head and neck.” (R.)

When this bird was described it was quite young, and at the time of its death the colours of the naked parts had changed considerably. The head and foreneck had become blue, the hind-neck and sides of the neck had become orange-yellow, striped with scarlet-red. As the bird has still a lot of its juvenile brown plumage it is quite possible that when perfectly adult it would have proved to be identical with *jamrachi*, but this is impossible to confirm at present. Nothing whatever is known about its habitat.

1737. *Casuarium jamrachi* R. = *Casuarium jamrachi*.

Casuarium jamrachi Rothschild, *Bull. B.O. Club*, xiv, p. 40 (1904—No locality known).

Type: Mounted, purchased when by no means adult from William Jamrach.

This bird also changed very much, and a better description as well as a really good plate is published in *Nov. Zool.* 1907, p. 504, and plate v. Nothing is known about its habitat; the suggestion that it might have come from the Admiralty Islands is unfounded.

1738. *Casuarium papuanus goodfellowi* R. = *Casuarium papuanus goodfellowi*.

Casuarium papuanus goodfellowi Rothschild, *Bull. B.O. Club*, xxxv, p. 7 (1914—Jobi Island).

Type: Mounted in the Tring Museum. It was originally bought by A. E. Pratt on Jobi Island, and brought to London in 1914. It died in the Zoological Gardens in January 1917, and is beautifully mounted by Rowland Ward's taxidermist. The sex is not stated.

“This form is distinguished by the purple patch on the sides of the head, under the ear, and the lower part of the sides of the neck is deep violet.” (R.)

1739. **Casuarius keysseri** R. = *Casuarius keysseri*.

Casuarius keysseri Rothschild, *Bull. B.O. Club*, xxix, p. 50 (1912—"Rawlinson Mts., German New Guinea").

Type: Adult, brought alive from the Rawlinson Mts. (Saruwaged group), by the Rev. Keysser. Died in the London Zoological Gardens.

"This bird seems to represent *C. loriae* R., as *foersteri* does *picticollis*." (R.)

1740. **Casuarius foersteri** R. = *Casuarius foersteri*.

Casuarius foersteri Rothschild, *Bull. B.O. Club*, xxxiii, p. 66 (1913—"Two days inland of Huon Gulf").

Type: Collected one day's journey from the Sattelberg, Huon Gulf region, by the Rev. Keysser. The description of the colours of the bare parts and the coloration of the mounted specimen are taken from a sketch by Mr. Keysser.

1741. **Casuarius loriae** R. = *Casuarius loriae*.

Casuarius loriae Rothschild, *Nor. Zool.*, v, p. 513 (1898—Owen Stanley Mts., Upper Brown River, etc.).

Type: Aroa River, British New Guinea, Emil Weiske coll.

1742. **Casuarius roseigularis** R. = *Casuarius roseigularis*.

Casuarius roseigularis Rothschild, *Bull. B.O. Club*, xv, p. 32 (1905—"Habitat unknown").

Type: A young female in brown plumage, which unfortunately died (at the Zoological Gardens) three days after its arrival in England. Bought from Easton, a dealer.

"This is unfortunately quite a young brown bird. From observations made on other Cassowaries in respect to changes of colour of the naked parts of the head and neck it is probable that the pink foreneck would have become crimson, and the occiput pale greenish blue, while the hindneck and sides of neck would have remained yellow. I never saw any other young Cassowary like it." (R.)

RHEIDAE.

1743. **Pterocnemia tarapacensis garleppi** Chubb = *Rhea pennata garleppi*.

Pterocnemia tarapacensis garleppi Chubb, *Bull. B.O. Club*, xxxiii, p. 79 (1913—Bolivia).

Type: ♂ ad. Esperanza, Bolivia, over 4,000 m., 9.x.1896. Gustav Garlepp, No. 1683.

When the late Count Berlepsch received Garlepp's specimens he said at once that they should be different from those of the Argentine plains, but having none of the latter to compare he refrained from describing it. For me *Rhea pennata pennata* (= *darwini*), *tarapacensis*, and *garleppi* are doubtless subspecies.

STRUTHIONIDAE.

1744. **Struthio camelus syriacus** R. = *Struthio camelus syriacus*.

Struthio camelus syriacus Rothschild, *Bull. B.O. Club*, xxxix, p. 83 (1919—Syrian Desert).

Type: ♂ ad., received as a chick from the Syrian Desert and reared by J. Aharoni in Rehobot near Jaffa, killed in 1918.

1745. **Psammornis rothschildi** Andrews = *Psammornis rothschildi*.

Psammornis rothschildi Andrews, *Verh. V. Internat. Ornith. Kongr.* p. 173 (1912)—“Twenty miles east of Touggourt, S. Algeria,” cf. p. 169).

Types: Two pieces of egg-shell found on the surface in the sand region east of Touggourt, in the Sahara. Similar pieces, quite different from pieces of eggs of *Struthio camelus* (which are commonly found in the northern Sahara), but apparently belonging to another species of “*Psammornis*,” were found by Hilgert and myself 20 miles south of Biskra, and in various places between Ouargla and El-Golea, also by Dr. Fromholz near Temassinine, and by Erlanger and Hilgert in the Tunisian Sahara. Most of these pieces are thinner than the types of *P. rothschildi*, but having been subjected to the action of drifting sand, they must be worn down considerably. The pieces found 20 miles south of Biskra were put together in a playful way, obviously by children, but it is not probable that they were brought there from far away. (Cf. *NOV. ZOOL.* xx, 1913, p. 71.)

¹ The volume, though dated 1911, did not appear before January or February 1912.

(ADDITIONS TO FOLLOW.)

SUPPLEMENT TO THE AVIFAUNA OF YUNNAN (NOVITATES ZOOLOGICAE, XXXIII, pp. 189-343).

By LORD ROTHSCHILD, F.R.S.

WHILE the above-mentioned article was in the press, Mr. La Touche sent to Tring a list and notes on a number of birds sent him by Mr. E. P. Laurente from time to time; principally collected at Szemao in S. Yunnan.

The list enumerates 73 species and subspecies, of which 22 are not included in my Avifauna of Yunnan. The following is the complete list. I have put in particulars where examples have not already been given.

1. *Bambusicola fytchii fytchii* Anders.

1 ♂ Szemao, Oct. 10, 1922.

2. *Porzana fusca erythrothorax* (Temm. & Schl.).

3. *Sphenocercus sphenurus yunnanensis* La Touche.

1 ♂ Hokow, Sept. 16, 1921 (cage bird).

4. *Falco columbarius insignis* (Clark).

1 ♂ ? Yunnanfu, Feb. 4, 1922 (wing 216 mm.). The length of wing points to an error in sexing, as 4 other Chinese birds have a wing-measurement of 200, 205, 207, 207 mm. Type locality Corea.

5. *Glaucidium cuculoides cuculoides* (Gould).

1 ♀ ad., 2 ♂♂ imm., Szemao, Sept. 10 and Oct. 10, 1922.

6. *Otus bakkamoena glabripes* (Swinh.).

1 ♂ Szemao, Nov. 10, 1922.

7. *Otus japonicus* (Temm. & Schl.).

1 ♂ Szemao, June 10, 1922.

8. *Centropus bengalensis bengalensis* (Gm.).

1 ♂ Szemao, July 6, 1922.

9. *Centropus sinensis intermedius* (Hume).

1 ♂ imm., Szemao, Aug. 4, 1922.

10. *Chalcites maculatus* (Gm.).

1 ♂ imm., Hokow, July 1, 1921.

11. *Dryobates semicoronatus* subsp. ? (most likely *omissus*).

1 ♂ Yunnanfu, Feb. 12, 1922; 1 ♀ ?

12. *Ceryle rudis insignis* Hartert.

2 ♂♂ Szemao, July 1 and Sept. 10, 1922.

C. r. insignis differs from *leucomelanura* in the much larger bill.13. *Ceyx tridactyla* (Pall.).

1 ? Hokow, July 10, 1921 (only Chinese record).

14. *Merops orientalis ferrugiceps* Anders.

1 ♂ Szemao, Oct. 1, 1922.

15. *Cyanops asiatica laurentii* Wells.

1 ♂ Tsing Lung Chang, 5,500 feet, May 8, 1922.

16. *Xantholaema haematocephala indica* (Latham).

1 ♂ Szemao, Nov. 10, 1922.

17. *Megalaema virens virens* (Bodl.).

1 ♂ Szemao, March 2, 1923.

18. *Lyncornis cerviniceps* Gould.

1 ♂ Mengtsz, Nov. 16, 1921.

19. *Riparia paludicola chinensis* (Gray).

1 ♂ Szemao, Jan. 26, 1923 (said to be found all over China, but this is the ONLY ONE ever received by La Touche).

20. *Oligura castaneocoronata dejeani* (Oust.).1 ♂ Szemao, Jan. 1, 1923 (I had identified Forrest's specimens as *O. c. castaneocoronata*, but they really are also *dejeani*).21. *Elachura laurentei* La Touche.1 ? Mahuangpo, July 13, 1921 (nearest to *Elachura formosa*, but much darker).22. *Prunella immaculata* (Hodgs.).

1 ♂, 1 ♀ Yunnanfu, Jan. 12, Feb. 10, 1922.

23. *Myiophoneus eugeniae* (Hume).1 ♀ Milati, Dec. 1, 1921 ; 1 ♂ Szemao, Sept. 10, 1922. (♂ 190, ♀ 160 mm. fide La Touche. There is some error here apparently, as all my *eugeniae* ♂♂ have wings from 163-170 mm. and ♀♀ 160-165 mm., those of *coeruleus* 165-170, while ♂♂ of *temmincki* run from 165-180.)24. *Monticola erythrogastra* (Vig.).

1 ♀ ad., 1 ♂ imm., Milati, Dec. 6, 1921.

25. **Turdus mupinensis conquistus** Bangs.

1 ♂ June 1923, loc. ?

26. **Turdus marginatus** (Blyth).

1 ♂ Szemao, Dec. 31, 1922 (1st record for Yunnan).

27. **Pomatorhinus ruficollis albipectus** La Touche.

Already mentioned in my article (2 Szemao), but here add 1 no label.

28. **Pomatorhinus maclellandi odicus** Bangs & Phill.

1 ♂, 1 ♀ Szemao, Sept. 5, 1923 ; and June 6, 1922.

29. **Garrulax cineracea styani** (Oust.).

2 ♂♂ Szemao, Feb. 28, 1923. (La Touche enumerates these under *cinericeps*, and Kinnear in a note agrees with him ; but I cannot accept this identification, for La Touche expressly says these 2 birds LACK the chestnut sides of the head of Fokien examples, whereas *cinericeps* has these chestnut patches. Therefore I cannot designate these Szemao specimens otherwise than as *styani*. The whole question will have to be carefully re-examined when more material is available.)

30. **Garrulax lanceolata lanceolata** (Verr.).

1 ♂, 1 ♀ Szemao, June 10, 1923.

31. **Garrulax chinensis lowei** (La Touche).

1 ♂ Hokow, July 30, 1921.

32. **Garrulax chinensis leucogenys** (Blyth).

1 ♂ Szemao, June 8, 1923.

33. **Garrulax leucolophus diardi** (Less.).

1 ♂ Szemao, Dec. 31, 1922. (It is most strange that this bird, which one would expect to find in Yunnan, has only been obtained at Szemao ; while the other seven specimens recorded from Yunnan are all *G. l. leucolophus*.)

34. **Garrulax canora nantiensis** (La Touche).

1 ♂ Hokow, July 30, 1921 ; 1 ♂ Szemao. (La Touche separates this latter as a doubtful subspecies, but I believe the differences are due to wear.)

35. **Timelia pileata jerdoni** Walden.

1 ♂, 1 ♀ Szemao, May 10, 1923 ; Dec. 21, 1922. (This is probably *intermedia* Kinnear.)

36. **Pellorneum ruficeps minus** Hume.

1 ♂ Szemao.

37. **Pellorneum ruficeps vividum** La Touche.

1 ♂, 1 ♀ Hokow, March 31, 1921. (Omitted by accident from my Avifauna.)

38. *Fulvetta ruficapilla sordidior* (Ripp.).

1 ♂ Szemao, Aug. 10, 1922; 1 ♂, 2 ♀♀ Yunnanfu, June 12, 1921; 2 ? no locality.

39. *Lioptila desgodinsi* (Dav. & Oust.).

1 ♂ Tsing Lung Chang, 5,300 feet, Yunnanfu-Szemao Route.

40. *Brachypteryx cruralis formaster* (Th. & Bangs).

1 ♂ Alushineching, April 24, 1922 (both *C. cruralis* and *C. sinensis* are very similar, but smaller).

41. *Stachyridopsis ruficeps bhamoensis* Har.

1 ? Yunnanfu, June 6, 1921. (La Touche has identified the above Yunnanfu example with *bhamoensis*.)

42. *Minla ignotincta mariae* La Touche.

1 ♂, 2 ♀♀ Milati, Dec. 1, 1921.

43. *Siva cyanuroptera wingatei* O. Grant.

1 ♂, 2 ♀♀ Szemao, May 6, Dec. 6, 1922.

44. *Mesia argentaureis ricketti* La Touche.

1 ♂ Szemao, May 23, 1923; 1 ♂ Alushineching, 6,000 ft., Yunnanfu-Szemao Route, May 8, 1922 (wing 78 and 79 mm.). (Possibly all *Mesia argentaureis* recorded from Yunnan belong to this subspecies.)

45. *Prinia inornata exter* Thay. & Bangs.

1 ♀, 1 ? Szemao, June 5 and Aug. 5, 1922.

46. *Phylloscopus fuscatus* Blyth.

1 ? Mengtsz, Nov. 23, 1921; 1 ♂ Hokow, Oct. 10, 1921; 1 ♂ Szemao, Dec. 18, 1922 (wings 62, 63, 55 mm.).

47. *Franklinia gracilis* (Franklin).

1 ♂ Szemao, Jan. 1, 1923.

48. *Muscicapa thalassina thalassina* (Swains.).

1 ♂ juv. Yunnanfu, June 1921.

49. *Graucalus macei siamensis* Baker.

1 ♂ imm. Szemao, Nov. 10, 1922.

50. *Artamus fuscus* Vieill.

1 ♀ vix ad. Hokow, Aug. 29, 1921.

51. *Chloropsis hardwickii melliana* Stresem.

1 ♀ Alushinching, April 24, 1922. (Bangs and Phillips's examples from Loukouehai are probably this subspecies, but Forrest's birds are undoubtedly typical *h. hardwickii*.)

52. *Microscelis leucocephalus leucocephalus* (Gmel.).

2 ♂♂, 1 ♀ Szemao, Dec. 10 and 20, 1922. (Mr. La Touche applies the name *psaroides concolor* to these birds, but as I have explained in my Avifauna *concolor* is the Burmese subspecies, whereas in Yunnan *leucocephalus leucocephalus* only occurs with 3 colour phases; the above 3 birds belong to the *concolor* phase, i.e. resemble closely typical Burmese *concolor*.)

53. *Iole virescens lonnbergi* (Gyldenst.).

1 ♀ Szemao, Dec. 31, 1922.

54. *Aegithina tiphia styani* La Touche.

1 ♂ Szemao, Dec. 18, 1922; 1 no data.

55. *Otocompsa flaviventris flaviventris* (Tiek.).

1 ♂, 1 ♀ Szemao, Nov. 1922.

56. *Otocompsa emeria jocosus* (Linn.).

1 ♂ imm. Szemao, Sept. 6, 1922 (very much browner than adult examples).

57. *Lanius collurioides siamensis* Gyldenst.58. *Paradoxornis guttaticollis* A. Dav.

3 ♂♂ Szemao, Nov. 27, Dec. 16, 1922.

59. *Regulus regulus yunnanensis* Ripp.

1 ♂, 1 ? Yunnanfu, Feb. 12, 1922.

60. *Sitta yunnanensis* O.-Grant.

1 ? juv. Molangpo, 8,000 ft., Yunnanfu-Szemao Route, May 3, 1922.

61. *Tichodroma muraria* (Linn.).

1 ♂ Yunnanfu, Jan. 1, 1922.

62. *Arachnothera magna aurata* Blyth.

1 ♀ (juv. ?) Mahuangpu, no date.

63. *Emberiza cia yunnanensis* Sharpe.

1 ♂ Yunnanfu, June 12, 1921; 1 ♀ Kopaotsun, June 19, 1921.

64. *Erythrura erythrura roseata* (Hodgs.).

1 ♂ juv. Yunnanfu, June 8, 1921. (La Touche is doubtful if this is *roseata*, but immature birds of all the species of *Erythrura* vary considerably.)

65. *Pyrrhula erythaca altera* Ripp.

1 ? (♀ ?) Malaupo, May 3, 1922.

66. *Fringilla montifringilla* Linn.

3 ♂♂ Milati, Dec. 1, 1921.

67. *Munia atricapilla atricapilla* (Vieill.).

1 ♂ Szemao May 12, 1923. (La Touche is responsible for identifying this as *a. atricapilla*, and I keep it so as all my *a. rubronigra* are from the WEST of Yunnan.)

68. *Amandava amandava flaviventris* (Wall.).

1 ♂ Szemao, Aug. 25, 1923.

69. *Ploceus passerinus infortunatus* Hartert.

1 ♂ (summer plumage), no data. (A new record for China.)

70. *Spodiopsar cineraceus* (Temm. & Schl.).

2 ♂♂ Yunnanfu, Feb. 12, April 10, 1922.

71. *Acridotheres cristatellus cristatellus* (Gmel.).

1 ? juv. Hokow, Aug. 15, 1921.

72. *Cissa chinensis chinensis* (Bodd.).

1 ♀ Putung, nr. Szemao, Sept. 3, 1924. (This example differs from normal *c. chinensis* in having grey bands inside the black subterminal bars of the tertiaries, instead of chestnut ones; but this is due either to fading or is a casual aberration.)

73. *Dendrocitta formosae himalayensis* Blyth.

1 ♂ ad., 1 imm. Szemao, June 5 and 8, 1922.

The following are the forms not enumerated in my Avifauna of Yunnan :

1. *Falco columbarius insignis* (Clark).

Aesalon regulus insignis Clark, *Proc. U.S. Nat. Mus.*, vol. xxxii, p. 470 (1907) (Fusan, Corea).

2. *Otus japonicus* Temm. & Schl.

Otus scops japonicus Temminck & Schlegel in Siebold's *Fauna Jap., Aves*, p. 27, pl. 9 (1850) (Japan).

3. *Centropus sinensis intermedius* (Hume).

Centrococcyx intermedius Hume, *Stray F.*, vol. i, p. 454 (1873) (Thayetmyo).

4. *Ceryle rudis insignis* Hart.

Ceryle rudis insignis Hartert, *Nor. Zool.*, vol. xvii, p. 216 (1910) (Hainan).

5. *Ceyx tridactyla tridactyla* (Pall.).

Alcedo tridactyla Pallas, *Spic. Zool.*, vol. vii, p. 10, pl. 2, f. 1 (1769) (India, ex Seba, etc., erroneously believed to be from America).

6. **Cyanops asiatica laurentii** Wells.

Cyanops davisoni laurentii Wells, *Bull. B.O.C.*, vol. xliii, p. 174 (1923) (Yuen Chang).

7. **Xantholaema haematocephala indica** (Lath.).

Bucco indicus Latham, *Ind. Orn.*, vol. i, p. 205 (1790) (India).

8. **Riparia paludicola chinensis** (Gray).

Hirundo chinensis J. E. Gray in Hardwicke, *Illustr. Ind. Zool.*, vol. i, pl. 35, f. 3 (1830-1832) (Nepal).

9. **Elachura laurentei** La Touche.

Elachura laurentei La Touche, *Bull. B.O.C.*, vol. xliii, p. 172 (1923) (Mahuangpu).

10. **Turdus marginatus** (Blyth).

Zoothera marginata Blyth, *Journ. As. Soc. Bengal*, vol. xvi, p. 141 (1847) (Arracan).

11. **Garrulax leucolophus diardi** (Less.).

Turdus diardi Lesson, *Traité d'Orn.*, p. 408 (1831) (Cochinchina).

12. **Timelia pileata jerdoni** Walden.

Timelia jerdoni Walden, *Ann. Mag. Nat. Hist.* (4), x, p. 61 (1872) (Khasia Hills).

13. **Pellorneum ruficeps vividum** La Touche.

Pellorneum nipalense vividum La Touche, *Bull. B.O.C.*, vol. xlii, p. 17 (1921) (Hokow).

14. **Pellorneum ruficeps minus** Hume.

Pellorneum minor Hume, *Stray Feath.*, vol. i, p. 298 (1873) (Thayetmyo).

15. **Brachypteryx cruralis formaster** (Th. & Bangs).

Heteroxenicus cruralis formaster Thayer & Bangs, *Some Chin. Vert. Aves Mem. Mus. Comp. Zool.*, vol. xl, No. 4, p. 169 (1912) (Washan Mts.).

16. **Mesia argentauris ricketti** La Touche.

Mesia argentauris ricketti La Touche, *Bull. B.O.C.*, vol. xliii, p. 173 (1923) (Szemao).

17. **Artamus fuscus** Vieill.

Artamus fuscus Vieillot, *Nouv. Dict. d'Hist. Nat.*, vol. xvii, p. 297 (1817) (Macao).

18. **Chloropsis hardwickii melliana** Stresem.

Chloropsis hardwickii melliana Stresemann, *Journ. f. Orn.*, 1923, p. 363 (Kwangtung).

19. **Iole virescens lönnbergi** (Gyldenst.).

Criniger lönnbergi Gyldenstolpe, *Kung. Sven. Vet. Handl.*, vol. 4, No. 8, p. 24 (1913) (Bang-huehom, Siam).

20. **Aegithina tiphia styani** La Touche.

Aegithina tiphia styani La Touche, *Bull. B.O.C.*, vol. xliii, p. 174 (1923) (South Yunnan).

21. **Munia atricapilla atricapilla** (Vieill.).

Loxia atricapilla Vieillot, *Dis. Chant.*, p. 84 (1805) (India).

22. **Cissa chinensis chinensis** (Boddl.).

Coracias chinensis Boddaert, *Tabl. Pl. Enl.*, p. 38 (1783) (China).

ON SOME BIRDS FROM THE MULUYA VALLEY, EAST MAROCCO.

BY ERNST HARTERT.

WHILE considerable attention has been paid to the birds of western and north-western Marocco and the Sous (see list of literature, Nov. Zool. 1923, pp. 147-52, further Nov. Zool. 1924, p. 49, *Mém. Soc. Sc. Nat. du Maroc.*, xiii, p. 1, and *Bull. Soc. Sc. Nat. du Maroc.*, v, 6, p. 271), the eastern portion has so far remained unknown.

When looking down from the heights of the eastern slopes of the Middle Atlas, towards the Muluya Valley—the still snow-covered summits of the Great Atlas grandly showing further south—in June 1925, I remarked to my companion, Frederick Young, how different that valley looked, and what there might be. At that time my friend Admiral Lynes had already been there; he reached Missour, a little north of 33° lat., on the Muluya River, coming from Taourirt, and collected there for a few days. Unfortunately the death of his mother caused him to abandon his exploration of East Marocco suddenly, and he brought home only 35 beautiful bird skins, which he handed over to me for study, as he was himself fully occupied with his work on the genus *Cisticola*. This collection, though the smallest we have ever received from Marocco, is one of the most interesting ones. It adds several forms new to the avifauna of Marocco and proves (what good maps suggested) that the eastern plain or stony plateau of Marocco is very different from western Marocco, which zoologically ranges from the Atlantic to the Great and Middle Atlas; on the other hand, a wedge of hammada-like stony desert extends from the foot of the eastern Atlas slopes to the Algerian frontier, and its fauna, judging from Lynes's little collection, is that of the stony Sahara and the Algerian plateau lying between the northern and southern Atlas ranges. Thus such absolutely Saharan forms as *Ammomanes deserti*, *Eremophila alpestris bilopha*, and *Oenanthe deserti homochroa* occur at Missour, while *Galerida cristata randonii* is an Algerian Haut Plateau form; the westerly extension of the large and rare *Galerida cristata randonii* is particularly interesting. It is regrettable that Admiral Lynes could not continue the exploration of the eastern Maroccan wedge, which is dreary stony desert, but very interesting all the same.

Passer domesticus tingitanus Loehe.

Four males and 2 females were shot out of flocks feeding at the camp at Missour. The sexual organs were small or only slightly enlarged, but one male (apparently shot by itself) had them enlarged to the fullest nesting size.

All grey-headed, without traces of *hispaniolensis*, which is very local in Marocco.

Eremophila alpestris bilopha (Temm.).

A pair, the male with testicles 5 and 6 mm., the female with ovary winter size, was collected at Missour 20.iii.1926.

The desert *Eremophila* is new to the Moroccan list, though probably common south of the Anti-Atlas. In the stomach Lynes found grains.

***Anmmomanes deserti payni* Hart.**

Anmmomanes deserti payni, Hartert, *Bull. B.O. Club*, xlv, p. 36 (1924) (Figuig, East Morocco).

Admiral Lynes collected 3 males and 2 females at Missouri, 3,000 feet elevation, on March 20th and 21st. The sexual organs were winter size, not yet in the least enlarged.

This form, which is even more reddish than *A. deserti algeriensis*, is now known from Aïn-Sefra in West Algeria, Figuig, and the Muluya Valley, at Missouri.

It is interesting to see how this species increases in redness towards the west. *A. d. algeriensis*, *intermedia*, and *mya* are redder than *deserti* and *isabellina*, the greyest forms occur in Western Asia, the palest in eastern Central Arabia, the darkest in the Soda Mountains of Tripolitania and near the shores of the Red Sea, in North Arabia, and South Arabia.

***Galerida cristata randonii* Loche.**

Admiral Lynes discovered this large *Galerida* near Missouri, on the Muluya. On March 21st and 22nd he shot 2 males and 4 females. These specimens I cannot distinguish from the two males which I collected in 1914 at Aïn Oussera, on the Algerian Haut Plateau, nearly half-way between Alger and Laghouat. The first description of *Galerida randonii* appeared in the *Rev. et Mag. de Zool.*, 1860, p. 150, but the locality was not stated, only the more than vague statement was made "dans le Sahara algérien." The exact locality was, however, stated in Loche's *Cat. Mamm. et Ois.*, p. 84, two years before: Aïn Oussera. For this reason I went to Aïn Oussera in 1914, with Carl Hilgert, and we obtained 2 males. So far, Aïn Oussera is the only exact locality known. We have, at Tring, an adult male from the Riocour collection labelled "Sahara algérien, M. Drevou, 1864," the "Sahara algérien" probably meaning the Haut Plateau. Admiral Lynes's specimens had the sexual organs winter size or beginning to enlarge, in one male testes $5\frac{3}{4}$ mm. The stomachs contained grains.

Galerida cristata randonii is therefore apparently only an inhabitant of the Haut Plateau from the Muluya in East Morocco to Aïn Oussera, and probably further eastwards. In the south it is replaced by *G. c. macrorhyncha* and *arenicola*. It is one of the rarest forms of *G. cristata* in collections.

The wings of the males measure 114 and 115, of the females 107-110.5 mm.

***Galerida theklae ruficolor* Whit.**

A female was shot 5,000 feet high in the eastern Moroccan Great Atlas, on the northern slopes, between Missouri and Talsint, on the journey to Bu-Denib, March 24th, 1926.

This bird agrees with Whitaker's *G. t. ruficolor*, which is widely spread from the Oum-er-Rebbia to Marrakesh and the Sous Valley, and in the north to Lalla Marnia in N.W. Algeria; in the eastern wedge of Morocco, Muluya Valley, etc., it is replaced by *G. t. carolinæ*, or possibly a slightly more long-winged form, in colour quite like *carolinæ*.

The wing of the female shot March 24th measures 101 mm., a rather large measurement for *ruficolor*.

Monsieur Bédé has shot it at Outat-el-Hadj.

Galerida theklae carolinae Erl.

At Missouri, March 20th and 22nd, Admiral Lynes collected 4 *Galerida theklae*, which agree with *carolinae* (Tunisia and Algeria) in coloration. One, a female, is as reddish as the reddest type in Algeria and Tunisia, and one of the males is similar, while the other two males are more greyish, one about as grey as the greyest Algerian birds. The spots on the chest are large in all four specimens, but equally large-spotted examples are not rare in Algeria and Tunisia. In measurements West-Algerian and East-Maroccan specimens are somewhat large.

50 Algerian-Tunisian skins have wings :

♂ 103–107, twice 108, ♀ 97–100, once 95, rarely 101 mm.

8 West Algerian (Aïn-Sefra and Djebel Aïssa) have wings :

♂ 105–109, ♀ 99–102 mm.

4 East Maroccan (Missour) measure :

♂ 106, 108, 110, ♀ 100 mm.

If a larger series from the western habitats should show still greater dimensions, it would perhaps be desirable to separate them—*G. cristata mucrorhyncha* and *arenicola* are not more different from each other, but their measurements are confirmed by large series.

Oenanthe moesta moesta (Licht.).

The Mourning Wheatear, which is so common in the northern Sahara south of the Atlas Mountains in Algeria, was discovered fairly common in the Sous by Lynes. He also shot a male at Missouri 21.iii.1926. The testes had just "started up," measuring almost 5 mm. across; as *O. moesta* nests (in South Algeria) early in March, the laying period of the females was probably already over.

Oenanthe leucura syenitica (Heugl.).

Two ♂ were collected at Missouri, 3,000 feet altitude, 21.iii.1926. The testes were already somewhat enlarged, about 4.5 mm. diameter.

Oenanthe deserti homochroa (Tristr.).

3♂, 2♀ Missouri in the Muluya Valley, 3,000 feet, 20–22.iii.1926. Two pairs, sexual organs winter size.

These specimens agree with Algerian ones. The occurrence in the Muluya Valley is of great interest. While the form ranging over Nubia and the Egyptian Sudan to North Somaliland is on the upperside, and especially on the crown, of a colder, somewhat more greyish colour, the birds from the Algerian and Tunisian Sahara have a warmer, more reddish hue. But it is not a fact (as we used to think) that *O. deserti deserti* and *homochroa* are eastern and western forms; they are rather southern and northern forms, because *Oe. d. deserti* inhabits Nubia to North Somaliland and is also found in Aïr (Asben), while specimens from Suez and the desert near Cairo, etc., are not separable from *Oe. deserti homochroa* of Algeria.

The late M. J. Nicoll had already noticed these differences, but he called the Nubian and Sudan bird "atrogularis" (*Handl. B. Egypt*, 1919, p. 3).

Temminck, *Pl. Col.* 359, text, ex Rüppell, MS. ! says that he had Rüppell's specimens from Egypt. I quoted this correctly, *Vögl. pal. Fauna*, p. 683, but for some reason unknown in the *Zusätze*, p. 2161, I said it was described from Nubia, not from Egypt! The fact is that Rüppell's specimens in Frankfurt

and Leyden were from both Nubia and Egypt. As no type-specimen was marked I designate *Nubia* as the typical locality; thus the nomenclature of the two forms remains undisturbed.

Oe. deserti atrogularis occurs rarely as a migrant in N.E. Africa, but has not been obtained in Egypt. It is a still greyer, and usually larger, form.

This species is new to the Maroccan fauna. Lynes found beetles and other insect remains in the stomachs. One of the females has a few pure-black feathers on the throat!

***Sylvia conspicillata conspicillata* Temm.**

A female, one of a paired pair, was shot at Missouri 22.iii.1926. The ovary had begun to enlarge.

***Luscinia svecica cyanecula* (Wolf).**

A female Talsint, southern easternmost slopes of Maroccan Great Atlas, 4,000 feet, March 24th, 1926; flushed in evening at side of seggia.

***Erithacus rubecula atlas* Lynes.**

♀ Missouri, Muluya, 23.iii.1926. Ovaries winter size.

P.S.—Since writing the above notes I have received for study from Monsieur Paul Bédé in Sfax 4 males and 4 females of *Galerida theklæ carolinæ*, shot by him at Outat-el-Hadj on the Muluya River, north of Missouri, between the 4th and the 12th of May, 1926. They have the reddish colour characteristic for *G. t. carolinæ*, but some are more greyish—a similar variation as among series from Tunisia and Algeria, which has puzzled many collectors, even Erlanger himself, who discovered and described *carolinæ*, without grasping that also the greyish-coloured specimens belong to the same subspecies.

On the whole, the Outat-el-Hadj examples are long-winged, the 4 male having wings of 105–109, the 4 females wings of 98–101 mm. Perhaps some ornithologist who is "rerum novarum cupidus" will already bestow a name on this possibly larger western form of *G. t. carolinæ*, but it is sufficient to me to record these measurements and to await further material. I am obliged to Monsieur Bédé for letting me compare his specimens.

NOMINA MUTANDA.

BY ALBERT COLLIN & E. HARTERT.

1. *Alcippe poiocephala blythi* nom. nov. versus *A. p. magnirostris* Walden.

Alcippe magnirostris Walden, *Blyth's Cat. Mamm. & B. Burma*, p. 115 (1875—Karennee Hills), nec Moore, *Proc. Zool. Soc. London*, 1854, p. 277 (Malacca).

(Specimens from Bandon in the Northern, Siamese, part of the Malay Peninsula show only partially indications of the blackish side-stripes on the crown; a larger series might serve to separate them again.)

2. *Astur fasciatus vigilax* versus *A. f. insularis* Sarasin.

Astur fasciatus insularis Sarasin, *Nova Caledonia, Zool., Ac.* p. 8 (1913), nec *Astur insularis* Madarász, *Orn. Monatsber.* xviii, p. 65 (1910—Ceylon).

Astur fasciatus vigilax Wetmore, *Condor* xxviii, p. 46 (1926).

3. *Anas leucophrys* Vieill. versus *A. torquata* Vieill.

Anas torquata Vieillot, *Nouv. Dict. d'Hist. Nat.* v, p. 110 (1816—Paraguay), nec S. G. Gmelin, *Reise d. Russl.* ii, p. 179, pl. xiv (1774).

Anas leucophrys Vieillot, *Nouv. Dict. d'Hist. Nat.* v, p. 156 (1816—Paraguay).

4. *Anthus nicholsoni neumannianus* nom. nov. versus *A. n. longirostris* Neum.

Anthus nicholsoni longirostris Neumann, *Orn. Monatsber.* xiii, p. 77 (1905—"Gardulla am Gandjuli See"), nec *Anthus obscurus longirostris* Brehm, *Naumannia*, v i, p. 342 (1856).

5. *Collocalia esculenta erwini* nom. nov. versus *C. e. maxima* Grant.

Bull. B.O. Club, xxv, p. 35 (1914—Utakwa River), nec *C. maxima* Hume, *Stray Feath.* iv, p. 223 (nomen nudum), vi, p. 49 (1878—Mergui. Not nomen nudum but synonym of *innominata*).

6. *Otus hartlaubi* (Gieb.) versus *Otus leucopsis* (Hartl.).

Athene leucopsis Hartlaub, *Rev. Zool.* 1849, p. 496 (St. Thomé), nec Gould, *Proc. Zool. Soc. London*, 1837, p. 99 (van Diemen's Land).

Nortua hartlaubi Giebel, *Thes. Orn.* ii, p. 717, nom. nov. (1875).

7. *Carduelis ictericus bavarici* nom. nov. versus *Carduelis ictericus campestris* (Spix).

Fringilla campestris Spix, *Av. Bras.* ii, p. 48, pl. lxi, fig. 3 (1825), nec Schrank, *Fauna Boica*, p. 181 (1789—Bei Neuburg, Bayern).

8. *Eopsaltria australis griseogularis* Gould versus *E. a. gularis* (Quoy et Gaim.).

Muscicapa gularis Quoy et Gaimard, *Voy. de l'Astrolabe, Zool.* i, p. 176 (1830—King George Sound, W. Austr.), nec Temminck, *Pl. Col.* 167, fig. 1 (1823—Brazil).

Eopsaltria griseogularis Gould, *Synops. B. Austr.* iv, app., p. 2 (1838—Swan River, W. Australia).

9. *Stoparola thalassina thalassina* (Swains.) versus *S. melanops melanops* (Vig.).

Muscicapa melanops Vigors, *Proc. Zool. Soc. London*, 1831, p. 171 (Himalaya), nec Vieillot, *Nouv. Dict. d'Hist. Nat.* xxi, p. 452 (1818—Paraguay).

Muscicapa thalassina Swainson, *Natur. Libr.* x, Flycatchers, p. 252 (1838—India).

10. **Paroaria rubrifacies** nom. nov. versus *P. cucullata* (Lath.).

Loxia cucullata Latham, *Ind. Orn.* i, p. 378 (1790—Brazil), nec Boddaert, *Tabl. Pl. Enl.* p. 24 (1783—Ex Buffon).

11. **Spermospiza haematina pustulata** (Voigt) versus *S. h. guttata* (Vieill.).

Loria guttata Vieillot, *Ois. Chant.* p. 103, pl. 68 (1856—Congo), nec Shaw, *Mns. Lever.* ii, p. 47 (1796—"Australia").

Fringilla pustulata Voigt, *Cuvier's Thierreich.* i, p. 581 (1831—Congo).

12. **Monasa atra** (Bodd.) versus *M. nigra* (P. L. S. Müll.).

Cuculus niger P. L. S. Müller, *Natursyst. Suppl.* p. 90 (1776—Cayenne), nec Linnæus, *Syst. Nat.* ed. x, p. 111 (1758—Bengal).

Cuculus ater Boddaert, *Table Pl. Enl.* p. 30 (1783—Cayenne).

13. **Cyanoderma labuanensis** nom. nov. versus *C. bicolor* (Blyth).

Timalia bicolor Blyth, *Ibis* 1865, p. 46 ("Prepared like the Malaccan specimens," locality therefore unknown, but certainly not from Malacca), nec Lafresnaye, *Mag. de Zool.* 1835, pl. xxxix text.

This form is not rare in Labuan, North Borneo, and restricted to the island of Borneo.

14. **Buteo buteo burmanicus** Oates versus *B. b. japonicus* (Temm. & Schleg.).

Falco buteo japonicus Temminck & Schlegel, Siebold's *Fauna Japon.*, *Aves.* p. 16, Tab. vi (1844—Japan), nec *Falco tinunculus japonicus*, t.c. p. 2, Tab. i (1844).

Buteo burmanicus Oates, *Stray Feath.* iii, p. 30 (1875—Upper Pegu).

15. **Criniger balicus bartelsi** nom. nov. versus *C. gularis gularis* (Horsf.).

Turdus gularis Horsfield, *Trans. Linn. Soc. London.* xiii, p. 150 (1822—Java), nec Latham, *Ind. Orn. Suppl.* p. xl (1801—Cumberland).

16. **Centropus superciliosus intermedius** Someren.

Bull. B.O. Club. xli, p. 125 (1921—Mombasa) is preoccupied by *Centropoccyx intermedius* Hume 1873 = *Centropus sinensis intermedius*.

If confirmed as different, a new name must be invented for van Someren's *intermedius*; cf. NOV. ZOOLOG. 1925, p. 153.

17. **Monticola semicastanea** nom. nov. versus *M. erythrogaster* (Vig.).

Turdus erythrogaster Vigors, *Proc. Zool. Soc. London.* 1831, p. 171 (Himalaya), nec Boddaert, *Table Pl. Enl.* p. 22 (1783), quid est *Spreo pulcher* (P. L. S. Müll.).

18. **Tyto alba tuidara** (Griff. & Pidgeon) versus *T. a. perlata* (Lieht.).

Strix perlata Liechtenstein, *Verz. Doubl.* p. 59 (1823), nec Vieillot, *Nour. Dict. d'Hist. Nat.* vii, p. 26 (1817).

Strix tuidara Griffith & Pidgeon, *Cuvier's Anim. Kingd.*, *Aves* i, p. 74 (1829—Brazil).

19. **Uroleuca cristatella** (Temm.) versus *U. cyanoleuca* (Wied.).

Corvus cyanoleucus Wied. *Reise Brasil.* ii, p. 190 (1821—Brazil), nec Latham, *Ind. Orn. Suppl.* p. xxv (1801—N.S. Wales).

Corvus cristatellus Temminck, *Pl. Col.* 193 (1822—Brazil).

20. **Gerygone neglecta dohertyi** R. & H. versus *G. n. virescens* (Blyth).

Sylvia virescens (Müller MS.) Blyth, *Ibis*, 1870, p. 169 (New Guinea), nec Vieillot, *Ois. Am. Sept.* ii, p. 42 (1807).

Gerygone neglecta dohertyi Rothschild & Hartert, *Nor. Zool.* 1903, p. 473 (Kapaur, New Guinea).

21. *Minus plumbeus* nom. nov. versus *Minus lividus* (Licht.).

Turdus lividus Lichtenstein, *Verz. Doubl.* p. 39 (1823), nec Wilson, *Am. Orn.* ii, p. 90, pl. xiv, fig. 3 (1810).

Turdus cinereus Voigt, Cuvier's *Thierreich*, i, p. 483 (1831), nec Gmelin, *Syst. Nat.* i, 2, p. 810 (1789).

22. *Bradornis pallida bowdleri* nom. nov. versus *B. p. sharpei* R.

Bradornis pallidus sharpei Rothschild, *Bull. B.O. Club*, xxxiii, p. 66 (1913—Abyssinia), nec *Bradornis sharpei* Bocage, *Bull. B.O. Club*, iii, p. xliii (1894—Galanga in Angola).

23. *Anthus spinoletta reuteri* Munst. versus *A. s. borealis* Hesse.

Anthus borealis Hesse, *Journ. f. Orn.* 1915, p. 386 (Sachalin), nec *A. pratensis* var. *borealis* (ex E. v. Homeyer MS.) Blasius, "Naumann, *Naturg. Vög. Mitteleuropas*" (sic!) iii, p. 58 (1900—Anklam in Pommern).

Anthus spinoletta reuteri Munsterhjelm, *Nyt. Mag. for Naturvidensk.* 1916, p. 165 (Sachalin).

24. *Anthus rufogularis* Brehm versus *A. cervinus* Pall.

Anthus rufogularis Brehm, *Lehrb. Nat. eur. Vög.* ii, p. 963 (1824—Nubien und Deutschland).

Motacilla cervina Pallas, *Zoogr. Rosso-Asiat.* i, p. 511 (1827).

25. ? *Fringilla coelebs bellicosa* Floer. versus *F. e. tristis* Floer. ?

Fringilla coelebs tristis Floerike, *Mitt. Österr. Reichsh. f. Vogelk. u. Vogelschutz*, iii, p. 21 (1901—"im Winter auf der kurischen Nehrung"), nec *Fringilla tristis* Linnaeus, *Syst. Nat.* ed. x, p. 181. (1758—"Habitat in America septentrionali").

Fringilla coelebs bellicosus Floerike, *Mitt. Vogelwelt*, xix, p. 105 (1921—Wolhynien).

Fringilla coelebs karelica Räsänen, *Luonnon Ystävä (Naturfreund)*, xxviii, p. 21 (1924—Karelische Halbinsel).

If a north-eastern subspecies of *F. coelebs* can be distinguished, all three above names may perhaps refer to the same form. The descriptions of "*bellicosus*" and "*tristis*," however, do not agree!

26. *Falco peregrinus perconfusus* nom. nov. versus *Falco peregrinus minor* Schleg.

Falco minor Schlegel, *Abh. Geb. Zool. & vergl. Anat.* (2), iii, p. 20 (1844—Kap der Guten Hoffnung), nec *Falco nisus minor* Bekker, Borkhausen & Lichthammer, in Bekker & Lembke, *Teutsche Orn.*, iii, pl. 1-5 (1800-1811, Deutschland).

Falco peregrinus var. *capensis* Grill, *Sr. vet. ak. handl.* ii, 10, p. 48 (1858), nec *F. capensis* Shaw, *Gen. Zool.* vii, p. 192 (1809).

27. *Prunella fulvescens sushkini* nom. nov. versus *P. fulvescens tibetana* Sushk.

Prunella fulvescens tibetana Sushkin, *Proc. Bost. Soc. Nat. Hist.* xxxviii, i, p. 53 (1925), nec *Accentor collaris tibetanus* Bianchi, *Ann. Mus. Zool. Petersburg*, ix, p. 128 (1924) = *Prunella collaris tibetana* (Bianchi).

28. *Lanius collurioides delacouri* nom. nov. versus *L. c. melanocephalus* Delacour.

Bull. B.O. Club, xlvii, p. 13 (1926—Amam), nec *Lanius melanocephalus* Gmelin, *Syst. Nat.* i, 1, p. 309 (1788).

29. *Turdus torquatus caucasicus* nom. nov. versus *T. torquatus orientalis* Seebohm.

Ibis, 1888, p. 311 ("Caucasus and Persia"), nec *Turdus orientalis* Gmelin, *Syst. Nat.* i, 2, p. 821 (1789—India).

30. *Turdus gouldi cinereiceps* nom. nov. versus *T. castaneus castaneus* (Gould).

Mercula castanea Gould, *Proc. Zool. Soc. London*, 1835, p. 185 (Himalaya), nec *Turdus castaneus* P. L. S. Müller, *Natursyst. Suppl.* p. 143 (1776).

31. *Alseonax cinereus nigrorum* nom. nov. versus *A. cinereus cinerascens* (Sharpe).

Muscicapa cinerascens Sharpe, *Cat. B. Brit. Mus.* iv, p. 155 (1879—Gold Coast), nec Spix, *Aves Bras.* ii, p. 16, pl. xii (1825). Cf. Bates, *Ibis*, 1926, p. 584.

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AND

KARL JORDAN, M.A.L., PH.D.

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NOVITATES ZOOLOGICAE

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NEW GEOMETRIDAE

By LOUIS B. PROUT

SUBFAM. HEMITHEINAE

1. *Gelasma insignipecten* sp.n.

♂ ♀, 39-43 mm. Face dirty olive, with slight (very rarely strong) admixture of blackish. Palpus dark above, whitish beneath; 3rd joint in ♀ distinct, rather over $\frac{1}{2}$. Antenna in ♂ with 36 joints pectinate, the pectinations mostly very long, rapidly shortening distally. Vertex in front whitish. Thorax and abdomen concolorous with wings.

Forewing with apex acute, slightly produced, especially in the ♀; pale dull greenish (almost olive-buff), smoothly scaled; lines, as in the allies (*dissimulata* Walk., *illiturata* Walk., etc.), lunulate-dentate, whitish, bounded in median area by ill-defined deeper green shades; cell-spot moderately strong, rather elongate; no terminal line; fringe grey, becoming pale greenish at tips and with a fine pale line at base.—*Hindwing* with the tail moderately long (about as in *dissimulata*); similar to forewing, 1st line wanting.

Underside whitish with an olivaceous tinge and with faint indications of the olive shades which accompany the lines of upper surface; costal edge of forewing bright ochreous; fringes rather dark grey, pale at tips.

Khasia Hills, the type (May 1896) in coll. Tring Mus.

Readily distinguished from *dissimulata* Walk. by the very long and lax antennal pectinations.

SUBFAM. STERRHINAE

2. *Scopula simplificata* sp.n.

♀, 27 mm. Face brown. Vertex whitish. Thorax and abdomen concolorous with wings.

Forewing moderately broad, apex round-pointed, termen somewhat oblique and scarcely convex anteriorly, roundly bent behind R^3 to become more oblique; whitish, suffused with pinkish buff, copiously irrorated with olive-buff and more sparingly with black-grey; cell-dot black; antemedian line slender, rather weak, from costa at 4 mm., excurved but not perfectly regularly between SC and fold, then curving to become rather less oblique inward; median line twice as broad, but also weak, very gently excurved anteriorly and incurved posteriorly, nearly 1 mm. beyond the cell-dot; postmedian stronger, black-grey, from costa 3 mm.

before apex, faintly denticulate (a little more sharply on SC^5 and R^1), but scarcely blackened on the veins, slightly excurved near costa, then approximately parallel with termen, very faintly incurved between M^1 and SM^1 ; distal area very slightly more shaded with grey, leaving traces of a moderate, somewhat waved, pale subterminal; terminal line black, only slightly interrupted at the veins; fringe concolorous to $\frac{2}{3}$, then paler, the black irroration slightly strengthened so as to suggest a dividing line between the two colours.—*Hindwing* with termen rounded; SC^2 well separate from R^1 at origin; antemedian line wanting; median crossing the cell; postmedian correspondingly rather further from termen; otherwise as forewing.

Underside with the cell-dots and postmedian, the latter on hindwing nearer to termen than above; faint traces of the median; forewing slightly suffused proximally; terminal line grey, with blacker interneural dots.

N.E. Africa: Ganale River, 11 April 1901 (C. von Erlanger). Type in coll. Tring Mus.

Akin to *fulvicolor* Hmps. (*Nat. Hist. Socotra*, p. 331), scarcely so broad-winged, much paler, postmedian not appreciably sinuate inward nor so punctuated on the veins.

3. *Scopula erymna* sp.n.

♀, 22 mm. Face and part of palpus brown mixed with black; first joint of palpus and underside of second whitish. Vertex and patagia white; collar light buff-brown. Thorax and abdomen concolorous with wings.

Forewing with costa gently arched in distal one-third, apex moderate, termen smooth, slightly bowed, moderately oblique; SC^1 from areole close to its apex, SC^5 and stalk of SC^{2+4} connate from its apex; whitish vinaceous-pink, with rather copious wood-brown and sparse fuscous irroration; antemedian line fine and faint, brown, oblique outward from one-third costa, acutely angled on cell-fold, then oblique inward to scarcely one-third hindmargin; cell-dot minute, blackish; median line blackish fuscous, rather weak and outbent close to costa, otherwise strong and with a duplicating fuscous shade distally, slightly incurved between the radials, here little beyond the cell-dot, between M^1 and SM^1 very gently incurved, its general course parallel with termen; postmedian blackish fuscous, crenate, not quite parallel with median, receding slightly from it at its subcostal bend; a wood-brown or somewhat cinnamon shade in distal area except anteriorly to SC^2 , reaching tornus but posteriorly somewhat mixed with the ground-colour; a rather thick dark-brown terminal line, scarcely interrupted at the veins; fringe with a rather strong, though slightly interrupted, blackish-fuscous dividing line, proximally and distally hereto whitish mottled with grey and (at least proximally) with some sparse brown irroration.—*Hindwing* with termen not bent at R^2 , only made prominent here by an extremely slight reduction of convexity between R^1 and R^2 ; concolorous with forewing; no antemedian line; median almost straight, more proximal than on forewing, its outer shade narrow, forming a rather diffuse second line, which continues the true median of forewing; postmedian much as on forewing, but scarcely oblique from costa to R^1 ; distal clouding scarcely developed, but reaching costa; termen and fringe as on forewing.

Underside uniform light brown (under the lens whitish suffused with brown), with fine fuscous irroration; both wings with minute black cell-dot and with

median and postmedian lines, the former on hindwing crossing the cell-dot; forewing also with a vague diffuse subbasal band; terminal line rather lighter brown than above; fringes nearly as above.

Curra: Dagaje, 4-5 April 1901 (C. von Erlanger). Type in coll. Tring Mus., together with a dwarf (second-brood ?) ♀ from Woreda, Ganale River, 10-11 June 1901 (collected on the same expedition).

Probably near *bigeminata* Warr. (Nov. Zool. iv. 50), in spite of the very different course of the lines.

4. *Scopula internataria eucentra* subsp.n.

♂ ♀, 20-23 mm. Somewhat variable in colour, but always with an appreciable tinge of vinaceous or flesh-colour. Markings in general more sharply expressed than in name-typical *internataria* Walk., particularly the vein-dots or minute teeth on the postmedian line, that of the forewing on R² rather markedly proximal.

Madagascar: Diego Suarez, January-September 1917 (G. Melou), a long series in coll. Tring Mus. Also a few from Kulau and Sakaramy, in the same district.

I regard as *internataria* Walk. (*List Lep. Ins.* xxii. 746) the African species of the *nesciaria* group in which the hindtarsus of the ♂ is rather less than one-quarter tibia, with rather dense whitish pencil. But it is possible in this extensive and extremely difficult group that more minute anatomical research may show more than one species to possess this character.

5. *Scopula empera* sp.n.

♂ ♀, 14-18 mm. Like the preceding but smaller, with termen of forewing (at least in the ♂) appreciably straighter, causing the apex to appear more pointed, the lines in general weaker (sometimes a good deal suffused), the postmedian more excurved subeostally, not or scarcely black-marked on the veins, the tarsus of the ♂ shorter still (♀).

Madagascar: Diego Suarez, January-August 1917 (G. Melou), a good series in coll. Tring Mus.

6. *Scopula gaudialis* sp.n.

♂ ♀, 18-23 mm. Face black. Palpus black, beneath pale. Vertex whitish buff. Collar ochreous. Antennal shaft tinged with ochreous, proximally with blackish dots above; ciliation in ♂ over I. Head and body concolorous with wings. Hindtibia of ♂ strongly dilated, with dense hair-pencil, the tarsus fully as short as in the preceding species.

Forewing with apex moderate, termen very gently curved; ochreous, densely irrorated with rufous, producing generally a similar tone to some *Sterha* (*ochrata* Scop., etc.), slightly variable; the small cell-dot and terminal dots black; lines more greyish rufous, fine, the median variable, generally more diffuse, sometimes weak, always well beyond the cell-dot and a little incurved in posterior part; antemedian proximal to one-third, somewhat excurved anteriorly, generally slightly incurved posteriorly; postmedian about 2 mm. from termen, not or scarcely punctuated on the veins, weakly sinuous, the inward curves in the usual positions; subterminals scarcely developed, the subterminal itself faintly pale; fringe proximally concolorous or more ochreous, distally

paler, sometimes tinged with vinaceous, centrally with some minute black dots. — *Hindwing* with termen not or scarcely bent in middle: first line wanting: median incurved round the cell-dot, angled outward on base of R^1 ; the rest as on forewing.

Underside paler, more weakly marked; the cell-dots and (especially on forewing) the lines beyond more or less developed.

Comoro Islands, May–September 1911 (G. F. Leigh): Anjouan (loc. typ.), Grande Comoro, and Mayotte, a good series in coll. Tring Mus.

SUBFAM. LARENTHINAE

7. *Lobogonia ambusta salvata* subsp.n.

“*Lobogonia ambusta* Warr.” Prout in Seitz, *Macrolep.* iv. 191, t. 11d (W. China).

Less warm in tint than name-typical *ambusta* Warr. (1893, Khasis), more as in the differently shaped *formosana* Bastelb. (1909); dark maculation in general less developed than in the Khasi examples, postmedian line more curved before middle, on underside of forewing generally double.

W. China: Kankala-shan, Szechwan, type in coll. Tring Mus.; Pu-tsu-fong, etc., 8♂♂ in coll. Brit. Mus.

8. *Sauris curvicosta* sp.n.

♀, 29 mm. Differs from *elaica* Meyr. (*Tr. Ent. Soc. Lond.* 1886, p. 193, Fiji), to which Warren referred it, as follows:

Second joint of palpus less long, its length less than $1\frac{1}{2}$ times the diameter of the large eye (in *elaica* fully twice). Wings rather shorter. Forewing with more rounded costa, more proximal subbasal line, two or three well-developed dark lines from M to SM^2 between subbasal and antemedian. Hindwing and underside darker.

Loyalty Islands: Lifu, 2♀♀ in coll. Tring Mus.

SUBFAM. GEOMETRINAE

9. *Ischnopterix xylinata ockendeni* subsp.n.

♂. Forewing appreciably darker than in *x. xylinata* Guen., from S.E. Brazil, with more of a purplish tinge. Hindwing with the distal border similarly darkened and almost or quite solid as far as the termen, whereas in *x. xylinata* it is subterminal, the termen being almost of the ground-colour.

S.E. Peru, Carabaya: Oconeque, 7,000 ft., type and another in coll. Tring Mus., 1♂ in coll. Brit. Mus., 1♂ in coll. L. B. Prout; Tinguri, 3,400 ft., 1♂ in coll. Tring. Mus.

As the antennal pectinations appear slightly more rudimentary still than those of *x. xylinata*, it is possible that this form will have to rank as a species; but the rest of the structure and the entire pattern seem exactly as in that species.

10. *Ischnopterix callistrepta* sp.n.

“*Ischnopterix discolor* Warr. ♂.” Warr. *Nov. Zool.* xiv. 287 (1907) (nec Warr. *Nov. Zool.* xi. 557).

♂, 52–56 mm. The upperside of the type form well described by Warren (*Nov. Zool.* xiv. 287), except that the basal area of the forewing is in reality

much clouded with the same "dark purplish fuscous" as the central area and that the hindwing, except proximally, is more fleshy than "ochreous." Under-side not "exactly like that of the ♀" of *discolor*: the forewing in the darkest (the type) form fairly similar to that of the species named, but with a distinct black cell-dot and with the pale outer area broader, more fleshy, less clouded with dark-grey in the middle, the terminal black dots sharper; hindwing likewise more fleshy, the median and postmedian lines (especially the former) better expressed, more parallel, the subterminal dark shade subobsolete, chiefly indicated between R^2 and M^1 .

Variable, like most *Ischnopterix*, the 3 ♂♂ from the rather less extreme altitude averaging larger, the forewing beneath less suffused with grey, one example also lighter (more reddish) above, with broadened green sinuous band outside the postmedian, etc.

♀, 62 mm. Slightly narrower-winged than the ♂. Forewing with the "purplish fuscous" and "purplish red" parts fleshy brown, almost concolorous with the distal part of the hindwing, the broad dark median line in consequence showing up strongly, acutely bent outward behind cell-fold and still more strongly, though roundly, at SM^2 .

S.E. Peru, Carabaya: Limbani, 9,500 ft., April 1904, type ♂, May 1904, allotype ♀; Agualani, 9,000 ft., April 1905, 1 ♂, December 1905, 2 ♂♂. All in coll. Tring. Mus., collected by G. Oekenden.

I am at a loss to conceive how Warren confounded this fine species with the much smaller, duller, relatively shorter-winged *discolor*, of which the true ♂ is clearly *conjungens* Warr., Nov. Zool. xii. 59. As regards structure, *discolor* belongs to the group in which the long stalk of SC^{1-2} of the forewing is free from C, *callistrepta* to that in which it is connected by a bar.

11. *Ischnopterix obtortionis* sp.n.

♂, 42-43 mm. Hindtibia with moderate pencil. Abdomen long and slender, but less extremely elongate than in the ♂ of *chlorata* Hb. Head and body above dull olive-green, somewhat mixed with brown, white and black, the abdomen with a pair of black spots on first tergite, then with single black spots; body beneath whitish buff.

Forewing shaped about as in the *chlorata* group, but with an appreciable prominence just proximal to the middle of the hindmargin and with a tuft of dark-grey hair projecting hindward from this prominence; the long stalk of SC^{1-2} connected by a bar with C; olive green, in places more glaucous green, mostly much mixed with red-brown and sprinkled with dark scales, the ground-colour remaining clearest in basal area, in costal region, narrowly along termen and more broadly in a posterior postmedian patch; lines very vaguely indicated in red-brown; antemedian zigzag and very oblique; median inbent just behind SC, then straight and very oblique outward to base of R^3 , this tract alone clear, being margined distally by a greenish patch; a dentate pale, in places white, subterminal, with the deepest indentation at SC^3 ; some black marks proximally to it, at least anteriorly; terminal line sinuous, thickened into black dots between the veins, almost interrupted at the veins.—*Hindwing* narrow, with costal margin long, termen waved, between M^1 and tornus subconcave, abdominal region much as in *multistriata* Warr. (Nov. Zool. xvi. 103) but rolled into a more definite pale pocket above at the abdominal margin; pinkish buff, suffused

with grey, leaving a clearer region between postmedian line and distal band anteriorly; specialized sealing of abdominal region black, the long overlapping hair from M somewhat buff; postmedian line dark grey, straight from costa to R^2 , here bent; a dark distal band, enclosing ill-defined pale spots at termen.

Underside cream-colour to Naples yellow, both wings sharply marked with blackish except posteriorly; forewing with thick oblique median line and a shorter one (SC' to M^1) outside the cell, hindwing with postmedian nearly as above; both wings with irregular subterminal band and whitish midterminal patch.

E. Bolivia: Buenavista, 750 m., August 1906—April 1907 (Steinbach), 2 ♂♂ in coll. Tring Mus. A rather smaller ♀ from La Union, Carabaya, S.E. Peru, in poor condition, seems to agree essentially except in the sexual characters.

12. *Pero longisecta* sp.n.

♂ ♀, 42–45 mm. Probably nearest to *fortunata* Dogn. (*Le Nat.* xiv. 186) = *moliouaria* Oberth. (*Et. Lép.* vi. fig. 1554), but very distinct. Palpus with third joint rather shorter, mostly concealed by the rough hair of second joint. Antenna of ♂ (as in *fortunata*) simple.

Forewing narrower than in *fortunata*, with the termen decidedly more oblique; shadings, as in *fortunata*, in the ♂ ochreous, in the ♀ more rosy, but in both sexes weaker, the grey irroration being very strong, laid on in close transverse strigulae; a very conspicuous pale longitudinal streak in front of M from near base to beyond postmedian, recalling that of *Meticulodes spongiata* Guen. or even of *Pero algerna* Schans, broadest and clearest in cell; cell-spot black, single, with a patch of raised grey scales at its distal side; antemedian line strongly oblique outward to the pale streak, inward behind it, rather uniformly thick except for its central interruption; postmedian oblique outward; three white dots near termen between costa and R^2 , almost equal in development, posterior ones obsolete.—*Hindwing* with the suffusions in both sexes ochreous; postmedian line rather more strongly bent behind than in *fortunata* and here rather more closely approximated to termen.

S.E. Brazil: Ypiranga, Sao Paulo, September 1922 (R. Spitz), type ♂ and 3 ♀♀ in coll. Tring. Mus.; Castro, Parana (E. D. Jones), 2 ♂♂ in coll. Brit. Mus.

13. *Pero obtusaria* sp.n.

♂, 36 mm. Head and body greyish, inclining to light drab, face and the thorax above darker, collar slightly more buff. Antenna simple. Abdomen not robust.

Forewing relatively rather short, apex rather blunt, termen waved, from apex to R^2 hardly oblique, here curved, becoming moderately oblique; greyish, inclining to light drab, with vague darker strigulation and scattered fuscous scales; basal region slightly clouded; a whitish cell-mark, with a black dot on DC^2 ; antemedian line from costa at 5 mm., oblique outward, forming a very strong outward curve in cell, the retracted along M, with a strong dark spot between this and a second, slighter, posterior curve outward; a smaller dark spot close outside the antemedian just behind SC ; a fine whitish postmedian from costa 3.5 mm. from apex, somewhat oblique inward (very slightly more so at costa than subsequently), straightish to fold, then obtusely bent (curved) to run strongly oblique inward to hindmargin; a dark shade accompanying this

line proximally, narrow at its ends but broadening between Sc^5 and hindmargin, reaching its maximum width (fully 2 mm.) about M^2 ; a weaker and more slender dark shade distally to the postmedian from costa about R^2 ; subterminal shade suggested by absence of strigulation, broad behind R^1 , weak at hindmargin and especially at costa: whitish, proximally dark-edged dots close to termen in cellules 7, 6, 5, 3, and 2, the last two the strongest.—*Hindwing* with costa moderately long, termen gently waved; pale at costa: mostly overlaid with drab; cell-dot weakly indicated: a whitish postmedian line, weak anteriorly, strong posteriorly, placed near termen at abdominal margin and especially about M^2 , strongly curved, receding rapidly from termen anteriorly; some dots close to termen, much as on forewing.

Both wings beneath paler and weaker-marked posteriorly than anteriorly; principal markings of forewing indicated, though shadowy; hindwing with twin cell-dot and with postmedian line developed from costa to radials, wavy, dark-edged proximally; dots near termen developed.

Peru: Lima—Matucana districts (A. M. Moss, type in coll. Tring Mus.; Callao, 1 ♂ in coll. Brit. Mus., named "*obtusaria* Warr." (MS.) over 30 years ago.

In shape perhaps nearest to a rather broad-winged *jonesaria* Schaus (1897), from which the straighter postmedian will at once distinguish it.

14. *Pero alticola* sp.n.

♂, 44–49 mm. Intermediate between *scitaria* Oberth. and *variaria* Walk. (= *jamaicensis* Schaus). In shape and colour nearer to the latter, the teeth in the fringes being well appreciable and the ground-colour warmer brown than in *scitaria*.—*Forewing* much less variegated than in *variaria*, the median area having less black admixture and the pale band between it and the subterminal being less clear, more suffused, especially anteriorly; distinct from both in having the double black cell-mark highly developed, more as in *mathilda* Butl., *semiusta* Butl., etc., the anterior mark generally thicker than the posterior and extremely oblique, the two sometimes connected; a bright orange-brown or yellow-brown patch always conspicuous between it and the postmedian, rarely so conspicuous proximally to it; a straightish postmedian line or shade proximally to the true postmedian always more or less distinct, cutting the orange patch; the true postmedian appreciably less sinuous than even in *scitaria*.—*Hindwing* with the characteristic admarginal dots of *variaria* above and beneath poorly or not developed.

S.E. Peru, Carabaya: Agualani, 9,000 ft., common, including the type; Limbani, 9,500 ft.; Oconeque, 7,000 ft., 2 ♂♂; La Union, 2,000 ft., 1 ♂.

I do not think this can be *elmojzensis* Dogn. (*Ann. Soc. Ent. Belg.* xlv. 232), as its author emphasizes the *projecting* postmedian line.

15. *Pero scitaria crepera* subsp.n.

♂. Appreciably broader-winged than typical *scitaria* Oberth. (*Et. Ent.* vii. 27, t. iii, f. 10). Coloration darker both above and beneath, notably on the hindwing, which has the pale areas beneath more restricted, and in particular the apical region remaining dark, so as to bring into strong relief the subapical white dot or dots, which in *s. scitaria* are generally scarcely noticeable.

Colombia: Monte Tolima, 2,700–3,200 m. (A. H. Fassl), a short series in coll. Tring. Mus.

16. *Pero cinnamomina* sp.n.

♂, 40 mm. Antenna simple, rather long. Thorax above cinnamon, body otherwise pinkish buff to light pinkish cinnamon, anterior abdominal tergites marked with cinnamon and blackish. Abdomen slenderer than in *jonesaria* Schaus.

Forewing scarcely so broad as in *jonesaria*, with termen slightly less convex, slightly more waved and appearing still more so by reason of the presence of conspicuous dark spots on the fringe at the ends of the veins; pale buff, clouded with pinkish cinnamon; markings nearly as in *minopenaria* Oberth. (*Et. Lép.* vi. 297, f. 1547); cell-dots small, equal, well separated; shades accompanying the lines cinnamon, not conspicuous; postmedian line still straighter from costa to M²; proximal subterminal shade more parallel with termen than in *minopenaria*, terminal shade almost obsolete, replaced by stronger interneural dots than in *jonesaria*.—*Hindwing* at abdominal margin above more cinnamon than in *minopenaria*, the postmedian line above and beneath more curved, complete (though very weak above); interneural dots near termen almost as on forewing.

Lima-Matucana districts, type ♂; Lima-Chanchamayo, 3 ♂♂, 2 ♀♀ of a larger form or very close ally, none in such fresh condition as the type. All in coll. Tring Mus., collected by Rev. A. M. Moss.

Both *cinnamomina* and *minopenaria* (= "*jonesaria* Schaus" of Prout, *Tr. Ent. Sc. Lond.* 1910, p. 313, and Dognin, *Ann. Soc. Ent. Bely.* lvii. 69, pr. p.) differ from *jonesaria* in their rather less broad forewing, less dark colouring, absence of the characteristic acute inward tooth of the postmedian of the forewing on SM². From *obtusaria* Prout (*supra*), from the same district, *cinnamomina* differs in shape, coloration, etc., though the two show considerable resemblance in the form of the postmedian line of the forewing.

17. *Pero kayei* sp.n.

♂, 48–51 mm.; ♀, 53 mm. In its size and general coloration—particularly of the ♂ beneath and the ♀ above—reminiscent of *bicolor* Warr. (*Nov. Zool.* ii. 137). Antenna of ♂ simple, as in that species. Termen of forewing rather less oblique, of both wings with the teeth less strong.—*Forewing* of ♂ above rather dark cinnamon, the median area slightly shaded with purple and somewhat darkened distally, but without the rich varied shades of *bicolor*; of ♀ more suffused with purple; the angular white cell-mark very slender; antemedian line with the outward curves much more equal in development than in *bicolor*, more as in *asterodia* Druce; postmedian at R³ not angled, at fold with lobe almost as strong as in *asterodia*; no purple-grey bandlike shade outside it between R² and M²; subterminal white dot before R¹ minute, not noticeable.—*Hindwing* with postmedian line almost straight across the wing, posteriorly accompanied by some ochreous ternal shading; subterminal dot between SC² and R¹ white.—Underside of ♀ greyer than in *bicolor*; both sexes beneath with more nearly the markings of *asterodia*, the orange-brown subterminal patch of the forewing, however, faint in the ♂, moderate in the ♀. Hindwing beneath with the postmedian line as strongly bent as in *bicolor*, but not posteriorly so near tornus, the cell-mark rather large and strong, the buff and ochreous ternal shade strong; no pale terminal band.

Jamaica: Newcastle, type ♂ and allotype ♀ in coll. Tring Mus.; 1 ♂ without exact locality in the same collection; Cinchona, 6 December 1898 (W. J. Kaye), 1 ♂ in coll. L. B. Prout.

Certainly nearer to *asterodia* than to *bicolor*, possibly even a highly differentiated island race. The few specimens which passed through Mr. Warren's hands evidently baffled him, as the type is labelled by him "*incompta* Warr.," the allotype "*bicolor* Warr., ? = *asterodia* Druce" and the paratype "*behrensaria* Pack." (!).

18. *Pero albiorbis* sp.n.

♂, 41–42 mm. Near *castanea* Warr. (Nov. Zool. xi. 570) = *miplesebaria* Oberth. (*Et. Lép.* vi, fig. 1549). Wings appreciably broader and more rounded. Coloration paler, about as in *acutusaria* Walk.—*Forewing* with the roundish white cell-spot large, absolutely without the pupil which is indicated or well-developed in *castanea*, the median area between this spot and the antemedian line scarcely differentiated in colour from the rest; the characteristic olive-grey spots at costa and hindmargin also less sharply defined; antemedian line less deeply projecting in cell; postmedian dark, less oblique but slightly more sinuous; a broad, but incomplete, sinuous pale subterminal present.—*Hindwing* with cell-spot smaller and weaker than in *castanea*.—Underside with postmedian of forewing blackish and nearly reaching hindmargin; cell-spot of hindwing fairly large, but less dark-marked within than in *castanea*.

E. Peru: Huancabamba, Cerro de Pasco, 6,000–10,000 ft. (E. Boettger), 3 ♂♂ in coll. Tring Mus.

I suppose *Ensenea* Walk. to be nothing more than a smooth-margined group of the great genus *Pero*.

19. *Pero leptoina* sp.n.

♂, 44–48 mm. Near *mathanaria* Oberth. (*Et. Ent.* vii. 25, t. i, f. 4).—*Forewing* with excision behind apex slightly less deep; proximal area less differentiated (less mixed with dark grey), median area less bright, posteriorly more inclining to chestnut-brown; cell-spot commonly without posterior extension or duplication; postmedian with central concavity generally slighter, sometimes scarcely noticeable; distal area rather paler, the colouring quite differently laid on, forming a multitude of extremely fine, long transverse striations, the dark presubmarginal spot between M² and SM² weak or obsolescent; darkened apical patch narrowed, straighter-edged proximally.—*Hindwing* with tornal patch paler than in *mathanaria*; fringe less bright.—Underside correspondingly less bright (greyer) and with the cell-spot of forewing simple, as above.

S.E. Peru: La Union, Rio Huacamayo, Carabaya, 2,000 ft., November 1904, wet season (G. Ockenden), type and another ♂ in coll. Tring Mus.; Yahuar-mayo, 1 ♂ in coll. Brit. Mus., 1 ♂ in coll. L. B. Prout. Also single ♂♂ from Nouveau Chantier (French Guiana), Sarayacu (Ecuador), and San Gaban (Peru) in coll. Joicey, and Codajas (Upper Amazon) and Allianca (below S. Antonio, Rio Madeira) in coll. Tring Mus.

This must be near to—possibly even a form of—the species which Dognin described (*Mém. Soc. Ent. Belg.* xviii. 186) from St. Jean du Maroni as *semi-brunnea*. As, however, some points in the descriptions do not tally and he does

not mention any close resemblance in his species to *mathanaria*, I can not yet assume them to be identical; if they are not, Dognin's species will need a new name, as *semibrunnea* is preoccupied by *Pero semibrunnea* (Warr.) = *Eusenea semibrunnea* Warr., *Proc. U.S. Nat. Mus.* xxx. 541.

20. *Pero teleclyta* sp.n.

♂, 43-48 mm. Similar to the brightest forms of *anceta* Cram. ♂ (*jimenezaria* Dogn.) but much more gay. Thorax with the narrow central crests brighter ochre. Abdomen above with an ochreous patch on the first two or three segments.

Forewing buff, shaded (especially in proximal area) with ochraceous; a very small purple-grey basal patch, generally also some cloudings in the middle of proximal area, though rarely strong; proximal edge of median band dentate, but entirely or almost entirely without the distal projection in cell; colour of the band light purplish grey with some ochreous scales, becoming narrowly bright brown at distal side; postmedian line more deeply incurved between R^1 and the posterior prong than in *anceta*, the form consequently beginning to suggest that of *constrictifascia* Warr. (1897); an olivaceous shade suffusing the distal area in the excavation, bounded distally by a nearly straight ochreous-brown line (this line, though often present in *anceta*, is there olivaceous).—*Hindwing* with the postmedian line not, or inappreciably, bent at M^2 .

Forewing beneath with a subterminal whitish patch between R^1 and M^1 , forming an anterior prolongation of the whitish posterior terminal area which is common to the two species.

Venezuela: San Esteban, June-August 1909 (S. M. Klages), a long series in coll. Tring Mus., commonest in June; also 1 ♂ from Las Quiguas, in the same district.

21. *Pero rapta* sp.n.

♂, 38 mm. Remarkably like *rapinaria* Guen., from S.E. Brazil, but with the antenna dentate-fasciculate instead of pectinate.—*Forewing* with a slightly stronger tooth at the end of R^1 ; coloration perhaps slightly darker; postmedian line more sharply angled at R^2 , the succeeding excavation slightly deeper.—*Hindwing* with the ochreous tornal patch rather smaller and less bright, some greyish lines which traverse it giving it a slightly more olivaceous tinge.

E. Peru: Huancabamba, Cerro de Pasco (E. Boettger), type in coll. Tring Mus., together with a second ♂, probably from the same district, merely labelled "Peru"; Chanchamayo, 1 ♂ in coll. L. B. Prout, 1 ♂ in U.S. Nat. Mus.

The impossibility of maintaining the separation of the supposed genus *Azelina* Guen. on ♂ antennal characters is well illustrated by this species and *rapinaria*, as well as by the *stuposaria-trailii* group, the *mathilda* group, and others.

22. *Pero caustomeris* sp.n.

♂, 43-49 mm. Very similar to *olonaria* Oberth. (*Et. Ent.* vii. 26, t. i, f. 5), which it appears very likely to replace in Peru.¹—*Forewing* broader, altogether brighter, the brighter hazel median area becoming broadly bright ochraceous-buff anteriorly, the pale band outside the subterminal line generally broader and

¹ The Tring Museum has from Carabaya (Ockenden's collecting) 39 *caustomeris* and 7 *olonaria*; the two were taken together at La Oroya and Santo Domingo.

whiter; antemedian line ending in a small white spot at hindmargin; postmedian straighter at costal end than in *odonaria*, subterminal thicker, notably from M^1 to tornus.—*Hindwing* with the teeth at M^1 and M^2 more pronounced; veins (and posteriorly the entire distal area) more suffused with hazel; tornal part of subterminal line (to M^2) thick.

Underside of forewing, and of hindwing anteriorly, in general more tinged with chocolate than in *odonaria*; forewing with white patch from tornus considerably larger.

S.E. Peru, Carabaya: La Oroya, Rio Inambari, 3,100 ft., common, including the type in coll. Tring Mus.; La Union, Rio Huacamayo, 2,000 ft.; Tinguri, 3,400 ft.; Santo Domingo, 6,500 ft.; Oconeque, 7,000 ft. E. Peru: Cushi, 1,900 m.; Huancabamba, Cerro de Pasco, 6,000–10,000 ft.; Marcapata, 4,000–4,500 ft. Colombia: Monte Tolima 2,700–3,200 m. A fine series in the Tring Museum and other collections.

P. odonaria (Oberth.) is known from Costa Rica, Venezuela, Ecuador, Peru, Bolivia, and Brazil and shows some slight racial variation, but nothing that can be confounded with *caustomeris*.

23. *Pero ognopoea* sp.n.

♂ ♀, 46–48 mm. Like *odonaria* Oberth. but with the median area of the forewing from R^1 to hindmargin darker, especially from M and R^2 hindward—between auburn and chestnut-brown of Ridgway ("Color Standards and Nomenclature"); postmedian line of hindwing less sinuous, on the underside almost straight, only with the slightest outward curve, entirely without the bold sinuosities which are a feature in all the forms of *odonaria*. The forewing has the white cell-mark almost as long as DC^{2-3} , well angled at R^2 (occasionally broken into two dots); the white patch from tornus of forewing beneath is narrow, but reaches R^2 .

S.E. Peru: Carabaya, La Union, Rio Huacamayo, 2,000 ft., December 1904, wet season, type ♂; Santo Domingo, 6,500 ft., November 1904, wet season, allotype ♀; both in coll. Tring Mus. N.E. Peru: Oxapampa, 6,400 ft., 1 ♂ in coll. L. B. Prout. N. Peru: Rentema Falls, Upper Maranon, 1,000 ft. (A. and E. Pratt), 1 ♂ in coll. Joicey. Colombia: Pacho (A. H. Fassl), 1 ♀ in coll. Joicey.

24. *Pero amica fructuosa* subsp.n.

♂, 38–44 mm.; ♀, 43–47 mm. On an average larger and ampler-winged than *a. amica* Butl. 1881 (S.E. Brazil); darker (notably on the hindwing and underside) and with the prevailing grey tone of that race changed to brown, more or less strongly inclining to reddish. Moderately variable, but always strikingly distinct.

S.E. Peru, Carabaya, chiefly at high altitudes: Agualani (loc. typ.) and Limbani, 9,000–9,500 ft., abundant; Oconeque, 7,000 ft., a few; Rio Huacamayo, 3,100 ft., 2 ♂♂. A fine series in various collections († Ockenden), the type in coll. Tring Mus.

25. *Pero spitzi* sp.n.

♂, 41–42 mm. In structure and shape close to *amica* Butl., the hindwing slightly less elongate costally and more fully rounded apically. Antennal pectinations, as in *amica*, very short (scarcely 1). Thorax above predominantly

quaker-drab, abdomen (especially anteriorly) somewhat suffused with that colour.

Forewing with proximal and median area quaker-drab irrorated with black, darkening towards the postmedian line; antemedian rather more blackish, thrice excurved, but with the curves—notable the one in cell—conspicuously shallower than in *amica*: some vinaceous suffusion towards the base; postmedian line shaped as in *stolidata* Guen. (= *advastaria* Oberth. 1883); distal area pallid quaker-drab with the veins more whitish-buff and with a cloud of pinkish and cinnamon suffusion outside the postmedian line, almost obsolete costally, narrowing about the radials, broadening behind, at hindmargin reaching tornus; slighter, more olive-grey terminal suffusions anteriorly; some small black, distally white-edged interneural dots at termen.—*Hindwing* more drab or hair-brown, the costal and distal areas a little paler, the postmedian obsolete at costa, weakly bent at R¹, then straightish, the brown clouding beyond it weak, except at posterior end; terminal dots not white-tipped.

Underside somewhat as in well-coloured examples of *amica*, but the hindwing with the cell-spot very small or obsolescent, the characteristic white terminal dot of cellule 6 wanting, the postmedian line more proximal, the brown shades brighter, more chocolate, developed into ill-defined subterminal bands, that of the forewing only reaching from apex to R², that of the hindwing broad anteriorly, narrowing to tornus.

♀ larger, rather less bright.

S.E. Brazil: Alto de Serra, São Paulo, September 1922—January 1923 (R. Spitz), 6 ♂♂ in coll. Tring Mus., including the type; 13 December 1912 (E. D. Jones), ♀ allotype in coll. Brit. Mus.; Castro, Parana (E. D. Jones), 1 ♂ in coll. Brit. Mus.

26. *Pero homodoxa* sp.n.

♂. Marvellously like *semiusta* Butl. (1881), with which it has always been mixed. Structurally distinct in having the lamellae of the antenna developed into projecting teeth or rudimentary pectinations, the longest of which are nearly as long as the diameter of the shaft. Forewing on an average less bluish grey, more sharply variegated, but with the ferruginous shade proximally to the postmedian often more restricted, or at the costa subobsolete, the grey band beyond the postmedian, on the contrary, often reaching the costa; more constantly distinguishable by having in the cell—sometimes reaching the cell-spot, sometimes shorter—a diffuse blackish extension of the prong of the antemedian line. Forewing beneath often with a more or less definite dark-grey cloud in base of cellules 2 and 3.

S.E. Peru, Carabaya: Santo Domingo, 6,500 ft., a long series, including the type, in coll. Tring Mus.; La Oroya, Rio Inambari, 3,100 ft.; Rio Inambari, 6,000 ft.; Rio Huacamayo, 1,000 ft. Also from Loja, from some localities in E. Peru, particularly Huancabamba, Cerro de Pasco, 6,000-10,000 ft., and from Bolivia, Yungas de la Paz.

In a series of 37 *homodoxa* and 56 *semiusta* in the Tring Museum, which were sorted by the ♂ antenna, every specimen conforms to the test of the dark suffusion in the cell, but as it is short in a few cases in *homodoxa*, while a very few of the *semiusta* from La Oroya show a slight thickening of the postmedian prong in the cell, it is not impossible that it may be found to break down in

rare aberrations, as is so frequently the case with individual characters derived from wing-markings in the closest allies.

27. *Pero brynhilda* sp.n.

♂ ♀, 46–50 mm. Larger than *mathilda* Butl. (1881), rather ampler-winged. Antennal pectinations of the ♂ still shorter (even the outer series not exceeding 1). Genitalia of the ♂ without the remarkably long, projecting, spiked valves which are characteristic of *mathilda*.

Forewing of ♂ with the ground-colour in basal area and especially between the postmedian line and the subterminal pale grey, as in *semiusta*, not brown, as in *mathilda*; the composite black cell-mark with its posterior spot usually enlarged, oftenest extended longitudinally, tapering proximal; the yellow spot outside it lighter and nearly always broader than in *mathilda*, the incomplete grey streak distal to it obsolete or extremely weak, except in the forms from Cushi and Huancabamba (in *mathilda* black-grey, strong from near costa at least to M²); the zigzag subterminal line generally weaker and rather more pinkish than in *mathilda*.—*Hindwing* with the line—at least posteriorly—rather more proximally placed than in *mathilda*.

Underside of a slightly different brown from that of *mathilda* (more inclining to purplish in *homodoxa*, to orange in *mathilda*) and with the colour-blends rather softer.

The only ♀ yet known (Limbani, 9,500 ft.) is brown, but of a more purplish shade than that of *mathilda* and easy to place on account of its large size, the shape of the markings and the weakness of the subordinate ones, apart altogether from the fact that *mathilda* is not yet known from a higher altitude in Carabaya than 7,000 feet (one ♂ from Oconeque).

S.E. Peru, Carabaya: Agualani, 9,000–9,500 ft., 10 ♂♂ in coll. Tring Mus., including the type; Oconeque, 7,000 ft., 4 ♂♂; Limbani, 9,500 ft., 2 ♂♂, 1 ♀.

A race (?) from E. Peru (Cushi and Huancabamba) is slightly intermediate in coloration towards *mathilda*, especially so in the five Cushi examples before me.

28. *Pero circumflexata* sp.n.

♂, 44–45 mm. Similar to a dark *elysiaria* Feld. (*Reise Novara, Lep. Het.* t. cxxiii, f. 12)—colouring of *coracina* Warr. (Nov. Zool. xiv. 318). Distinct from the ♂♂ of both in having the termen of the forewing more strongly toothed at R¹ and M¹, that of the hindwing rather more curved from apex to the tooth at R³, which is directed less distad, more towards the tornus; mid-terminal suffusion of both wings cinnamon, not grey; the white cell-mark of the forewing an obtuse V or circumflex accent, that of the hindwing very small, drop-shaped, almost punctiform.

Peru: Huancabamba, Junin, 3,000 ft., February 1905 (Boettger), type ♂; Chanehamayo (Schunke), 2 ♂♂; Santo Domingo, Carabaya, 6,000 ft., November 1902 (Ockenden), 1 ♂; all in coll. Tring. Mus.

29. *Pero steinbachi* sp.n.

♂, 35 mm. Similar to *retustaria* Walk. (1866), from the West Indies. Antennal pectinations slightly shorter.—*Forewing* with the teeth of the termen still slighter, little noticeable, a black dot present though very small, postmedian line straight from costa to R³, the inward curve between this and the lobe at fold

thus reduced in length and depth, the dots close to termen obsolete; coloration variable as in *vetustaria*, in the type buffy brown with a suffusion of olive, in the paratype nearly cinnamon in proximal and median areas.—*Hindwing* with the postmedian line straighter and less oblique (more proximal at costa) than in *vetustaria*, the dots close to termen obsolete, excepting the last one or two.—Underside much more weakly marked than in *vetustaria*, the dots close to termen wanting, the white postmedian line not or scarcely dark-edged proximally, the cell-mark of the hindwing vestigial.

♀, 37–40 mm. With the usual sexual distinctions of the group, the distal margins being highly dentate (much as in *astapa* Druce ♀), the coloration richer or warmer, though equally variable. Hindwing beneath with the cell-mark slightly less obsolete than in the ♂.

E. Bolivia: Buenavista, July–October 1906 (J. Steinbach), 2 ♂♂, 3 ♀♀, in coll. Tring Mus.

30. *Pero isotenes* sp.n.

♂, 42 mm. Near *xylitaria* Guen. (Oberth., *Et. Lép.* vi, fig. 1563). Antennal joints more serrate, with fascicles of short cilia.—*Forewing* with R² more forward (from one-third DC); in general slightly paler, in particular without the dark longitudinal streak in front of R³; antemedian line distinct from all the allies (*xylitaria* Guen., *cyclodaria* Feld., *albiditata* Prout) in that its anterior tooth (in cell) is at least as long as its posterior one, though without the heavy black shading of the latter; cell-spot white, but much smaller and narrower than in *cyclodaria* and *albiditata*, weakly margined with brown and with a blackish dot at its hinder extremity; subterminal striae between hindmargin and M¹ more nearly parallel with termen than in *xylitaria*, midway between postmedian and termen condensed into a thick dark line or streak.—*Hindwing* with the postmedian line rather proximally placed, on the underside with a very pronounced indentation between the radials.

Colombia: Torné, Cauca Valley, type ♂ and another in coll. L. B. Prout; Cañon de Tolima, 1 ♀ (worn) in coll. Tring Mus. Venezuela: 1 ♂ in coll. Brit. Mus.; Merida, 2 ♂♂ (worn) in coll. Tring Mus.

This species was unfortunately misidentified in the British Museum and (consequently) in my collection as *cyclodaria* Feld. and is referred to under that name in Nov. Zool. xxiii. 189, under "*Meticulodes*" *albiditata* Prout. Felder's figure is practically unrecognizable and the mistake was only discovered on a study of his rather poor type, likewise from Venezuela. I now believe that my *albiditata* is merely a large, broad-winged race of true *cyclodaria*; the Peruvian forms are rather intermediate between the W. Colombian and Felder's type, though nearer to the former, while 4 ♂♂ and 2 ♀♀ from Baeza, E. Ecuador, recently acquired by Lord Rothschild, seem to forge a further link. Confirmatory material from Venezuela, however, is still wanting.

I think the generic name *Meticulodes* Guen., if conserved at all, should be restricted to *spongiata* Guen. (= *tripilunata* Prout) and *beatricaria* Oberth. (1883), in which SC² of the forewing arises from the stalk of SC³⁻⁵.

31. *Pero crepusculascens* sp.n.

♂, 44–45 mm. Antenna, as in the nearly allied *mitraria* Oberth. (*Et. Lép.* vi, fig. 1552), with projecting teeth, nearly as long as diameter of shaft. Both

wings with termen and fringe appreciably more crenulate.—*Forewing* less bright—very little browner than in *obfuscula* Warr. (1895) and *anniculata* Warr. (1907); antemedian more strongly projecting in cell, though not quite so acutely angled as in *anniculata*.—*Hindwing* less blackened than in *mitraria*, the costal and apical regions rather broadly white-mixed.—Underside similarly more pale-irrorated than in *mitraria*, the forewing more broadly whitish posteriorly, the hindwing with the postmedian line more distally placed, the area outside it less bright brown and with indications of whitish subterminal line, outside which the colour becomes paler.

E. Ecuador: Baeza, March 1915, 2 ♂♂ in coll. Tring Mus.

The type form has apparently slightly less broad forewing than *mitraria*, but two worn ♂♂ from Monte Tolima, Colombia, which seem clearly conspecific, are at least as ample-winged as Oberthür's species.

From *anniculata*, wherewith it might easily be confused at first glance, *crepusculascens* differs in the antenna and in the larger cell-spots, with that of the hindwing conspicuous beneath.

32. *Gonodontis justa* sp.n.

♂, 55 mm. Nearest to *bilinearia* Swinh. (1889). Antenna rather slenderer, with the pectinations shorter—little over 1 in *justa*, about 2 in *bilinearia*.—*Forewing* with the tooth at end of R¹ stronger, the excavation behind it deeper, approaching the shape of *similaria* Moore; rather bright cinnamon-buff, the grey irroration being quite weak; discal ocellus rather more elongate (transversely) than in *bilinearia*, with its dark proximal edging twice as broad as its distal; postmedian line rather straighter and not nearer to the termen at costa than at hindmargin.—*Hindwing* with the discal ocellus rather larger than in *bilinearia*, but less black.

Khasis, November 1894, 2 ♂♂ in coll. Tring Mus. (including the type), 1 ♂ in coll. L. B. Prout.

33. *Gonodontis nubigosa* sp.n.

♂, 49 mm. Structure and general facies of *imitata* Warr. (Nov. Zool. iv. 115), the type of Warren's genus *Cenoctenucha*, only with SC² of forewing arising more proximally and with the terminal teeth considerably stronger, though less extreme than in *similaria* Moore. Body and wings darker, the forewing, excepting the pale termen, varied with cinnamon and russet, the median area towards postmedian line more snuff-brown; median area of forewing broad, at costa 13 mm., at hindmargin about 6; antemedian sharply angled at both folds, postmedian nearly straight, both with the whitish vein-dots sharp.—*Hindwing* with cell-spot and postmedian stronger than in *imitata*, the latter beneath not dentate.

Szechwan: Kunkala-Shan, type ♂ in coll. Tring Mus.

34. *Aspitates gonarcha* sp.n.

♂, 43–44 mm. Near *acuminaria* Eversm.—*Forewing* with termen slightly more waved, at least anteriorly, between apex and R⁴ appreciably concave, at R² distinctly bent; antemedian line not bent at fold, on the other hand slightly curved or bent at SM²; postmedian distinct to costa, which it reaches at 5 mm. from apex, slightly oblique inward to just behind SC², then suddenly

excurved, the hinder side of the excurved portion returning more gradually; the band-like shade outside moderately broad in all the examples, reaching the costa, posteriorly widening from M^2 to hindmargin.—*Hindwing* with termen anteriorly much more dentate than in *acuminaria*, the tooth at R^3 made particularly prominent by a noticeable sinus between this and R^1 : postmedian straightish, the shading outside it broad, subtriangular between costa and M^2 , with the apex of the triangle at radial fold quite near termen.

Underside with the dark clouding only strong on forewing proximally and in a rather broad subterminal band which narrows and weakens posteriorly.

Afghanistan: Prov. Kuliab, 3 ♂♂ in coll. Tring Mus.

35. *Nothofidonia xenoleuca* sp.n.

♂, 34–38 mm. Near *ansorgei* Warr. (Nov. Zool. viii, 16), possibly a subspecies. Head and body nearly as in that species. Wings white, only becoming buff at the extreme base and costal edge of forewing and on the hindwing fringes, which are not chequered with black as in *ansorgei*.—*Forewing* with the central longitudinal band narrower and more sharply defined, less ragged at its edges and continued to the termen, though sometimes containing a small terminal black spot; anterior longitudinal band variable, generally broader and shorter than in *ansorgei*, more sharply defined, generally more distal.—*Hindwing* with the abdominal border more broadly blackened or black-irrorated than in *ansorgei*, the costal border also broadly black or black-irrorated.

Abyssinia: Wolisso, between Hauash and Omo, 3–4 June 1925, 10 ♂♂, including the type; N. bend of Omo, 1 June 1925, 1 ♂; all in coll. Tring Mus., collected by O. Neumann.

36. *Myrioblephara finitima* sp.n.

♂, 24–27 mm.; ♀, 27–28 mm. Close to *minima* Warr. (Nov. Zool. x, 393) but less small (expanse of *minima* 21–22 mm.). Hindtarsus of ♂ less short (2 mm. against 1.5), the tibial hair-pencil perhaps less thick, the abdominal spine shorter. Abdomen with the white basal belt generally more restricted.—*Forewing* with postmedian line less inbent at fold, the narrow shade outside it generally marked with distinct dark dashes on the veins.—*Hindwing* with the median area, instead of being brown as in *minima*, almost as white as basal, traversed (at least posteriorly) by a somewhat sinuous median line, which is as distinct as the antemedian and nearer to it than to the postmedian; postmedian less outbent at R^3 – M^1 than in *minima*.

Dutch New Guinea: Mount Goliath, 5,000–7,000 ft., January and February 1911 (A. S. Meek), 5 ♂♂, 4 ♀♀, including the type ♂. British New Guinea: Angabunga River, 1 ♂, 3 ♀♀, misidentified by Warren as *confusa* Warr.

37. *Tephрина benguellae* sp.n.

♂ ♀, 28–35 mm. Close to *punctilinea* Prout (Ann. S. Afr. Mus. xvii, 69, xix, t. xvi, f. 26, *Peridela*). Antennal pectinations of ♂ slightly less short and thick (about 2). Wings not noticeably tinged with ochreous on the veins or about the lines; median line strong throughout, often thickened, on hindwing always proximal to the cell; postmedian line strong, thickened (or, in the less strongly-marked specimens, marked with two large dots) at R^3 – M^1 ; distal area

wholly or largely dark-shaded, bearing a double or confluent dark mark between R^2 and M^1 near the postmedian and a fainter one between M^2 and SM^2 , at least on forewing. Underside likewise more sharply marked, the antemedian line of the forewing generally distinct, the distal dark shade very strong, on forewing reaching termen in anterior half or nearly throughout, a pale spot, however, always developed or indicated between R^2 and M^2 .

Benguella: Talala, 1 December 1905, type and two other ♂♂; Batt, 29 November 1905, 6 ♂♂, 1 ♀; Fort Quilenges, 7 January 1905, 1 ♀; all in coll. Tring Mus., collected by Dr. Ansorge.

As *Peridela* only differs constantly from *Tephрина* in the (often only very slightly) irregular termen of the hindwing, I have sunk it to Guenée's genus (cf. Nov. Zool. xxxiii. 186-7). The present species, *crassata* Warr. (1897) and *punctilinea* Prout, form a very natural group and are perhaps subspecies of a single unit, in spite of the (very slightly) shorter pectinations of *punctilinea*. All have the face slightly protuberant, somewhat chitinised above and a very small, easily abraded, projecting cone of scales below (lost in the originals), transitional towards *Hystomodes* Warr. *T. crassata* is rather large, long-winged and dusky brown, the forewing with a rather distinct white subapical dot, and is the only form known from N.E. Rhodesia; *punctilinea*, from Bechuanaland and S.W. Africa, is the palest and most uniformly small, with punctiform postmedian line, median of hindwing crossing the cell-dot, etc. Except in a few specimens of *punctilinea*, SC^{1-2} of the forewing is free in all the material yet known.

38. *Tolmera culminata* sp.n.

♂, 51-52 mm. Larger than *albibasis* Warr. (1903).—*Forewing* with the pure white basal spot reduced to a few inconspicuous whitish scales; lines less mixed with brown; antemedian almost straight from costa to SM^2 , here dentate outward, thence oblique inward to hindmargin; a conspicuous black spot between this and fovea, some black dashes at costa and a slight black admixture behind SM^2 , the basal area otherwise clear; proximal subterminal shades broad, especially between M^1 and SM^2 ; apical patch more conspicuously pale than in *albibasis*.—*Hindwing* and underside rather darker than in *albibasis*, the forewing beneath rather uniformly so, almost obliterating the markings and bringing into strong relief the pale apical patch.

Dutch New Guinea: Mount Goliath, 5,000-7,000 ft., January (type) and February (paratype) 1911 (A. S. Meek), both in coll. Tring Mus.

39. *Zamarada euerces* sp.n.

♂ ♀, 29-34 mm. Near *phrontisaria* Swinh. (*Tr. Ent. Soc. Lond.* 1904, p. 517), especially in the distal borders.—*Forewing* slightly shorter (termen less oblique anteriorly); translucent green instead of bronzy;¹ transverse pinkish-grey strigulation rather well developed; cell-spot larger, in both species a rhombus, in *phrontisaria* slightly, in *euerces* broadly pale within; distal area scarcely so white proximally, the angular dark markings ("sinuous thin band" of Swinhoe) more proximally placed.—*Hindwing* with cell-mark rather larger and darker

¹ Swinhoe has omitted to mention the colour, which is a very characteristic feature of his species; it varies according to the incidence of the light, so that it may appear more ochreous or pink, but never green.

than in *phrontisaria*; angular markings of distal area narrowed or obsolete outside the broad central bay of the ground-colour.

Sierra Leone, type ♂ in coll. Tring Mus. Ivory Coast; Bingerville (G. Melou), a ♀ in the same collection. Cameroons, interior: Satschi, 21-25 May 1909 (Riggenbach) in coll. Zool. Mus. Berlin. S. Cameroons: Epulan, 30 March 1926 (G. Schwab), a ♂ in coll. Joicey.

Z. euerces phygas subsp.n. ♀, 29-30 mm. Cell-mark of forewing less large (about as in *phrontisaria*); borders on an average narrower.

Tanganyika Territory: Mikindani (Reimer), type in coll. Zool. Mus. Berlin; Tendaguru, Lindi dist. (Janisch), paratype in coll. Joicey.

40. *Zamarada acrochra* sp.n.

♂ ♀, 31-35 mm. Head, antennal shaft, and costal margin of forewing bright orange (capucine yellow), dark-spotted. Collar nearly as bright. Antenna in ♂ pectinate to fully three-fifths, the branches long. Hindtibia of ♂ rather strongly dilated, with hair-pencil. Thorax and abdomen above of the usual pale violet-plumbeous, the abdomen more mixed with light brownish vinaceous and with small yellow crests.

Forewing pale translucent green, with the strigulation moderate; extreme base concolorous with thorax; cell-mark narrow, elongate, generally weak, never intense; postmedian black line somewhat crenulate, from costa at beyond two-thirds in ♂, about two-thirds in ♀, to hindmargin at about the same, the bay between R^3 and M^2 moderate or rather shallow (generally well under one-half breadth of distal area), its proximal angle at R^3 rather rounded off, that at M^2 squarer, its distal end rarely indented on M^1 ; distal area vinaceous brown or somewhat lighter and more reddish; the subterminal triangles darker brown, acute except opposite the bay, the dentate subterminal line pale buff; fringe chequered, orange-brown and blackish.—*Hindwing* with cell-mark still weaker or obsolete; distal markings as on forewing, or with the bay deeper.

Forewing beneath with costal margin duller, cell-mark rather stronger, border very dark proximally (blackish bone-brown), fading off towards fawn-colour distally, with the apex conspicuously paler, recalling that of *excavata* B.-Bak. Border of hindwing similarly coloured, without broadened pale apex.

Senegal: Sédhion (H. Castell), 2 ♂♂, 3 ♀♀ in coll. Tring Mus., the type ♂ dated 17-25 July 1917. Also from Sierra Leone, Ivory Coast, Nigeria, Cameroons, and Congo.

DESCRIPTIONS OF SOME NEW HESPERIIDAE FROM THE
AUSTRALIAN REGION IN THE TRING MUSEUM

By COLONEL W. H. EVANS, C.L.E., D.S.O., F.Z.S., F.E.S.

1. *Hasora buina* n.sp.

Male—Above velvet black, bases clothed with grey-green hairs: head and thorax clothed pale blue-green hairs: abdomen black. No secondary sexual characters. Wings rounded. Cilia dark brown.

Below dark chocolate with a purple flush: outer fifth of forewing and third of hindwing paler. Thorax and palpi clothed blue-grey hairs: abdomen with grey hairs. Forewing dorsum below vein 1 yellow and a small diffuse yellow patch in the centre of the outer third of the cell. On the hindwing there is a narrow yellow streak below and along vein 1 from the base to rather beyond the middle of the wing: a sharply defined small double yellow spot in the centre of the outer third of cell 1 and a similar single spot just before the end of the cell.

Expanse ($2 \times$ distance from centre of thorax to apex of forewing) 54 mm.

Female similar to the male: generally paler and rather larger.

Described from 2 males and 1 female obtained by A. S. Meek in January 1908 at "Buin, Bougainville, Solomon Islands."

The nearest ally is *H. umbrina* Mab. (= *nabroa* Swinh.) from the Celebes, which it resembles on the upperside, in size and wing contour, but the underside of *buina* is very distinct and quite different from any other *Hasora*. There is a female of *umbrina* in the R. Oberthür collection at Rennes: the forewing bears large pale yellow hyaline spots as in *anura* Den.

2. *Hasora lavella* n.sp.

Male—Above dark chocolate brown, paler basally. Head clothed dark olive green hairs: thorax of same colouring as base of wings. No secondary sexual characters. Wings produced as in most *Hasora*, viz. *alexis*. Cilia dark brown.

Below chocolate brown with a purple gloss. Clothing of palpi with the long scales yellow, the sides and short scales brown. Thorax brown: abdomen alternately brown and pale yellow. Forewing tornally yellow-brown: costa to just beyond end cell dark olive green: a narrow crescent (convex to apex) of bluish white scales, sharply defined, midway between the end of the cell and the apex, extending from vein 4 to vein 9. Hindwing crossed by a straight broad (4 mm.), pure white, sharply defined, discal band from the costa (where it is narrowed considerably) well before the apex, across the end of the cell (not entering the cell) to vein 1A well before the tornus, whence it curves to meet the dorsum at the end of vein 1B, narrowing and becoming bluish: the basal area up to the discal band is dark, non-iridescent green, of a rather unusual shade.

Expanse 60 mm.

Female as male: generally paler and rather larger.

Described from 3 males from Vella Lavella, Solomon Islands, and 1 female from Florida Island, obtained by A. S. Meek in March 1908.

The nearest allies are *provissima* Elw. & Edw. from the Philippines, Siam, and Borneo, and *latifascia* Joic. and Talb. from New Guinea, but the peculiarly coloured underside and the apical band on the forewing below readily distinguish *lavella*.

3. *Notocrypta caerulea* n.sp.

Male—Above black with a deep but brilliant steely blue glaze. Head and thorax white spotted. Forewing crossed by a compact broad hyaline band as in the majority of *Notocrypta*, but instead of being white the band is pale shining blue: it extends from vein 1, through spaces 1, 2, base of 3, end of cell to the subcostal vein and there is a narrow white dash on the costa above the band: there is a small white dot on the disc in space 4, another in 7, and another in 8. Hindwing unmarked. Wings rounded, but the apex of the hindwing is somewhat produced and the termen is convex between veins 1B and 3. The cilia of the hindwing are narrowly white from the tornus to vein 6 and at the end of the dorsum, darkened at the end of each vein.

Below generally paler and considerably so at the apex of the forewing and on the outer third of the hindwing and along the dorsum: on the pale areas of both wings the veins are overlaid with sparse white scales. Markings of forewing and cilia of hindwing as above, but the streak on the costa of the forewing is broader. Palpi white spotted and broadly white at the sides.

Expanse 52 mm.

Female as male.

Described from 3 males and 2 females in the Tring Museum and a pair in the British Museum obtained by A. S. Meek between November 1905 and February 1905 at "Angabunga River, affluent of the St. Joseph River, British New Guinea, above 6,000 feet" (locality of type) and "Biagi, Mamberé River, British New Guinea," obtained in April 1906.

N. caerulea generally resembles the ordinary species of *Notocrypta*, but is readily distinguished by the blue glaze, the white spotted head, and the striping below. The antennae are as in *Notocrypta*, there being a few white scales below the club. The palpi are more pronounced and the third joint is more correct, rather as in *Udaspes*.

4. *Plastingia rothschildi* n.sp.

Male—Above black with a deep blue glaze. Forewing with the base below the subcostal vein broadly bright iridescent blue, extending to the middle of the wing. Hindwing with the basal third below the cell iridescent blue, clothed with bluish white hairs. Head and thorax prominently white spotted: upper part of abdomen clothed bluish white hairs. Secondary sexual characters as follows: dorsum of forewing strongly bowed: on the hindwing a large suboval patch of specialized yellow scales lying behind the origin of vein 7 and extending from mid cell to vein 8, overlying which area there is an erectile tuft of long yellow hairs springing from near the base of the cell.

Below black with a dark purple glaze and a very characteristic wing pattern. Palpi bright orange, also the centre of the abdomen: thorax white spotted. Forewing with a short orange streak at the base of the costa: a patch of pale bluish green scales near the end of the cell, continued somewhat obscurely as a streak towards the base of the cell: a rather broad crescentic (convex to apex)

band of similar scales from vein 2 near the termen to vein 9 just beyond the end of the cell: dorsum below vein 2 for a distance of two-thirds from the base denuded of scales (a secondary sexual character) leaving only a large dark central suboval patch of the ground colour. Hindwing with a short broad orange streak at the base of the costa: a very large sharply defined pale bluish white apical oval area extending from just beyond the yellow basal streak very nearly to the apex and from the lower edge of the cell very nearly to the costa: a pale bluish green submarginal band, widening dorsally, from vein 4 to the dorsum: centrally between this band and the base there is a pale bluish white spot on the dorsum.

Expanse 44 mm. Apex of forewing produced, hindwing rounded. Antennae as in *Plastingia* generally, but the apiculus is longer than usual and tends to twist round the shaft. Palpi with the third joint prominent, stout and porrect.

Female as male: with rounder wings and no secondary sexual characters.

Described from 2 males and a female obtained at Milne Bay, British New Guinea, in February 1899 by A. S. Meek.

This beautiful little species on the upperside generally resembles *P. extrusus* Hew., of which there are several specimens at Tring and in the British Museum. The underside of *P. rothschildi* is very remarkable and the secondary sexual characters are unique as far as the genus *Plastingia* is concerned. *P. extrusus* is a very variable species in respect of the hyaline spotting on the forewing and the pale markings on the hindwing below: it was redescribed by Joicey and Talbot as "*Mimene basalis*" in A.M.N.H. 1916 and 1917.

5. *Plastingia papua* n.sp.

Male—Above dark brown with a strong purple gloss. Base of hindwing and body sparsely clothed golden yellow hairs and some similar hairs on the palpi. Forewing with a golden yellow band composed of four conjoined spots, arranged thus: across space 1 from mid vein 1 to base vein 2, in space 2 very nearly to the base, at the extreme base of space 3 and in the lower part of the cell behind the origin of vein 3: some obscure yellow scales towards the apex in spaces 6 and 7. Hindwing with the basal half of the costa yellow: a large circular golden yellow discal spot in spaces 4-5 and a smaller similar spot further from the margin in space 1B. Cilia dark brown. No secondary sexual characters.

Below—Forewing brown with a deep purple gloss: a yellow costal streak extending half-way along the costa from the base: a discal yellow band as above and a yellow patch in spaces 6 to 8, also some scattered yellow scales towards the termen in spaces 3, 4, and 5. Hindwing brilliant shining purple: a large suboval yellow area at the base of the costa, extending to half-way along the costa and just reaching the cell: golden yellow discal spots as above: small submarginal yellow spots from space 1A to 6 and a dash of yellow towards the base in space 1. Palpi and legs golden yellow: abdomen narrowly banded dull yellow.

Expanse 36 mm. The antennae are plain dark brown with a long apiculus as in all *Plastingia*. The third joint of the palpi is short, stout, and porrect: the palpi are very variable in this genus. The venation of the hindwing is somewhat aberrant in that the cell is very long, more than three-quarters the width of the wing. Forewing somewhat produced: hindwing rounded.

Described from 2 males from New Guinea. The type is marked "Hydrographer Mts., British N.G., 2,500 feet, Eichhorn Bros., February 1918."

The markings of the forewing resemble *P. telesinus* Mab., from the Philippines,

but the large spots on the hindwing and the brilliant purple and gold underside distinguish *P. papua* from any other species.

6. *Pirdana cyanea*, n.sp.

Male—Above dark brown, basally clothed with dark orange brown hairs. On the forewing there is a narrow, irregular, and interrupted dark brown brand from two-thirds along vein 1 to vein 4 and just beyond the cell. Cilia dark brown.

Below dark brown with a strong purple gloss. Forewing apex paler. Hindwing crossed by a broad (4 mm.) dull yellow band from the costa behind the apex to vein 1B: a diffuse and rather obscure patch of scattered pale bluish scales along the tornus in 1B. Palpi with white scales freely intermixed with the ordinary brown scales and broadly white at the sides. Thorax and abdomen with some white scaling: abdomen orange at the sides for a distance of two-thirds along from the thorax (a very unusual feature).

Expanse 48 mm. Wings produced and of the usual *Pirdana* shape, e.g. *hyela*. Antennae plain and as in *Pirdana*. Palpi with the third joint stout, rather short and erect.

Female above generally as the male, but without the brand, paler, slightly larger and wings more rounded. Below the glaze is dark indigo and on the hindwing the band is paler, wider (6 mm.), extending full width to the dorsum turning pale bluish white beyond vein 1B. Forewing with a rather broad bluish white discal band from vein 1 to vein 4 in continuation of the hindwing band: a similar irregular patch in the centre of the cell above the origin of vein 3, also a few similar scales beyond the upper apex of the cell.

The type-specimen is marked "Kapaur, low country, February 1897, W. Doherty." There are 3 more pairs from New Guinea at Tring and a few specimens in the British Museum.

P. cyanea generally resembles *P. tiacellia* Hew. from Aru and New Guinea, and has doubtless been confused with that rare species, of which there are a few specimens of both sexes at Tring and a pair (including the type) at the British Museum. *P. tiacellia* differs in having no brand, a yellow costa to the hindwing above, orange palpi below, while the band on the hindwing below turns orange at the upper end.

SOME OBSERVATIONS ON A PAIR OF SARUS CRANES AT TRING

By ERNST HARTERT AND FREDERICK YOUNG

LORD ROTHSCHILD is keeping a pair of Sarus Cranes, *Grus antigone antigone*, in a paddock opposite the Museum. The female is about twelve years old, while the male was only received in 1924, being a juvenile bird, probably not two years old. As is well known, all Cranes are very interesting and gentle birds in captivity, and we always enjoy to observe them.

Blauw noticed in *Grus japonensis*, St. Quintin in several other species of Cranes, that moult did not take place every year, and it is obvious that our *Grus antigone* do not moult every year, but only every second and apparently even sometimes every third year, though they seem oftener to renew the down covering part of their body under the feathers.

Our cranes are rather noisy birds, uttering, chiefly in the pairing season or when otherwise excited, their loud trumpet calls. These calls are not so deep as those of *Grus grus*, but higher, shriller. As a rule the male begins with a loud *krüüü*; immediately the female answers with a still shriller, more prolonged, drawn-out, and somewhat rolling shriek; when uttering these trumpet blasts they usually face each other, and sometimes bow to each other. They are chiefly fed on dog biscuits and get from time to time some meat and vegetables; they also catch insects, worms, etc., in their paddock. If they are given dead birds (mostly sparrows), rats or mice, in nine times out of ten they wash¹ them in water, especially when bigger, while sparrows and mice are often swallowed at once entire. Rats and moles they crush and shake until the skin comes off, or at least most of it; of birds they tear and shake tails and wings off.

Very amusing are their dances. They are rightly called dances. The birds run round the paddock, then strut about with stiff legs, bow to each other, hop into the air, tear out pieces of turf, throw them into the air, and sometimes catch them up again, and this performance is often accompanied by trumpet blasts.

In 1925 they began to pair. A nest was commenced on July 17, and the first egg laid July 20, a second on the 22. The female then began to incubate at once. The eggs were taken away on September 8; they had been unfertile.

Another nest was built from September 22, and finished the next day. The nests consisted of dry grass, dry nettle stalks, and small pieces of wood. On September 23 the first egg was laid, the second on the 27th. Again the eggs were not fertile. The male has never been sitting and the female, who seems alone to incubate, is a somewhat poor sitter, often leaving the eggs for short periods.

In 1926 a nest was hurriedly constructed on June 28, and an egg laid; the second the 30th, between eight and nine in the morning. Again the female incubated alone, and the eggs, after being incubated for forty-seven days, were taken up and found to be infertile.

¹ This "washing" is done quite deliberately, and sometimes also pieces of liver or meat are washed; it is of course impossible to say whether this is actually done in order to clean the food, or to wet it for the purpose of swallowing it more easily.

On August 29 and 30 two eggs were laid again, in a very small and carelessly constructed nest, and the female sat more irregularly and badly than before. Eggs not fertile.

In 1927, on July 8, an egg was laid on the bare ground and immediately broken and eaten by the male. A slight nest was made on the following day, and an egg laid on the 10th, a third on July 13. The female made no attempt to sit, but broke and ate both eggs. Further eggs were laid, either on the bare ground or in an apology for a nest, some outside in the paddock, some in the sleeping shelter, but all were eaten by the female, unless at once taken away.

On the day of writing, August 22, an eighth egg was laid in the sleeping-house and not eaten by the birds.

The eggs differ widely from the brown eggs of European and most other Cranes, in being white, more or less glossy, with rugous or yellowish brown, and some deeper-lying mauve or dull violet spots, mostly small and often sparse. Against the light the shell looks green. The eggs laid in Tring, as far as they could be saved, measure: 108×66 , 107×67 , 106×66 , 105×66 , 104×65.5 , 103.5×63.5 , 102.5×61 , 99.5×62.5 , and 99×66.5 mm. These eggs closely resemble those of the Australian Crane *Grus rubicunda*, but the latter are less elongated, thicker and rounder.

After writing this a ninth egg was laid on August 24 in the sleeping-house. The birds did not attempt to break these eggs and two days later the female began to incubate and set well, but the eggs were unfertile; the male never assisted and showed no desire to do so.

FURTHER RECORDS OF ANTHRIBIDAE FROM FRENCH INDO-CHINA, WITH THE ADDITION OF THE DESCRIPTIONS OF TWO NEW SPECIES FROM OTHER COUNTRIES

By DR. KARL JORDAN

THE list of Anthribidae from Indochina which I published in *Opusc. Inst. Scient. Indochina*, i. 1923, pp. 3-41, enumerates 86 species, which were mostly collected by Monsieur R. Vitalis de Salvaza. That paper, the proofs of which unfortunately were not submitted to me for correction, contains many misprints, for which I should like to apologize.

Through the kind service of Monsieur J. Clermont, of Paris, who has become the successor of Monsieur H. Donckier, I have lately received the *Anthribidae* collected in Tonkin by the R. Père de Cooman, and additional material collected by Monsieur Jeanvoine. Among these specimens I found a surprisingly large number of species which are either new or not yet recorded from Tonkin; these form the chief subject of the present article. I am very grateful to Father de Cooman for having devoted some of his time to the procuring of *Anthribidae* and congratulate him on the great success with which his energies in this direction have been crowned. I trust that further collections will make the list of Indochinese *Anthribidae* still more complete. Besides the species recorded in the present paper, I have about 10 others mostly represented by single specimens not well enough preserved for description; these must wait till further material comes to hand.

The 36 species and subspecies marked with an asterisk are new for Indochina.

*1. *Mecocerus principalis* sp. nov.

♂♀. Prothorace tuberculo laterali acuto armato valde distinctus.

Long. 18 mm., lat. 8-8.5 mm.

Tonkin: Chapa, vi. 1918 (Jeanvoine), one pair.

A robust species. Dark olive, with definite ochraceous and velvety black markings nearly as in *M. asmenus* Jord. (1913): anteriorly on each side of frons a velvety black spot bounded on outer side along eye by a narrow irregular line which extends forwards to the apex of the rostrum as a broader stripe; lower border of eye and an elongate spot behind eye ochraceous; on each side of disc of pronotum a broadish irregular black stripe from near apex to base, bounded on dorsal side by a thin irregular ochraceous line and on outer side by a short streak from carina to middle, within the black stripe a small ochraceous dot, farther towards side from base to near apex a narrow ochraceous line twice interrupted, above lateral tubercle a spot of the same colour; alternate interspaces of elytra, beginning with the sutural interspace, spotted with black and ochraceous, on subbasal swelling and at sides before and behind middle a larger black spot, subapical dots of interspaces 3 and 9 also somewhat enlarged, in middle of each elytrum a large irregularly rounded black spot between second and sixth interspaces; underside spotted with ochraceous on side, a spot of the same colour on mesosternal intercoxal process, on coxae, and in middle of

first abdominal sternite, two spots each on femora and tibiae; upperside of tarsal segment 1, except base and apex, and basal half of 4 greyish ochraceous.

Eyes farther apart than in *M. allectus* Pasc. (1860): at base of proboscis a very narrow median sulcus which extends a little on to the frons, sides of proboscis smooth in basal half. Antenna of ♂ a little surpassing the elytra, segment 1 not reaching to the eye. Dorsal carina of pronotum interrupted in middle and near side; the lateral carina ending with a high tubercle, which is somewhat curved backwards in ♂. On underside of prothorax no tubercle, but in both sexes a sharply marked straight transverse groove.

2. *Mecocerus asmenus hedybius* subsp. nov.

M. a. Jord. (nec id. 1913), in Vitalis, *Opusc. Inst. Scient. Indochine, Faune Entom.* i, p. 8, no. 9 (1923).

Differs from the two North Indian examples I have seen in the black discal spots of the pronotum not being bounded by orange on the outer side.

Type from Chapa (Jeanvoine).

3. *Mecocerus callosus* Jord. (1904).

M. mamillatus Jord. (err. cal.), l.c. p. 8, no. 10 (1923).

In addition to the specimens mentioned, i.e., we now have a small series of both sexes from Tonkin: Hoa Binh and Lactho (de Cooman); Than Mei, vi. 1917, and Lang Wak, ix. 1917 (Jeanvoine).

4. *Physopterus aspersus* Jord. (1923).

Tonkin: Hoa Binh (de Cooman), several specimens.—The ♂ is similar to the ♀, except that the antenna is a little longer.

5. *Acorynus salvazai* Jord. (1923).

Tonkin: Chapa, v. 1918 (Jeanvoine), 1 ♀.—Described from a ♂. In the ♀ the frons is not quite so broad as the interspace between the median and next carinae of the rostrum.

*6. *Acorynus confinis* sp. nov.

♂. Statura *A. salvazai* Jord. (1923); rostri carinae breviores; segmentum sum antennae septimo fere aequilongum; pygidium longitudine multo latius; tibiae antica et intermedia apice simplices.

Tonkin: Hoa Binh (de Cooman), 1 ♂.

On the elytra the ochraceous dorsal median spot smaller than in *A. salvazai* and the black subapical spot connected laterally with the postmedian one; otherwise the markings and colour almost the same. Frons about half as broad again as the first segment of the antenna; segment 8 one-third shorter than 7, being a little longer than 10. Dorsal carina of pronotum strongly and evenly concave in middle, much more so than towards the sides. Pygidium nearly one-third broader than long, in *A. salvazai* a little longer than broad. Apex of fore- and midtibiae neither dilated nor mucronate.

***7. *Acorynus anchis expansus* subsp. nov.**

♂. Elytrorum colore ochraceo multo magis extenso.

Tonkin : Tien Yen, viii. 1917 (Jeanvoine), 1 ♂.

Pronotum not depressed before middle. Elytra ochraceous, before apical declivity a black transverse band which is convex in front and concave behind on each elytrum, narrows laterally and does not quite reach the lateral edge ; between this band and the base a number of more or less confluent irregular short black streaks and transverse lines, a spot on shoulder and another on subbasal swelling larger, in centre of ochraceous apical declivity a small black mark on each elytrum.

***8. *Acorynus brevis* Jord. (1911).**

Tonkin : Hoa Binh (de Cooman), 1 ♀. — Described from a ♀ from " Malacca." The present specimen differs a little in the markings, particularly in the apex of the elytra being occupied by a white patch which is rounded anteriorly and in front of which there is a transverse curved row of small whitish dots.

***9. *Acorynus altilis* sp. nov.**

♀. Statura *A. brevis* Jord. (1911), sed elytris angustioribus. Niger, tomento luteo-griseo et olivaceo obtectus. Pronotum medio impunctatum. Elytra olivacea, luteo-griseo suffusa, macula nigra dorsali antemediana notata, area apicali communi antice rotundata luteo-grisea.

Long. 5.6 mm.

- Tonkin : Lactho (de Cooman), 1 ♀.

Frons and rostrum luteous grey, the former as broad as the interspace between the dorsal earinae of the proboscis ; these earinae short, the central one reaching to middle of rostrum, the lateral dorsal one slightly curved and extending beyond middle, eariniform edge of antennal groove directed towards side of pronotum, not being strongly curved. Antenna blackish throughout, rufescent at the joints, 10 less than one-half longer than broad. Eye very little longer than broad. Pronotum (pubescence not well preserved) with three yellowish spots at the base and several others apically and laterally, sides slightly punctate and rugate, the punctures larger on the prosternum ; dorsal carina almost straight, very feebly angulate in middle, flexed forward at sides in an even curve. Elytra depressed along suture, subbasal swelling distinct, pubescence olive suffused with luteous and variegated with minute, rather diffuse, luteous grey dots, a large spot of this colour behind black shoulder, in front of middle between interspaces 2 and 4 a velvety black spot about as broad as long, behind it the luteous pubescence somewhat condensed, on subbasal swelling and at margin behind shoulder as well as behind middle near margin a black spot, luteous grey anal area well defined, bounded by a diffuse black band, on the slightly elevate interspace 3 a small blackish subapical spot. Pygidium luteous grey. Under-side and legs grey, side of metasternum sparsely punctate, base and apex of tibiae, apex of first tarsal segment and the whole segments 2 to 4 blackish brown.

***10. *Acorynus coomani* sp. nov.**

♀. Rufo-brunneus, supra luteo-griseo pubescens, subtus griseus. Carinae rostri obsolescentes. Oculi circulares. Pronotum conicum, multo latius quam longius, punctatum, nigro-maculatum. Elytra breviter convexa, nigro notata, macula magna laterali nigra.

Long. 4 mm., lat. 2.3 mm.

Tonkin : Hoa Binh (de Cooman), 1 ♀.

Distantly related to *A. aspersus* Jord. (1925) from Assam.

Proboscis one-fourth longer than apically broad, narrowest in middle, rather strongly widened at apex, flattened, with slight indications of three carinae proximally to middle. Frons about one-fourth the width of the apex of the rostrum ; no groove below eye ; occiput brown. Segments 1 and 2 of antenna pale rufous, the others rufous brown, club short, but longer than in true *Tropideres*. a little looser, 10 a little longer than broad. Pronotum punctate, three-fourths broader than long, conical, an almost hexagonal diffuse luteous grey central area bounded by blackish diffuse confluent markings which converge towards occiput, a diffuse median stripe more densely pubescent luteous, at each side of this stripe in front of the carina a blackish dot, on the lateral area of the disc a longish spot before the carina and a smaller one farther forward also blackish ; dorsal carina somewhat convex from side to side, faintly concave in middle, curved forward at side in a semicircle. On elytra a shoulder-spot, a transverse line on subbasal swelling, a small angle-shaped spot before apical declivity on interspace 3, a longish sub-apical transverse spot which is dentate and irregular and reaches neither the suture nor the lateral margin, and a very large submedian patch black, this patch broadest at the lateral margin, irregularly rounded above, extending upwards to punctate line 2 and including some minute luteous grey dots towards the side. Pygidium semicircular, slightly brownish in centre. Pro- and metasternum punctate. Base and apex of tibiae and the entire segments 2 to 4 of tarsi more or less brown.

*11. *Acorynus manifestus* sp. nov.

♂. Brunneo-niger, griseo pubescens, pronoto et elytris olivaceo-brunneis ochraceo guttatis. Rostrum planatum, impressum, utrinque carinatum. Antennarum segmenta 3^{um}-11^{um} compressa linearia, 8^o albo tribus sequentibus paulo breviora. Pronotum impunctatum, carina in semicirculo antrorsum flexa. Elytra fascia postmediana nigra ad suturam interrupta sat diffusa notata. Tibiae et tarsorum segmentum basale griseum apice extremo nigro, tibia media fortiter mucronata.

Long. 7 mm.

Tonkin : Hoa Binh (de Cooman), 1 ♂.

Antenna reaching beyond middle of elytra, black, 3 to 7 sparsely pubescent grey, 8 white, basal segment pyriform, not quite reaching the eye, 2 a little longer than broad, 3 to 11 flattened, with dispersed hairs on underside, 3 one-third longer than 4, 4 to 8 nearly equal in lengths and widths, linear, 9-11 together about as long as 3, very little broader than 8, 9 triangular, less than twice as long as broad, 10 nearly square, 11 broadest at base, pointed at apex, a little longer than 9. Proboscis greyish white, nearly vertical, somewhat longer than broad, broadest at apex, dorsal surface shallowly depressed, slightly convex between the antennae, on each side of the depression a thin carina which extends from near the eye to above the antennal groove, not quite touching the cariniform edge of this groove, being here broken and continued to near apex, a thin median carina does not reach the apex of the rostrum, but is continued over the frons on to the occiput ; below eye a thin curved sulcus. Eye almost circular. Frons about one-third as wide as the base of the proboscis between the lateral carinae. Occiput

olive brown, this colour extending on to frons, eye slightly edged above with ochraceous. Pronotum with indications of shallow punctures, practically impunctate, without transverse discal groove, a little more than half as broad again as long, three antemedian spots in a transverse row, the middle one of which is elongate, an indistinct spot behind lateral one, a diffuse mark at apex of lateral carina and a spot before scutellum ochraceous. On each elytrum 14 ochraceous spots (the number probably variable), all small, 3 of them before and 3 behind the black postmedian band, 3 subbasal, a double one before subbasal swelling, 3 on apical area, and one at side behind posthumeral lateral spot; the black band reaches neither suture nor margin, about $\frac{3}{4}$ mm. broad in third interspace, narrowing laterally and becoming still more diffuse than it is dorsally. Pygidium olive-grey, rounded, broader than long.

Underside and legs ashy grey; a dot at apex of metepisternum ochraceous; a central patch on metasternum, continued on to midcoxae, covered with longish yellowish grey hair; setiferous hairs on ventral surface of foretarsal segment 1 longer than on the other tarsi.

In the absence of a ♀ it is not advisable to erect a new genus for this peculiar species.

*12. *Litocerus alternans* sp. nov.

♀. Statura *L. khusiani* Jord. (1903), rostro unicarinato et elytris nigro et luteo tessellatis distinctus.

Long. 9 mm.

Tonkin: Lactho (de Cooman), 1♀.

Proboscis densely rugate, with a very thin median carina which does not reach apex, no other carinae, no groove below eye. Frons a little broader than the first foretarsal segment. Antenna as long and slender as in *L. khusianus*, but 9 much longer than 11, which is a little longer than 10. Pronotum with dispersed shallow punctures in posterior half of disc and on sides, dorsal and lateral carinae nearly straight, angle strongly rounded off, a complete broadish median stripe, a small basal lateral spot and another small spot at apex of lateral carina ochraceous, at each side of median stripe a black subapical spot, rest of disc olive, indistinctly broken up into three spots by blackish interspaces. Elytra olive, with three rows of ochraceous spots separated by velvety black spots, the latter somewhat longer than the former, four being black and five ochraceous in third interspace, at side of first ochraceous spot of fourth interspace a black spot in second.

Underside pale ochraceous marked with black; a large submedian ring on tibiae creamy buff, as is also the first tarsal segment with the exception of apex and extreme base.

13. *Litocerus stricticus* Jord. (1904).

L. stricticus! Jord., in Vitalis. *Opusc.* i, p. 14, no. 21 (1923).

Tonkin: Hoa Binh (de Cooman), 1♀.—Described from a ♂. The species has a purplish sheen in certain aspects.

14. *Tropideres japonicus* Roel. (1879).

Tonkin: Hoa Binh (de Cooman), 1 ♂.—This is the second specimen recorded from Indochina.

*15. *Tropideres notabilis* sp. nov.

♀. Statura et colore *T. japonico* simillimus, antennarum elava laxa longiore atque elytro absque macula griseo-alba distinguendus.

Tonkin : Hoa Binh (de Cooman), 2 ♀♀.

Antenna longer than in *T. japonicus*, segment 8 about three times as long as broad, 10 one-third longer than broad. Eye nearly circular. Pronotum less uneven than in *T. japonicus* and less coarsely punctate, dorsal carina not curved back in centre. None of the markings of the elytra greyish white, all luteous.

16. *Tropideres securus* Boh. (1839).

Tonkin : Laetho and Hoa Binh (de Cooman), a series.—Common and widely distributed in Indo-Malayan countries ; but this is the first record of the species from Tonkin.

17. *Tropideres paviei* Lesne (1891).

Tonkin : Laetho and Hoa Binh (de Cooman), a series. Not recorded from Tonkin before. I now place this species in *Tropideres* instead of *Litocerus*.

18. *Tropideres calliergus* Jord. (1923).

Tonkin : Hoa Binh (de Cooman), a pair.—Described from a single ♀ from Tonkin. In the ♂ the eyes are contiguous and the foretibia bears a postmedian tubercle on the inner side.

*19. *Hucus limbatus* sp. nov.

♂. Niger, supra eervino pubescens, pronoto utrinque bivittato, elytris nigro limbatis dorso transversim nigro notatis, angulo carinae prothoracicalis acuto.

Long. 4.5 mm.

Tonkin : Hoa Binh (de Cooman), 1 ♂.

Upperside of rostrum sparsely pubescent, appearing black, sides and cheek white, this area sharply defined, being bounded by the dorso-lateral groove of the proboscis, five carinae, which do not enter upon the dilated apical area, median carina thin, extending on to frons, which is about as broad as the interspace between the median carina and the next. Antenna sparsely pubescent grey, first and second segments rufous, the others black, 3 one-fourth longer than 4, 4 to 7 nearly equal, 8 a little shorter, 9 to 11 together as long as 3, 9 not quite twice as long as broad, 10 nearly square, 11 conical, a little longer than 9. Pronotum granulose, each side with two complete narrow black vittae, parallel with lateral margin and placed a short distance from the lateral carina ; dorsal carina somewhat convex. Elytra flattened dorsally, sutural space impressed apically only, a lateral black stripe from base to near curve of margin, the wing-edge itself not covered by this stripe in basal half, two dots side by side on subbasal swelling, an anteriorly convex row of spots in middle, consisting on each elytrum of a large dot at suture and two small ones farther back at side, before apical declivity a row of four small dots (two on each elytrum), and on apical declivity one dot on each elytrum, all black. Pygidium semicircular.

Underside whitish grey, femora and tibiae rufous, tips of tibiae and the tarsi black, first segment of midtarsus nearly all grey, first of foretarsus with small grey spot.

***20. *Cedus diversus* Jord. (1911).**

Tonkin : Hoa Binh (de Cooman), 2 ♂♂.—New for Indochina.

***21. *Mecocerina coomani* sp. nov.**

♂♀. Color *M. rhanis* Jord. (1911), pronoto duabus vittis utraque e tribus maculis composita notato, segmento anali ventrali feminae fortiter sinuato.

Long. 2.8-7 mm.

Tonkin : Hoa Binh (de Cooman), a series.

Close to *M. rhanis*; pronotum rather more distinctly punctulate at sides, and the stripes of the elytra a little deeper. The three black spots on each side of the disc of the pronotum often merged together into a broadish stripe. The lateral posthumeral spot of the elytra excised in front, between it and the ante-apical transverse band two or three small spots, the antemedian spot in third interspace very much smaller than the one on subbasal swelling, the latter spot often enlarged sideways, the contour of the black band more irregular than in *M. rhanis*. In ♀ the pygidium broader than long and the anal sternite excised, this sinus round, the angles of the segment well projecting.

***Androceras* gen. nov.**

♂♀. Generi *Mucronianus* Jord. (1894) dicto similis; rostro utrinque sub oculum sulco brevi instructo, antenna maris compressa, segmento 8^o plus minus longitudine clavae, pronoti margine antico recto, elytrorum basi singulatim rotundata, pygidio utriusque sexus simplice, abdomine maris haud deplanato.

Genotypus : *A. khasianus* Jord. (1903), as *Mucronianus*.

The short longitudinal basal carinula of the pronotum more or less oblique, descending posteriorly, forming a more or less acute angle with the small adbasal transverse carinula.

The number of species allied to *Mucronianus* Jord. (1894) probably is large and will, possibly, require the erection of several additional genera. However, it appears to me advisable for the present to place the known species into three genera :

(a) *Mucronianus* Jord. (1894).—Basal margin of elytra straight. ♂-antenna normal, with a club of three segments; ♂-pygidium produced into a conical projection.

(b) *Androceras* gen. nov.—Basal margin of each elytrum rounded, ♂-antenna compressed, segment 8 about as long as 9 to 11 together, ♂-pygidium without projection.

(c) *Nessiolocus* Heller (1925).—Basal margin of each elytrum rounded, ♂-antenna and ♂-pygidium normal.

***22. *Androceras khasianus* Jord. (1903).**

Tonkin : Hoa Binh (de Cooman), 1 ♂, 6 ♀♀.—New for Indochina. Slightly variable in pattern. Pronotum punctate. Proboscis with a carina from near inner margin of eye obliquely apicad, this ridge forming the inner boundary of the dorsal groove, the second groove laterally at eye. Antenna of ♂ much broadened and flattened from third segment, the segments triangular, half as long again as broad, each nearly as long as and broader than 9 to 11 together, 9 a little longer than broad, 10 much broader than long, 11 triangular, pointed.

*23. *Androceras lepidus* Jord. (1911).

Tonkin: Hoa Binh and Laetho (de Cooman), a series.—New for Indochina. Pronotum punctate. Proboscis with oblique dorso-lateral carina. Antenna of ♂ very little flattened, about the same in width from the third segment to the apex, segment 8 linear like 3 to 7, as long as 9 to 11 together and the same in width, narrower than in ♀, 9 somewhat longer than 10, which is a little longer than broad, 11 as long as 9, triangular, pointed. Pygidium almost semicircular in ♂, shorter than in ♀. Longitudinal basal carinula of pronotum horizontal, less oblique than in *A. khasianus*. One of the ♂♂ only 3 mm. long (from anterior margin of pronotum in a straight line to apex of pygidium).

Originally described from Perak. We have the species also from Sumatra (J. B. Corporaal).

*24. *Androceras stratus* sp. nov.

♂. *A. gerrho* Jord. (1911) simillimus, sed antenna fortius dilatata, angulo carinae prothoracis magis acuto.

Long. 6.5 mm.

Tonkin: Hoa Binh (de Cooman), 1 ♂.

Larger than the only known specimen of *A. gerrhus* Jord. (1923, from the Khasia Hills, Assam), the black sutural patch of the elytra more regularly rounded. Segments 1 and 2 and bases of 3 to 9 of antenna rufous, 3 and following compressed, 3 to 8 elongate-triangular, 8 a little longer than 7 and as long as 9 to 11 together, a little over twice as long as broad, 9 and 10 transverse, 11 subconical, pointed, a little longer than broad. Angle of carina less than 90°, the longitudinal basal carinula behind it distinctly descending posteriorly. Rostrum without carinae, below eye a small groove. Pronotum granulose.

*25. *Androceras laticornis* sp. nov.

♂. Niger, supra olivaceo pubescens, capite eum rostro, angulo anteo prothoracis elytrorumque macula magna basali et altera apicali albo-griseis fulvo mixtis; subtus albo-griseis, tibiis apicibus atque tarsis nigris, his albo notatis. Rostrum utrinque fortiter bicarinatum. Antenna valde compressa, segmentis 3^{io}-8^o fere aequilongis, 8^o triangulari, 9^o longitudine parum latiore, 10^o transverso, 11^o latitudine brevior.

Long. 8 mm.

Tonkin: Chapa, vii. 1919 (Jeanvoine), 1 ♂.

Recalls *Anthrribus albinus* L. (1758) by its size and colouring. Proboscis rugate, longer than broad, uneven, depressed along middle and transversely at apex, angulate above antennal groove, a dorso-lateral curved carina from eye to beyond middle, concave on outside, where there is a groove along it, a smooth, flattened, curved, lateral carina from below eye to antennal groove. Frons about as broad as segment 4 of antenna, moderately concave longitudinally. Eye longer than broad. Segment 2 of antenna almost globular, 3 to 7 flattened, about twice as long as broad, not much widened towards apex, 8 regularly triangular, somewhat longer than broad and very little narrower than 9, which is also triangular, but broader than long, 10 twice and 11 less than twice as broad as long. Occiput black behind eye. Pronotum uneven, pitted with large shallow punctures, except centrally at apex, sides nearly straight from base to middle, dorsal carina straight, slightly curved back at side and then flexed forward, angle

rounded off, larger than 90° , the lateral carina being oblique and nearly straight, longitudinal basal carinula slightly descending posteriorly, forming a very acute angle with the lateral carina. Elytra cylindrical, a little depressed dorsally, subbasal swelling distinct, grey basal area posteriorly edged with black, bounded by the fourth line of punctures, reaching to one-third, posteriorly incised on suture and in third interspace, composed of more or less alternately grey and tawny interspaces and bearing two black spots on subbasal swelling, a grey patch mixed with tawny occupies more than the apical declivous area and is anteriorly regularly excised on suture, being rounded on each elytrum, within it a round black dot in third interspace. Pygidium regularly rounded, a little broader than long, grey mixed with tawny.

On basal abdominal segment a small central patch of erect blackish pubescence. Tibiae more or less mixed with tawny, on mid- and hindtibiae particularly on inner side, apex of tibiae black, this colour restricted to inner side on hindtibia.

***26. *Nessiiodocus egenus* sp. nov.**

♀. *A. lepido* Jord. (1911) colore similis, oculis subcontiguus, rostro absque carina dorso-laterali, pronoto granuloso, pygidio longiore.

Long. 3 mm.

Tonkin : Hoa Binh (de Cooman), 1 ♀.

In structure nearest to the species described as *Mueroniannus triodes* Jord. (1912) from Formosa, now provisionally placed into *Nessiiodocus*. Black, legs and base of antenna slightly rufescent; pubescence ashy grey. On disc of pronotum a large blackish area divided by a grey cross into four spots. On elytra the following black markings: a round spot each on subbasal swelling and shoulder, an elongate one in between the two, before middle a transverse band, widest on suture, between it and lateral margin a spot farther forward and another farther back, behind the band in front of apical declivity a round spot and another on apical declivity. Legs grey, apex of tarsi brownish.

Proboscis without distinct carinae, except a very short one near antennal groove; no sulcus below eye, which is almost circular. Frons slightly narrower than first segment of antenna. Antennal segments 3 to 7 gradually decreasing in lengths, 8 as long as 7, but more triangular, forming part of the club, which gradually and slightly increases in width, 9 less than twice as long as broad, 10 transverse, 11 ovate, as long as 9 and like this not constricted at base. Pygidium strongly narrowing, apex evenly rounded.

***27. *Nessiiodocus angulatus* sp. nov.**

♂♀. Colore praecedenti similis, pallide cinereus nigro maculatus, carina prothoracis flexuosa in medio acutum angulata.

Long. 3.5-4.6 mm.

Tonkin : Hoa Binh (de Cooman), 1 ♂, 2 ♀♀.

Legs and antenna rufous, club black. On disc of pronotum two small spots in ♂ and four large ones in ♀ black, on side another black spot. On elytra an elliptical spot on suture a very little before middle, one or two smaller spots placed farther laterad joined to the sutural spot, a black mark resembling a cross being formed, a spot each on subbasal swelling and shoulder, one before and another in middle of side, an irregular narrow band before apical declivity reaching

neither suture nor margin, and on each elytrum a small round subapical spot also black.

Proboscis as long as broad, flat, with a thin carina from eye to above edge of antennal scrobe, at side of this ridge a groove. Eyes slightly longer than broad, in ♂ almost contiguous, in ♀ about as far apart as segment 1 of antenna is broad. In ♂ segment 3 of antenna one-fourth longer than 4, 4 to 8 slightly decreasing in lengths, 8 a little thicker than 7, longer than 9, this triangular, somewhat longer than broad, 10 almost square, broader than long, 11 ovate-triangular, a little longer than 9; in ♀ the proportions about the same, but the antenna shorter and 11 not longer than 9.

Pronotum densely studded with shallow punctures: carina sharply angulate in centre, from this point towards side first convex and then concave, the lateral angle very broadly rounded, the lateral carina oblique and nearly straight, longitudinal basal carinula obliquely ascending posteriorly, forming a very acute angle with the dorsal carina. Elytra cylindrical, not depressed at suture, interspaces not raised. Pygidium of ♂ as long as broad, of ♀ shorter, rather strongly narrowing, apex evenly rounded.

Derisemias gen. nov.

♂♀. Generis *Tophoderes* Schoenh. (1839) dicti affinis. Brevis. Rostrum planum, crassum, porrectum, longitudine multo latius. Antennarum brevium fossa magna, triangularis. Oculi grosse granulosi, laterales, antice subtruncati. Prothorax antrorsum fortissime angustatus, in disco bituberculatus, angulo basali acuto, producto, carina dorsali ad latus convexa et basali, in medio antebasali, carina laterali a basi ad apicem continuata. Elytra brevia, pustulata, margine antico singulo rotundato. Pars antecoxalis prosterni brevissima, coxis bene separatis; processus intercoxalis mesosternalis latus, subdirectus, truncatus, angulis distinctis; metasternum inter coxas medias et posticas breve; tarsi breves. ♂: pygidium et segmentum ventrale anale truncata.

Genotypus: *D. picticollis* sp. nov.

The species here described bear all a peculiar mark of white lines in the anterior half of the pronotum, the lines forming a sort of low tent with three poles projecting from the top. As we have no ♂ of this new genus from Tonkin, we select as genotype a new species from Natal.

Derisemias picticollis sp. nov.

♂. Brunneo-niger, tomento olivaceo-cervino obtectus, luteo et griseo guttatus et pustulatus. Rostrum rugatum, longitudine haud duplo latius, carina mediana antice abbreviata instructum. Antenna rufa, clava brunnea, segmento ultimo apice pallido. Pronotum medio late depressum, utrinque fortiter elevatum. Scutellum elongatum album. Elytra lateribus leviter rotundata, basi depressa, gibbositate subbasali distincta bipenicillata, pustulis luteo-griseis magis minusve transversis, ante marginem apicalem pustula vel plica transversa pallidiore.

Long. 6.5 mm.

Natal: Merebank, Durban, xi.1904 (G. F. Leigh), 1 ♂.

Head, proboscis, and pronotum coarsely rugate longitudinally. Apex of rostrum truncate, with a shallow median sinus, median carina not extending on to frons and stopping abruptly between the antennae, in centre a minute white

dot, several others at side of rostrum and on head. Antennal scrobe large, triangular, interspace between it and eye about as broad as segment 2 of antenna. Eye longer than broad, its upper anterior angle a little farther forward than the lower angle. Antenna (σ) reaching to base of pronotum, segment 3 about as long as 2, 4 and following shorter. 6 = 7 = 8 a little longer than broad, 9 triangular, longer than 3, about half as long again as broad, 10 as long as broad, 11 subelliptical, shorter and narrower than 9, a little longer than 10.

Pronotum nearly one-half broader than long, centrally broadly depressed from base to beyond middle, the depression flanked by a large swelling which bears a tuft, in front of the two tufts a transverse line, from each end of which a similar line runs obliquely forward to the other side of the disc without reaching apical margin, a median line from occiput to beyond transverse line, all four lines white and sharply marked, the posterior half of each oblique line curved and forming with the transverse line a transverse half-moon; in addition, on each side of the pronotum a small white dot; dorsal carina broadly incurved medianly, then convex, angle very sharp.

Elytra half as long again as broad, subbasal callosity high, the dorsal surface of the elytra slanting from this swelling to near apex, sutural interspace tessellated with oblique brown spots which are directed forward-sideward, between subbasal swelling and declivous apex there are obliquely transverse short folds and pustules, three dorsal rows of which are very distinct in certain lights, in apical half the pustules higher, the middle one on apical declivity the highest, close before apical margin a pale luteous elevated triangle. Pygidium much broader than long, truncate, with the angles rounded, the centre black.

Underside coarsely punctate, metasternite and abdomen mottled with grey; abdomen (σ) flattened in middle, last segment truncate and bearing two grooves filled with grey pubescence, apex swollen outside these grooves. Tibiae with grey antemedian ring, a subapical ring on foretibia and the apex of mid- and hindtibiae as well as nearly the whole tarsi likewise grey.

***28. *Derisemias ornatus* sp. nov.**

♀. Brunneus et rufus, elytrorum dorso, sternis atque pedibus ochreis, tibiis annulatis. Rostrum longitudine duplo latius, eum capite et pronoto longitudinaliter rugatum. Prothorax longitudine plus duplo latior, dorso ante carinam paululo planatus, haud impressus, duobus tuberculis parvis instructus, lateribus ante angulum basalem emarginatis et ante hunc sinum subangulatis; carina dorsali fere recta, latus versus gradatim convexa. Elytra latitudine vix duplo longiora, convexa, pustulosa, tribus pustulis dorsalibus aurantiacis, subbasali magna.

Long. 5 mm.

Tonkin: Laetho (de Cooman), 1 ♀.

Head, pronotum, basal margin, apex and sides of elytra, abdomen, tarsi and two rings on tibiae blackish brown, femora rufous brown, rest of body and elytra more or less bright ochre.

At base of proboscis a white linear dot, apical margin slightly sinuate in middle, median carina vestigial. Eye longer than broad, obliquely truncate, interspace between it and antennal groove narrower than the second antennal segment. Antenna rufous, proportions as in genotype, but the club narrower, 11 as long as 9. On occiput a white median lineola, before which there is an

orange spot. Pronotum sparsely shaded with orange, the two tufts brown, towards side an antemedian white dot, a thin white median line from apex to scutellum, interrupted behind middle, crossed before middle by a transverse line and two oblique lines (none of which are very distinct in the only specimen we have). Suture of elytra with about ten black dots from before middle to apex, and before apex a whitish linear spot, subbasal swelling well raised, covered with longish orange pubescence, at the outer side of this tuft a patch of equally long pubescence partly mixed with grey, in middle of third interspace a rounded orange pustule, another behind middle, on the outside of these pustules, but a little more forward, another pair, less bright in colour, smaller pustules also in the blackish central and apical areas. Pygidium coarsely and densely punctate, broader than long, truncate-rotundate. Underside coarsely punctate.

***Derisemias decoratus* sp. nov.**

♀. Speciei praecedenti similis; rostro parum longiore, margine apicali leviter bisinuato medio inerassato-rotundato; tuberculis pronoti penicillatis multo altioribus; elytrorum pustula subbasali multo majore, caeteris pustulis minutis.

Philippines: N. Luzon (J. Whitehead), 1 ♀.

A little smaller than the above Tonkinese species and slightly more rounded.

Elytra orange-buff at base from side to side, this bright-coloured area extended to beyond middle, but of a buffish grey colour from the subbasal tubercles backwards and gradually narrowed; these tubercles and their tufts very large as compared with the previous species and dark ferruginous, there are no other tufts on the elytra, and the pustules are very small. Pubescence of underside and legs yellowish grey, with an orange tint here and there. The mark of white lines on anterior half of pronotum very definite, consisting of bow and string, from the centre of the bow three lines project forward.

***29. *Sintor biplaga* Jord. (1903).**

Tonkin: Laetho (de Cooman), 1 ♂.—Described from a ♀ from Assam; the present ♂ is the second specimen known to me.

30. *Cleorisintor glaucus* Jord. (1923).

Tonkin: Hoa Binh and Laetho (de Cooman), 2 ♂♂.—Described from a single ♀ from Hoa Binh. The ♂ agrees with the ♀, except that there is in the ♂ a conspicuous median ridge on segments 1 to 4 of the abdomen.

***31. *Plintheria sparsus* Boh. (1832).**

Tonkin: Hoa Binh and Laetho (de Cooman).—Possibly a subspecies; the grey markings almost evenly distributed over the elytra, occupying much more space than the brown markings, the grey pubescence forming grey lines of various lengths.

32. *Straboscopus sanguinipes fulvaster* Jord. (1923).

Tonkin: Laetho (de Cooman), 1 ♂.

***33. *Apatenia dimissa* sp. nov.**

♀. Speciei *A. viduata* Pasc. (1860) dictae subsimilis, rostro atque antennarum clava multo brevioribus, capite inter oculos non-carinato, elytris sine macula magna nigra mediana.

Long. 8 mm.

Tonkin : Hoa Binh, type, and Laetho (de Cooman), 3 ♀♀.

Nearest to *A. variegata* Jord. (1895), from the Philippines and Moluccas.

Black, pubescent olive-grey, dotted with black and ochraceous. Proboscis in front of eyes half as broad again as long, coarsely punctate-rugate, as is also the head, median carina obsolete in apical third, apical margin thrice feebly incurved, not subangulate in centre, on underside the lateral margins of the raised median area of the rostrum cariniform. Frons a little more than one-fourth the width of the proboscis, without median carina, concave between the strongly converging eyes except close to rostrum. Antenna dark brown, segment 3 longer than 4, segments of club almost equal in lengths, very little longer than broad, 11 elliptical, 9 and 10 rounded at sides and truncate at apex.

Pronotum coarsely punctate, with depressions, dorsal carina faintly convex, lateral angle obtuse and rounded off, lateral carina less curved than in *A. viduata*, longitudinal basal carinula horizontal, forming an acute angle with the lateral carina, before scutellum a creamy spot, in front of which there is a smaller ochraceous one, at sides two ochraceous spots, of which one is placed at the apex of the lateral carina and extends on to the underside, some black markings on disc and behind carina, the ochraceous spots surrounded with black. Alternate interspaces of elytra tessellated with russet and black, the black spots somewhat convex. Underside grey, coarsely punctate, also the abdomen, but the punctures less numerous on side of segments 1 to 3, segment 2 medianly at apex rather strongly convex. Tibiae with two grey spots on upperside and extendedly grey on underside; tarsal segments grey at base and apex, 4 rufous, almost entirely covered with grey pubescence.

***34. *Ulorhinus germanus* sp. nov.**

♀. *U. bilineato* Germ. (1818) persimilis, rostro absque carina mediana, pronoto minus grosse punctato, angulo carinae minus rotundato.

Tonkin : Hoa Binh (de Cooman), 1 ♀.

Size and markings as in *U. bilineatus* Germ. (1818), darker, the light-coloured markings more conspicuous. Proboscis somewhat concave in middle of base, without carina. Club of antenna distinctly broader than in *U. bilineatus*. Pronotum less convex and less coarsely punctate, the lateral carina oblique and nearly straight, as in *U. bilineatus*, but the angle less strongly rounded, dorsal carina very feebly convex.

***35. *Hypseus eclipsis* sp. nov.**

♂. Rufo-brunneus, griseo pubescens, supra luteo-griseo guttulatus, elytris macula magna communi elliptica antemediana nigro-velutina griseo cineta ornatis.

Long. 4 mm.

Tonkin : Than Moi, iii. 1918 (Jeanvoine), 1 ♂.

In colour similar to *Phaulimia schavmi* Pasc. (1871), but the basal angle of the pronotum quite acute. Proboscis twice as broad as long, slightly concave

in middle of base, without distinct carina, apical margin a little elevate in centre. Head and proboscis coarsely rugate. Eyes approximated, the frons being about as broad as the foretibia. Pronotum very densely punctate-reticulate, evenly convex, before scutellum a grey spot which extends beyond carina as a thin short yellowish line, a small subapical median dot and some lateral ones also yellowish, dorsal carina somewhat convex, lateral angle smaller than 90° , basal longitudinal carinula oblique, descending to the sharp basal angle of pronotum. Elytra coarsely punctate-striate, the black ellipse bounded by the fourth row of punctures and extended from basal fourth to a little behind middle, being longer than its distance from basal margin, alternate interspaces inconspicuously dotted with grey and brown. Pygidium longer than broad, rounded at apex. Prosternum coarsely punctate.

*36. *Phaulimia tonsor* sp. nov.

♂. Nigro-brunnea, griseo pubescens, pronoto area mediana nigro-brunnea a basi ad apicem extensa atque linea tenui incompleta grisea notata, clytris nigro-brunneo guttatis, area mediana dorso-laterali diffusa nigro-brunnea. Rostrum longitudine plus duplo latius, medio subearinatum, margine apicali medio levissime sinuato. Antennae rufescentes, clava pallidior. Oculi laterales dorsales. Frons latissima. Prothorax conicus, ab angulo rotundato carinae gradatim angustior, dorso aequaliter convexus, carina dorsali leviter undulata, in semicirculo antrorsum flexa. ♂: pygidium directum; segmentum anale ventrale carinatum penicillo truncato fulvo instructum.

Long. 4.8 mm.

Tonkin: Hoa Binh (de Cooman), 1 ♂.

Differs from true *Phaulimia* Pase. (1859) in the tarsi being shorter and in the prothoracical carina being curved forward at sides in a semicircle.

The brown median area of the pronotum is trapeziform, its sides being slanting and nearly straight; it occupies more than one-third of the surface of the pronotum and is continued forward to near the apex of the proboscis. Elytra dotted with grey and brown, the spots irregular, somewhat diffuse and several of them confluent, a fairly large median area which reaches neither suture nor margin almost devoid of grey pubescence. Pygidium, legs and underside grey, unspotted, apart from a brown shadow on metepisternum. Proboscis and head rugate-punctate, a slightly raised smooth median space in apical half. Frons more than half as broad as the rostrum, practically in a plane with it; occiput and frons very feebly convex in lateral aspect. Eye one-fourth longer than broad. Antenna brownish rufous, club paler, segment 3 a little longer than 2, 3 to 8 gradually decreasing, 8 little longer than broad, 9 triangular, somewhat longer than broad, 10 broader than long, its sides rounded, 11 ovate-elliptical.

Prothorax widest near base at the bent of the dorsal carina, gradually narrowing from this point, one-half broader than long, coriaceous; dorsal carina broadly but feebly concave in middle, convex halfway to side, then concave and gradually curved forward, longitudinal basal carinula horizontal, forming a very acute angle with the lateral carina. Elytra widest near base, slightly depressed at base, almost evenly convex apart from the sutural area, which is somewhat flattened. Pygidium semicircular, convex at base and then inclining forward.

Prosternum a little longer in front of coxa than the forecoxa is broad. Legs shorter and stouter than is usual in this genus, tarsal segment 2 broader than long.

Anal sternite of ♂ peculiar: a median carina bears a truncate tuft of hairs which recalls a shaving brush, the tuft yellowish grey at sides and tawny brown on the end-surface (changing in depth of tint according to light), apical margin of anal sternite slanting dorsad on each side and forming a sharply marked angle in centre.

*37. *Zygaenodes leucopis* sp. nov.

♀. Statura *Z. vigenis*, sed oculis sessilibus, vultu albo, pronoto gutta centrali nigra notato, clytrorum tuberculo subbasali multo minus elevato distinguendus.

Long. 5 mm.

Tonkin: Hoa Binh (de Cooman), 1 ♀.

In general appearance similar to *Z. vigenis* Jord. (1925), from Sumatra.

Dark brown, rufescent in places, upperside pubescent ochraceous buff, mixed with grey and dotted with black. Proboscis and frons white; the former one-half broader at base below eye than at apex, and practically as long as the apex is broad (base 30, apex 20, length 21), centre impressed below middle, median sinus of apical margin shallow, projection at antennal groove obtuse, short. Eye not stalked in frontal aspect, but placed on an elevation posteriorly, outline straightened on side towards frons. Occiput nearly horizontal, frons with rostrum vertical, but the angle between frons and occiput rounded off, without tubercle. Antenna rufous at base, segment 3 as long as 4 and 5 together, 8 a little shorter than 7, but broader and more hairy, club slightly broader than in *Z. vigenis* Jord. (1925), proportions of club 9:6:9, breadth 5.

Pronotum slightly uneven, there being a transverse depression behind the apical margin, a whitish median stripe interrupted by a triangular black central spot, on side of disc some indefinite dark brown spots, behind carina at each side of whitish median line a brown spot; carina broadly and moderately concave in middle, more strongly convex towards sides, placed medianly at three-tenths of the length of the pronotum. Scutellum white. Elytra very little longer than broad (10:9), basal area and interspaces 3 and 5 more ochraceous buff than the rest, suture and alternate interspaces dotted with black, the spots particularly conspicuous in interspaces 3 and 5, subbasal swelling not prominent, forming a very low ridge which bears a black spot in front. Pygidium one-fifth longer than broad, gradually angustate-rotundate.

Underside grey, slightly mottled with brown on the sides; tips of tibiae brown.

*38. *Zygaenodes antiallus* Jord. (1911).

Tonkin: Hoa Binh (de Cooman), 2 ♀♀.—The two specimens are more strongly variegated than the unique type-specimen from Assam.—No species of *Zygaenodes* has previously been recorded from Indochina.

*39. *Zygaenodes coomani* sp. nov.

♀. Rostro parum porrecto, occipite eum fronte gradatim convexo, oculis sessilibus, carina prothoracicali dorsali fere recta.

Long. 3.7 mm.

Tonkin: Hoa Binh (de Cooman), 1 ♀, type; another, smaller, ♀ from Lactho (de Cooman).

Occiput, frons, and base of rostrum almost evenly convex, which is best seen in lateral aspect; apical half of rostrum impressed and flattened, truncate, not

much narrowed, upper edge of antennal serobe widened into a tooth as usual. Face luteous grey, variegated with white, on head a white median line, which is continued across pronotum. Eye moderately convex, emarginate anteriorly.

Pronotum densely reticulate-punctate, convex behind, depressed before middle, carina nearly straight, slightly convex towards sides, before and behind carina two black spots on each side, the inner anterior one the largest and oblique, farther forward on each side a small black dot at white median line, two others towards side and two indistinct ones at apex, rest of pronotum like elytra clay-colour shaded with grey. Scutellum white. Elytra convex, almost gradually rounded-slanting from subbasal swelling, somewhat depressed in posterior half at suture, on subbasal swelling a black line ending at a white dot, farther back in third interspace a black spot followed by a long white line, both together forming a low ridge, suture and interspaces 5, 7, and 9 dotted with black and grey. Legs rufous, tips of tibiae black, first tarsal segment much longer than the other three together.

*40. *Zygaenodes clivinus* sp. nov.

♀. Niger, pube ochracea tectus, rostro pallidior, sparsim nigro guttatus, elytrorum sutura tessellata, antennis pedibusque fuscis, his nigro annulatis. Rostrum cum fronte directum, latitudine baseos parum brevius, apicem versus angustius, margine apicali leviter trisinuato. Oculi sessiles. Caput inter oculos tuberculo bifido supra eum occipite brunneo instructum. Pronotum inaequale, trituberculatum. Elytra subplanata, apice truncato-rotundata, tribus tuberculis notata: uno subbasali, altero mediano, tertio magno antepicali.

Long. 6 mm.

Tonkin: 1 ♀ received from M. E. le Mout, without special locality.

Pubescence dull ochraceous, dense, on pronotum indications of black and dark brown dots, suture of elytra conspicuously and lateral interspaces less distinctly tessellated with blackish brown, base of pygidium black, this colour extending distad in centre, a spot on metepisternum, a thin lateral line on abdomen, a spot on femora and three on tibiae (at base, in middle, and at apex), and the tip of first tarsal segment blackish brown.

Rostrum creamy buff, a transverse band between antennae extending upwards in centre dull ochraceous, apical half of rostrum flattened. In centre of angle between occiput and frons a double tubercle which is blackish above; between it and eye the head concave. Eye posteriorly on a low elevation, but not stalked. Anterior margin of pronotum raised into two tubercles, one at each side of middle, the two tubercles being wider apart than the tips of the double tubercle of the head: behind them in centre of pronotum a third tubercle, before and behind which the pronotum is depressed; dorsal carina concave, angulate sublaterally. Elytra oblong, one-fifth longer than broad, sides nearly parallel, apex subtruncate in dorsal aspect, dorsum flattened, with three prominent tubercles in a longitudinal row, the third in front of apical declivity very large and directed backwards. Metasternum strongly convex between mid- and hind-coxae, flat in centre.

*41. *Rhaphitropis elusus* sp. nov.

♂♀. Niger, supra pube grisea paulo sulfureo tincta obtectus, nigro marmoratus vel maculatus, antennis pedibusque rufis, pronoto confertissime ruguloso-granuloso, elytris basi truncatis.

Long. 3-4 mm.

Tonkin : Hoa Binh (de Cooman), 1 ♂, 2 ♀♀.

Near *Rh. oxyacanthae* Bris. (1863). The grey pubescence of the upperside with a sulphur yellow tint. Head and proboscis uniformly grey ; pronotum with a fairly large black spot in front of the carina at each side of the middle, and some less distinct ones on the sides of the disc and behind the carina ; elytra irregularly marmorated with black, in one specimen the black colouring reduced to more or less isolated small spots. Rostrum twice as broad as long. Frons half the width of the rostrum. Eye longer than broad, its outline straightened beneath. Segment 3 of antenna of ♂ one-half longer than 4, this a little longer than 5, 6 to 8 almost alike in lengths, each very little shorter than 5, club very slender, scarcely broader than 8, loose, 9 somewhat shorter than 8, a little longer than 10, both 9 and 10 slightly conical, 11 irregularly elongate-ovate, nearly as long as 9 ; in ♀ the antenna shorter, proportions as in ♂, but 8 shorter and the club much broader and more compact.

Pronotum in shape and structure nearly as in *Rh. oxyacanthae* Bris. (1863), but less convex, the carina more broadly concave in middle. Scutellum transverse, semicircular. Elytra truncate at base as in *Rh. oxyacanthae*, also otherwise similar in shape and structure. Pygidium as long as broad.

*42. **Rhaphitropis vittatus** Jord. (1925).

Tonkin : Hoa Binh (de Cooman), 1 ♂.—Originally described from Perak.

*43. **Nerthomma aplota** Jord. (1912).

Tonkin : Lactho (de Cooman), 1 ♂.—Only known from Formosa.

44. **Rawasia annulipes** Jord. (1895).

Tonkin : Lactho (de Cooman), 1 ♂.

45. **Basitropis hamata** Jord. (1903).

Tonkin : Hoa Binh and Lactho (de Cooman), 1 ♂, 1 ♀.

46. **Basitropis rotundata** Jord. (1903).

Tonkin : Hoa Binh (de Cooman), 1 ♂.

*47. **Autotropis modesta conspersa** subsp. nov.

♂♀. The black colouring of the pronotum more restricted, the basal area being more or less extended clay-colour ; on the elytra the black subbasal mark longer and the dark lateral area more or less dotted with clay-colour.

Tonkin : Hoa Binh (de Cooman), 2 ♂♂, 1 ♀.

*48. **Phloeobius lepticerus** Jord. (1911).

Tonkin : Chapa, vi.1918, vii.1919 (Jeanvoine), 2 ♂♂, 1 ♀.—So far known only from Java.

The species is easily recognised by the deep incision in the side of the pronotum in front of the lateral carina.

49. *Phloeobius pilipes* Jord. (1895).

Tonkin : Hoa Binh and Laetho (de Cooman), 1 ♂, 1 ♀.

*50. *Misthosima virilis* sp.nov.

♂. Brunneo-rufa, elongata, cinereo pubescens, antennis pedibusque rufis, tibiis apice brunneis. Oculus rotundus emarginatus. Caput cum rostro rugulosum. Antenna longa, sed corpore multo brevior, parum compressa, segmento 3^{io} sequentibus singulis longiore, 9^o longitudine tertii sed multo latiore, ad basin et apicem angustato. Pronotum confertissime reticulatum punctatum, area mediana magna brunnea sinuata irregulari, angulo carinae recto apice rotundato, lateribus ante hume angulum paululo sinuatis, carina laterali a latere visa recta. Elytra fortiter punctato-striata, interspatiis granulosis, convexis, brunneo variegata, sutura magis minusve brunnea. Pygidium griseum latitudine longius, gradatim angustatum, apice truncato-sinuatum, angulis rotundatis. Segmentum anale ventrale (♂) medio impressum, bicarinatum, apice sinuatum. Tibia antica (♂) intus planata, villosa, margine apicali parum rotundato-dilatato.

Long. 3 mm.

Tonkin : Hoa Binh (de Cooman), 1 ♂.

This species connects to some extent *Misthosima* Pasc. (1859) with *Araecerus* Schoenh. (1826), the eye being sinuate as in *Araecerus*, and the angle of the pronotal carina 90°, with only the extreme tip rounded off, whereas in *Misthosima* the angle is obtuse and strongly rounded. The pubescence of the specimen is not well preserved; the elytra are variegated with brown, but the exact size of the spots and patches cannot well be made out.

*51. *Araecerus crassicornis* F. (1801).

Tonkin : Laetho (de Cooman), 1 ♀.

ANTHRIBIDAE FROM THE MALAY PENINSULA

By DR. KARL JORDAN

THE specimens which form the subject of this paper were submitted to me for identification by Mr. H. M. Pendlebury, of the Federated Malay States Museum at Selangor, and have been returned to that institute with the exception of the types of the new forms and some duplicate specimens. As a large number of species are already known from the Malay Peninsula, particularly from Perak, I was surprised to find some large and conspicuous new forms in the collection. The material collected by Mr. Pendlebury is very carefully labelled, and, since we know so very little about the time of appearance, altitude, etc., of exotic *Anthribidae*, the data given on the labels are well worth publishing. Besides the species mentioned in this paper there are a few others in the collection which it is advisable to omit, as the identifications are not beyond doubt or too difficult to attempt with single specimens of obscure species.

1. *Eugigas goliathus* Thoms. (1857).

Perak: Batang Pedang, 1,800 ft., vi. 1923 (H. M. Pendlebury), 1 ♀.—
We have this species from Java, Nias, Sumatra, and Borneo.

2. *Meganthribus atopus stellatus* subsp. nov.

♀. Niger, supra et infra manifestis guttis albis notatus.

Long. 2.5 mm. (cap. excl.).

Selangor: Gombak valley, viii. 1922 (H.P.M.), 1 ♀, type.

Black, covered with a very short olivaceous pubescence, pronotum with shallow punctures at the sides of which there is a small granule. The white spots correspond to those of *M. atopus atopus* Jord. (1913) from Menado. On pronotum two at apex, an elongate one in middle, two on each side and a minute one on each side a little before the central spot, a white basal marginal border broken up into four transverse spots; scutellum also white; on elytra a sutural spot at scutellum, sutural and alternate interspaces with black and white spots, the black spots inconspicuous; on underside an elongate spot anteriorly above forecoxa and three small spots at carina, on mesosternum a lateral spot on neck of segment and a border along hindside of mesepimerum, two spots on metasternum and a dash on metepisternum, intercoxal process of metasternum and partially also all coxae white; on abdomen a limbal and a submedian row on segments 1 to 4. Indications of other spots here and there above and below. Antenna, tibiae, and tarsi black. Pygidium a little shorter than basally broad.

In a second specimen (♀), from Perak, Taiping, the pronotum has no punctures, only small granules, the pygidium is as long as broad, and the tarsal segments 1 and 2 are white proximally, in hindtarsus the first segment to near apex.

3. *Meganthribus nubilus* Jord. (1898).

Selangor, vii. 1914, viii. 1915, 2 ♀♀.—Peninsular Siam: Nakon Sri Tamarat, Khao Ram, 750 ft., ii. 1922 (H. M. Pendlebury), 1 ♂.

4. *Mecotropis marmoreus* Jord. (1895).

Selangor, vii.1914, 1 ♀.—Peninsular Siam: Nakon Sri Tamarat, Khao Luang, 2,000 ft., iii.iv.1922 (H.M.P.), 3 ♂♂, 2 ♀♀.—Known to me also from Perak, Sumatra and Borneo.

5. *Mecotropis pardalis* Jord. (1913).

Pahang: Lubok Tamang, 3,500 ft., vi.1923 (H.M.P.), 1 ♀.—Described from a single ♂ labelled Tondano, Minahassa, 7-9. 1899 (collector C), from coll. van de Poll. I do not find any difference between the Pahang ♀ and this ♂, apart from sexual distinctions.

6. *Mecocerus pendleburyi* sp. nov.

♀. Niger, sparsim griseo-olivaceo tomentosus, manifestissime albo guttatus, fronte capitis carinata.

Long. (cap. excl.) 15-17 mm.

Selangor: The Gap, 2,700 ft., i.1915, 2 ♀♀, type.—Pahang: Lubok Tamang, 3,500 ft., vi.1923 (H.M.P.), 1 ♀; Sungai Renglet, iii.1925 (H.M.P.), 1 ♀.

The species bears a very close resemblance to *Meganthribus atopus stellatus* subsp. nov., the white spots standing out very conspicuously on the dark ground. The olivaceous pubescence lost in one of the specimens. The number of the white spots fairly constant: on pronotum one in middle and a longitudinal row of three towards side, sometimes an additional basal spot at each side of middle; on elytra those in third interspace elongate, three to five in fifth, some minute ones in seventh, and three or four along margin, one on suture at base. On underside three spots laterally on prosternum and one between coxae; on mesosternum a spot on central process, another each side anteriorly on neck and an elongate bipartite one on epimerum; on metasternum a central spot and two or three on side, of which one on epimerum; abdominal segments 1-4 with a lateral spot and a transverse apical median spot more or less divided. Femora with white subapical spot. Segment 7 of antenna white at apex.

This species is a mimetic development of *M. assimilis* Jord. (1895), and comes nearest in appearance to *M. assimilis lituratus* Jord. (1913) from Tondano, N. Celebes, but is much larger and has entirely black tibiae and tarsi.

7. *Mecocerus allectus allectus* Pasc. (1860).

Peninsular Siam: Nakon Sri Tamarat, Khao Ram, 750-1,200 ft., iii. 1922 (H.M.P.), 1 ♀.

8. *Mecocerus gazella guttatus* Jord. (1895).

A series from Selangor, Perak, and Peninsular Siam; evidently a common insect.

9. *Mecocerus brevipennis* Jord. (1895).

Originally described from Borneo; occurs also on the Malay Peninsula and Sumatra.

10. *Physopterus hedistus* sp. nov.

♂. Niger, tomento chocolantino obtectus, parum griseo variegatus, interspatiis alternis elytrorum inconspicue nigro et griseo tessellatis. Frons capitis carinata. Pronotum ante medium atque ante carinam paululo depressum, in medio leviter

bigibbosum. Elytra breviter oblonga, absque tuberculis et penicillis altis, guttis nigris autem paulum convexis.

Long. 8.6 mm.

Pahang : Fraser's Hill, 4,000 ft., ix.1923 (M. R. Henderson), 1 ♂.

Of nearly the same shape as *Ph. tuberculatus* Jord. (1894), from Ceylon, but the antenna and tarsi much slenderer, the median sulcus of the proboscis much broader, the pronotum and elytra without high tubercles, etc.

Antenna black, the apices of segments 3 to 7, the whole of 8 and the proximal half of 9 white, 3 a very little shorter than 4. Proboscis rather abruptly convex between the antenna, from this elevated portion a broadish groove extends obliquely apicad and laterad on each side. Carina of head sharp and rather high between the eyes.

Pronotum one-third broader than long ; antemedian transverse depression very distinct, behind it two transverse swellings, but neither tubercles nor tufts present.

Basal margin of elytra more strongly rounded than in *Ph. tuberculatus*. Tibiae with a broad basal and a narrower postmedian ring of chocolate and grey pubescence : tarsal segment 1 about as long as 4, basal two-thirds of 1, extreme base of 2 and middle of 4 white, 2 and 3 much narrower than in *Ph. tuberculatus* and 1 longer. Prosternum flattened in middle, the coxae more widely apart than is usual, the anterior intercoxal process obtuse, on a level with the posterior one, with which it is united.

11. *Acorynus rusticus* Pasc. (1859).

Peninsular Siam : Nakon Sri Tamarat, 2,000 ft., iii.1922 (H.M.P.), a pair.

12. *Acorynus frontalis* Jord. (1895).

Same locality, 300-750 ft., ii.1922 (H.M.P.). 1 ♂.—Perak : Batang Padang, ii.iii.1915, 1 ♂.—Selangor : Sungai Buloh, ix.1922 (H.M.P.), 1 ♀.

13. *Anthribus similis bacillosus* Jord. (1926).

Selangor : Sinling Bidai (C. B. Kloss), 1 ♀ ; Gombak Valley, x.1921 (H.M.P.), 1 ♀.

14. *Anthribus punctipennis* Jord. (1895).

Selangor : Gombak Valley, x.1921, and Peninsular Siam : Nakon Sri Tamarat, Khao Ram, 300-750 ft., ii.1922 (H.M.P.), 1 ♂, 1 ♀.

15. *Acorynus coenonus* Jord. (1911).

Perak : Batang Padang, 1800 and 2500 ft., viii.1922, vi.1923 (H.M.P.), and Selangor : Gombak Valley, x.1921 (H.M.P.), 4 ♂♂.

16. *Acorynus bicornis* Jord. (1826).

Perak : Batang Padang, 1800 ft., vi.1923 (H.M.P.), 1 ♀.

17. *Acorynus cludus* Jord. (1895).

Selangor : Kuala Lumpur, i.1922 (H.M.P.), 1 ♂.

18. *Acorynus bimaculatus* Kirsch (1875).

Selangor : Gombak Valley, x.1921 (H.M.P.), 1 ♂.

19. *Acorynus phelus* Jord. (1926).

Pahang : Lubok Tamang, 3,500 ft., vi.1923 (H.M.P.), a pair.—In the ♂ the midtibia bears a tooth at the apex, the pygidium is truncate, with the angles rounded, and the anal sternite broadly flattened in middle.

20. *Acorynus pictus* Pasc. (1860).

A common species, in the F.M.S. Museum from Selangor and Perak.

21. *Acorynus scobis* sp. nov.

♂♀. Speciminibus parvis *A. passerini* similis, carinis rostri multo minus manifestis, antennis brevioribus clava compacta, clytris luteo-griseis annulo parvo subbasali, fascia lata dentata mediana, area apicali anguloque humerali brunneis, tibia intermedia maris inermi.

Long. 2.3–3.2 mm.

Selangor : Kuala Lumpur, ix.1922, on bamboo hedge, and iii.1923 (H.M.P.), 2 ♂♂, 1 ♀.

Rufous brown, antenna and legs more or less pale rufous. Proboscis shorter than in *Acorynus passerinus* Pasc. (1859), the lateral carinae less straight and lower, apical margin slightly sinuate in middle. Frons as broad as first segment of antenna in ♀, narrower in ♂. Antenna of ♂ : 3 a little longer than 2, 4 to 8 decreasing in length, 8 less than twice as long as broad, much shorter than 9, club gradually widening to middle of 11, 9 conical, somewhat longer than broad, 10 broader than long, 11 longer than 9, narrowing to an obtuse point from middle ; in ♀ proportions the same. Pronotum as in *A. passerinus*, but the grey lateral markings smaller and the median markings united into a complete, broadish, median stripe. On elytra an anteriorly open ring, a spot on shoulder angle (in one specimen also an angle-shaped spot obliquely above shoulder), a broad median band, anteriorly tridentate and laterally accompanied by some streaks, and a large apical area enclosing some grey spots brown. Pygidium and anal sternite a little longer in ♂ than in ♀. First tarsal segment about as long as 2 to 4 together, not longer. Underside of body and the legs uniformly grey, sides of prothorax with a diffuse brown spot, grey pubescence more concentrated on sides of meso- and metasternum. Hypopygidium (♂) bisinuate, the three lobes short and rounded.

22. *Litocerus plagifer* Jord. (1897).

Perak : Batang Padang, 1,800 ft., vii.1923 (H.M.P.), 1 ♂.

23. *Litocerus miles* Jord. (1925).

Selangor : Bukit Kutu, 500–1000 ft., iv.1926 (H.M.P.), 1 ♀.

24. *Litocerus virgulatus* Jord. (1914).

Perak : Batang Padang, 2,500 ft., vi.1923 (H.M.P.), a pair.

25. *Litocerus infirmus* sp. nov.

♂♀. Similis *L. mileti* Jord. (1925), parvus, pallidus; pronoto griseo-luteo utrinque duabus vittis approximatis brunneis notato; clytris griseo-luteis area magna laterali in medio ad striam tertiam usque extensa brunnea.

Long. 4.5 mm.

(Kuching, Borneo, 1 ♂, type.) Peninsular Siam: Nakon Sri Tamarat, Khao Ram, 1,200 ft., ii.1922 (H.M.P.), 1 ♀.

Antenna of ♂ nearly as in *L. histrio* Gylh. (1833), broadened from segment 5, and these compressed segments nearly alike, 2 short, 3 slightly longer than 4; in ♀ 3 one-third longer than 4, 8 less than two-thirds 9, 9 to 11 decreasing in length. Of the two brown stripes on each side of the pronotum the inner one reaches from base to apex, the outer one is shortened anteriorly and here somewhat dilated sideways, the two stripes touch each other (or nearly) behind middle. The brown lateral area of the clytrum is widest at side, narrowing dorsad and reaching to the third interspace, there being a small dash between it and suture, at lateral margin the area extends along margin to shoulder and is posteriorly broadly connected with a transverse anteapical brown band; in front of this band a narrow zigzag band in type, whereas in ♀ the zigzag band is merged together with the subapical band, forming a large patch; in the brown lateral area some grey spots; near base in grey area a few brown markings, the most conspicuous ones being a dot on subbasal swelling and a line in fourth interspace.

Underside unspotted. Legs very pale rufous, incrassate portion of femora partly blackish.

26. *Tropideres paviei* Lesne (1891).

Pahang: Kuala Tahan, 300 ft., xi.1921 (H.M.P.), 1 ♀.

27. *Tropideres securus* Boh. (1839).

As before, 1 ♂; another from Kuala Lumpur.

28. *Cedus camelinus* Jord. (1915).

Pahang: Kuala Tembeling, at light, ii.1923 (H.M.P.), 1 ♂.

29. *Sympaector vittifrons* Kirsch (1875).

Pahan: Kuala Teku, 300 ft., xii.1921 (H.M.P.), 1 ♂; and Peninsular Siam: Nakon Sri Tamarat, Khao Luang, 2,000 ft., iii.1922 (H.M.P.), 1 ♂.

30. *Sympaector pagis ligyrus* Jord. (1911).

Perak: Maxwell's Hill, 3,000 ft., vi. vii.1916, 1 ♀.—Described from a single ♂ from "Malacca." The ♀ agrees with the ♂ apart from the sexual distinctions.

Xenognathus gen. nov.

♂. Generis *Cedus* Pasc. (1860) dicti affinis, mandibulis longis angustis porrectis facile distinguendus.

Genotype: *X. pellitus* sp. nov.

The long and narrow mandibles, with two minute teeth on inner margin and curving towards each other at apex, recall those of the larva of an ant-lion.

Upperlip longer than broad, truncate, bisinuate, the lateral angles pointed, the median one very short, obtuse. Sinus of labiophore broadly triangular; the underlip divided to near insertion of palpi into two very narrow pointed lobes; the labial palpus long and very slender. Rostrum truncate, the angles rounded off and distinctly receding, in basal half traces of three carinae. The lateral curve of the prothoracic carina less wide than in *Cedus*, the longitudinal basal carinula descending. Otherwise the new genus similar to *Cedus*, apart from colour, in which the only known specimen agrees better with some small rufous species of *Mecocercina* Jord. (1894).

31. *Xenognathus pellitus* sp. nov.

♂. Brunneus, supra cruce prothoracicali atque vitta suturali utrinque trilobata luteo-griseis ornatus, subtus pallide rufus, griseo pubescens.

Long. 4.3 mm.

Pahang: Sungai Takar, ix. 1922 (H.M.P.), 1 ♂.

Proboscis one-fifth broader at apex than long, with a slight swelling each side between the antennae, apical half flat. Mandibles, measured from middle of apex of rostrum, a little over two-thirds the length of the rostrum. Frons slightly narrower than first segment of antenna. Occiput brown in middle. Antenna more than twice as long as the body, segments 3 to 11 long, 8 to 11 decreasing in lengths, 11 being shorter than 10, as in *C. guttatus* Pasc. (1860).

Pronotum one-half broader than long, with a broadish median stripe, to which is joined each side a spot placed in the transverse sulcus, the grey pubescence extending along carina as a narrow border, towards side a subapical, a median, and a basal spot, the lateral carina broadly bordered with grey, the transverse antemedian furrow angulate in middle, each half anteriorly convex; dorsal carina nearly straight, slightly convex; sides and posterior brown discal area punctate. Scutellum subcircular, luteous grey.

Elytra half as long again as broad, subcylindrical, somewhat impressed behind the feebly elevate subbasal swelling, strongly punctate-striate, the sutural luteous grey marking (on a rufous ground) somewhat resembles the flattened out skin of a mammal, the stripe covers about two and one half interspaces, but widens out three times: once at basal margin, extending here half-way to shoulder, then again in antemedian depression, this branch reaching to interspace 7, the postmedian branch nearly extends to margin, the "tail" almost separated from "body-skin," longitudinally divided, curving sideways, a small spot above shoulder at base, another behind shoulder, a longer diffuse limbal one at shoulder, an antemedian limbal spot and another obliquely above and behind it also grey; suture slightly brown behind middle. Pygidium somewhat broader than long, rounded.

Middle of prosternum densely, sides of pro- and mesosterna dispersedly punctate, abdomen impunctate. Legs long, pale rufous, upperside of tibiae and tarsi slightly brownish, first tarsal segment two to three times as long as the other segments together.

32. *Habrissus heros* Pasc. (1871).

Gunong Tahan, 3,300 ft., xi. 1920 (J. Bragga), 1 ♀.—The first specimen I have seen from the Malay Peninsula.

33. *Nessiara longicollis* Jord. (1911).

Selangor: Kuala Kubu, Bukit Kutu, 3,400 ft., viii. 1915, 1 ♀.—Peninsular Siam: Nakon Sri Tamarat, Khao Luang, 2000–2500 ft., iii. 1922 (H.M.P.), 3 ♀♀.

34. *Sintor bicallosus* Lac. (1866).

Pahang: Cameron's Highlands, 4800 ft., Oct. 1923, at light (H.M.P.), and Lubok Tamang, 3,500 ft., vi. 1923 (H.M.P.), 2 ♂♂.

35. *Sintor quadrilineatus* Fahr. (1839).

Perak: Jor Camp, 2,000 ft., viii. 1922 (E. Seimund), 1 ♀.

36. *Sintor guttatus* Kirsch (1875).

Pahang: Cameron's Highlands, 4,800 ft., vi. 1923 (H.M.P.), 1 ♂.

37. *Sintor rhabdotus* Jord. (1923).

Peninsular Siam: Nakon Sri Tamarat, Khao Ram, 1500–3000 ft., iii. 1922 (H.M.P.), 1 ♂, 1 ♀.

38. *Cleorisintor glaucus* Jord. (1923).

Selangor: Kuala Lumpur, vi. 1921 (H.M.P.), 1 ♀.

39. *Xenocerus deletus* Pasc. (1860).

Perak (C. Wray), 2 ♀♀.—Pahang: Sungai Renglet, 3,500 ft., iii. 1925 (H.M.P.), 1 ♂.—Peninsular Siam: Nakon Sri Tamarat, Khao Luang, 2,000 ft., iii. 1922 (H.M.P.), 1 ♂, 3 ♀♀.

40. *Xenocerus variabilis* Pasc. (1860).

Perak: Maxwell's Hill, 3,000 ft., vi. vii. 1916, 1 ♂.—Selangor: Kuala Lumpur, 1 ♂; Rawang, vii. 1914, 2 ♂♂; Bukit Kutu, 3,000 ft., iv. 1926 (H.M.P.), 1 ♀.

41. *Xenocerus fimbriatus* Pasc. (1860).

Pahang: Kuala Teku, 550 ft., x. 1921 (H.M.P.), 1 ♀.

42. *Xenocerus pictus* Kirsch (1875).

Selangor: Kuala Lumpur, 2 ♀♀; Bukit Kutu, v. 1909, 1 ♀; The Gap, 2,700 ft., i. 1915, 2 ♂♂.—Kedah Peak, 4,000 ft., x. 1915, 1 ♀.

43. *Xenocerus saperdoides* Gyll. (1839).

Selangor: Kuala Kubu, Bukit Kutu, 3,400 ft., viii. 1915, 1 ♀.—Kedah Peak, x. 1915, 1 ♀.

44. *Xenocerus tephrus* Jord. (1913).

Perak (C. Wray), 1 ♂, 2 ♀♀.—Selangor: Kuala Lumpur, 2 ♀♀; The Gap, 2,700 ft., i. 1915, 1 ♀; Kuala Kubu, Bukit Kutu, 3,400 ft., viii. 1915, 1 ♀.—Pahang: Cameron's Highlands, Tanah Ratu, 4,800 ft., i. 1924, at light (M. R. Henderson), and in same district, 4,800 ft., x. 1923 (H.M.P.), 1 ♂♀; Sungai Renglet,

3,500 ft., iii. 1915 (H.M.P.), 4 ♀♀, some at light : Gunong Padang, 5,500 ft., xii. 1923 (H.M.P.), 1 ♀ ; Lubok Tamang, 3,500 ft., vi. 1923, at light (H.M.P.), 1 ♂. —The species was described from a single ♂ from Perak, and no further specimens had come to hand until Mr. Pendlebury sent the above series. The pronotum and elytra are uniformly grey (apart from dark spots due to abrasion), but in one ♀ there is a remnant of the ancestral pattern, the elytra bearing in this example a minute brown postmedian dot on second line of punctures and farther back in sutural interspace a short thin brown line. The head has usually a brown median stripe and varies from yellow to nearly white. The antenna of the ♀ varies much in colour, the principal varieties being : (a) segments 1 to 8 yellowish grey ; (b) segments 5 and 6 bluish black ; and (c) all segments bluish black. Similar colour-variations occur in other species with hairy ♀-antennae, for instance *X. saperdoides* and *X. pictus*.

45. ***Stiboderes cavifer*** Jord. (1925).

Selangor : The Gap, 2,700 ft., i. 1915, 1 ♂. —Known to me from Java, Sumatra, Borneo, Luzon, and North Celebes.

46. ***Stiboderes chevrolati*** Rits. (1883).

Perak : Batang Padang, 1,800 ft., i. 1925 (H.M.P.), 1 ♀.

47. ***Taphrodes marmoratus*** Roel. (1880).

Pahang : Sungai Renglet, 3,500 ft., iii. 1925 (H.M.P.), 1 ♀. —Peninsular Siam : Nakon Sri Tamarat, Khao Luang, 2,000 ft., iii. iv. 1922 (H.M.P.), 1 ♂ at light, 1 ♀.

48. ***Xylinades rugosus carbo*** subsp. nov.

♂♀. Capitis carina media angustior.

Pahang : Cameron's Highlands, 4,800 ft., x. 1923 (H.M.P.), 2 ♂♂, type ; *ibid.*, i. 1924 (M. R. Henderson), 1 ♂ ; Sungai Renglet, 3,500 ft., iii. 1925 at light (H.M.P.), 1 ♂. —Perak : Batang Padang, 1,800 ft., vi. 1923, at light (H.M.P.), 1 ♀.

In *X. r. rugosus* Gylh. (1833), from Java, the median carina of the head is broadish and therefore appears less convex than in *X. r. carbo* ; it is also longer in the specimens from the Malay Peninsula.

49. ***Xylinades aruensis*** Jord. (1895).

Selangor : Gombak Valley, x. 1921 (H.M.P.), 1 ♂ ; and Pahang : Sungai Renglet, 3,500 ft., iii. 1925, at light (H.M.P.), 1 ♀.

50. ***Xylinades nodicornis*** Weber (1801).

Perak : Batang Padang, 1,800 ft., i. 1925, at light (H.M.P.), 1 ♂.

51. ***Dendrotrogus perfolicornis*** F. (1801).

Pahang : Lubok Tamang, 3,500 ft., vi. 1923 (H.M.P.), 1 ♀, and Peninsular Siam : Nakon Sri Tamarat, Khao Luang, 2,000 ft., iii. 1922 (H.M.P.), 1 ♀.

52. *Dendrotrogus hypocrita* Jekel (1855).

A common species, widely distributed.

53. *Eucorynus crassicornis* F. (1801).

Evidently everywhere in Indo-Malayan countries.

54. *Rawasia ritsemæ* Roel. (1880).

Perak : Batang Padang, 1,800 ft., iii. 1924 (H.M.P.), 1 ♂.

55. *Rawasia annulipes* Jord. (1895).

Perak : as above, v. 1923 (H.M.P.), 1 ♂, and Selangor : Gombak Valley, viii. 1822 (H.M.P.), 1 ♀.

56. *Rawasia communis robusta* subsp. nov.

♂. Major, pronoto lateribus minus rotundato, elytris brevioribus, tibiis apice nigris.

Long. 12–14 mm., lat. 5–6 mm.

Selangor : The Gap, 2,700 ft., i. 1915, 3 ♂♂, and Kuala Lumpur, 1 ♂.

Elytra with black postmedian tuft as in *R. c. communis* Jord. (1895), from Assam. Prothorax more conical than in the Assamese subspecies, the elytra shorter, less cylindrical. Apex of mid- and hindtibiae more extended black (in foretibia the apex black on underside only).

57. *Caccorhinus obscurus* Jord. (1904).

Lobok Kedondong, N.W. of Mt. Ophir, 200 ft., xi. 1920 (H. C. Abraham), 1 ♀.

58. *Basitropis rotundata* Jord.

Tamarat, Khao Luang, 2,000 ft., iii. 1922 (H.M.P.), 1 ♀.

59. *Basitropis platypus* Jord. (1903).

Selangor : Gombak Valley, x. 1921 (H.M.P.), 1 ♀.—Only a few specimens of this broad-footed species are known to me.

60. *Phloeobius alternans* Wied. (1819).

Perak : Batang Padang, 1,800 ft., v. 1923 (H.M.P.), 1 ♂, 1 ♀; same place, vi. 1924, at light (H. R. Henderson), 1 ♀.

61. *Ozotomerus rugicollis* Jord. (1895).

Selangor : Kuala Lumpur, vi. 1916, 1 ♂.—Pahang : Kuala Tahan, xi. 1921 (H.M.P.), 1 ♂.—Peninsular Siam : Nakon Sri Tamarat, Khao Ram, 750 ft., ii. 1922, at light (H.M.P.), 1 ♀.

62. *Apolecta aspericollis* Kirsch (1875).

Pahang (W. H. D. Edwards), 1 ♂; Pahang : Senyum, Kotu Tongkat, vi. vii. 1917, 1 ♀.

63. *Apolecta latipennis* Jord. (1916).

Pahang : Sungai Renglet, 3800 ft., iii.1925, at light (H.M.P.), 1 ♂, and Fraser's Hill, 3500-4500 ft., viii.1923 (H.M.P.), 1 ♂.—These ♂♂ are less broad in the elytra than the ♀ from which the species was described, but agree otherwise very well with it.

64. *Apolecta puncticollis* Jord. (1895).

Perak (C. Wray), 1 ♂.—Pahang : Kuala Tahan, 300 ft., xi.1921 (H.M.P.), 1 ♀.

65. *Araecerus fasciculatus* Deg. (1775).

Selangor : Kuala Lumpur, i., iv., vi., x., a series, one ♂ at light.

66. *Araecerus corporaali* Jord. (1924).

Selangor : Kuala Lumpur, viii.1922 (H.M.P.). 1 ♀.

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NEW ANTHRIBIDAE FROM THE OLD WORLD

By DR. KARL JORDAN

1. *Meganthribus pupa* Jord. (1895).

THE receipt of additional specimens from the Philippines and elsewhere enables me to supplement my remarks on this species published in *Nov. Zool.* xx, p. 265, no. 6 (1913). As stated, i.e., the metasternum of *M. pupa* has no groove at the apex between the midcoxae, i.e. the groove which runs along the anterior margin of the metasternum behind the cavity of the midcoxa is shallow and does not extend across the median process. In *M. sulphureus* Waterh. (1876), *M. harmandi* Lesne (1891), *M. childreni* Gray (1832), and allied species, the groove is very deep and is continued across the intercoxal process, whereas *M. nubilus* Jord. (1898) takes a somewhat intermediate position, the groove of this species being more or less indicated in the centre, not entirely absent in this place.

The specimens we now have of *M. pupa* afford sufficient evidence for the following arrangement of the subspecies :

A. Intercoxal process of mesosternum more convex than the anterior median process of the metasternum which meets it, its apex being more ventral than the metasternal process (in the inverted specimen the mesosternal process above the metasternal one) ; on the mesosternal process along its side a groove or depression :

a. *M. pupa whiteheadi* Jord. (1895).

Elytra tessellated with black.—Luzon.

The pair from North Luzon (type ♂) more whitish grey than our two ♂♂ from Mt. Banahão and Imugan, and the dark markings of the underside smaller and less extended black.

b. *M. pupa bakeri* Heller (1925).

The dark tessellation of the upperside much reduced, but on each elytrum a large black postmedian patch nearly as in *M. sulphureus* Waterh. (1876).—Sibuyan. Not known to me.

c. *M. pupa mindorensis* subsp. nov.

♂. Narrower than the two previous subspecies ; dorsal depressions of pronotum deeper. General colouring less white than in the typical pair of *M. pupa whiteheadi* (probably somewhat darkened by discoloration) ; black markings as in *M. p. whiteheadi*, but the large spots of the elytra rather shorter. Length of elytra 20 mm., breadth 10.5 mm.—Mindoro, 1 ♂.

B. Intercoxal process of mesosternum flattened, its apex on a level with the metasternal process.

d. *M. pupa pupa* Jord. (1898).

Meganthribus pupa ab. *confluens* Heller, *Ent. Mitteil.*, p. 88, tab. 3, fig. 6, ♀ (1925) (Mindanao).

I have as yet found no geographical difference between the specimens from the localities represented in our series of 9 ♂♂ and 6 ♀♀.—Philippines: Panao and Mindanao; Talaut Is.; Buru; Ceram.

e. *M. pupa papuanus* subsp. nov.

♂♀. Like *M. p. pupa*, but the transverse carina of the pronotum less curved and interrupted not only in centre but also before joining the lateral carina. Might be mistaken for *Eugigas schocnherri* Thoms. (1857).—One pair from Korrido, Geelvink Bay, New Guinea (O. Beccari).

2. *Meganthribus harmandi schanus* subsp. nov.

♀. Upper surface much more extended black than yellowish grey, underside yellowish grey marked with black. The following markings of upperside yellowish grey: an interrupted median stripe on head and pronotum, dilated in middle of disc and again before carina, the sinus between the two projections rounded, at side of pronotum a narrow stripe from near apical margin to near carina, sinuate on dorsal side, the posterior end of this band curving forward, behind carina a small lateral spot; on elytra a short broadish basal sutural streak posteriorly more or less connected with an antemedian discal patch which is composed of several spots, above shoulder a longish basal spot and behind shoulder a lateral one, in seventh and ninth interspaces a row of spots, behind middle a transverse patch composed of two or three spots, several small spots on apical declivity, and minute spots at lateral margin; a streak at each side of pygidium.

On underside two lateral spots on metepisternum, two rows on abdomen, and middle of pro- and metasterna behind pro- and midcoxae black, centre of metasternum and of abdominal segments 2 to 4 also black, probably because denuded. Legs more extended black than in *M. h. harmandi* Lesne (1891).

Dawnat Range, Tenasserim, xii. 1893, 1 ♀.

3. *Mecotropis whiteheadi retipennis* subsp. nov.

♂♀. Elytra densely marmorated with grey from base to apex. Philippines: Musbate (type), Aroroy.

The eye sinuate and the median groove of the proboscis continued on to the frons. Black markings of underside somewhat larger than in *M. whiteheadi whiteheadi* Jord. (1898).

4. *Mecotropis caelestis catoxanthus* subsp. nov.

Mecotropis caelestis Jord. (nec id. 1898), *Nov. Zool.* xx, p. 266, no. 60 (1913) (Palawan).

♂. Sides of sterna ochraceous instead of bluish grey. Palawan, 2 ♂♂.

We now have *M. c. caelestis* Jord. (1898) also from Mindanao.

5. *Mecotropis pantherinus philippus* subsp. nov.

♀. Light pubescence ashy grey, slightly bluish; the black spots of the elytra on the whole somewhat smaller than in specimens from Aru and New Guinea, the largish round spot on the subbasal swelling of *M. p. pantherinus* Thoms. (1857) replaced in the new subspecies by some smaller irregular spots. —Recalls *M. caelestis*, but the frons has a median carina.

Philippines: Aroroy, 2 ♀♀.

6. *Xenocerus suturalis tombarus* subsp. nov.

♂♀. The lateral stripe of the pronotum complete, the median one broad and somewhat diffuse; the basal humeral spot of the elytra larger and connected along basal margin with the sutural stripe, which is more strongly widened behind base than in *X. s. suturalis* Jord. (1904) from Ron and Jobi, Geelvink Bay.

Bismarck Archipelago: New Ireland, xi. 1923–iii. 1924 (A. F. Eichhorn), a pair.

7. *Xenocerus olivaceus ancorinus* subsp. nov.

♂♀. Like *X. olivaceus australicus* Jord. (1895), but the transverse band of the elytra not nearly reaching lateral margin, usually attaining 7th or 6th stripe of punctures, the sublateral line of basal half absent, the thin apical sutural line and the transverse subapical dash at the most indicated.

Bismarck Archipelago: New Hanover, ii. iii. 1897 (Webster), 4 ♂♂, 2 ♀♀.

8. *Xenocerus olivaceus suadus* subsp. nov.

♂♀. *X. olivaceus equestris* Pasg. (1860) affinis, vitta elytrorum subhumerali basi brevior, fascia transversa tenuior.

Ron I., type, and Waigen I., 2 ♂, 7 ♀♀.

The transverse, oblique, band of the elytra thinner than the sutural vitta; the dorsal stripe reaching only halfway from base to transverse band, no sublateral and subapical markings.

9. *Xenocerus timorensis* sp. nov.

♂. *X. olivaceo* Motsch. (1874) similis, elytrorum virgis griseis latioribus, vitta dorsali basali magis arcuata, antemmarum segmento 3^o brevior.

Long. 13 mm.

Dutch Timor: Gunong Leo, 2,000–4,000 feet, xi. xii (W. Doherty), 1 ♂ ex coll. van de Poll.

The specimen is somewhat discoloured, the pubescence of the underside and the lines of the upperside being buff instead of greyish white. Third segment of antenna a little shorter than the proboscis is wide at the narrowest point between the antennae. The three thoracic stripes complete. The sutural stripe of the elytra occupies a little more than the sutural interspace, its transverse postmedian branch elbowed (nearly at a right angle) and reaching to seventh line of punctures; the dorsal, basal, stripe strongly curved inward, its posterior end not far from the sutural stripe, and its base partly surrounding the shoulder angle, but not connected with the sutural stripe; no sublateral and apical lines.

10. *Epitaphius albopictus* sp. nov.

♂♀. Niger, supra luteo-ochraceo et nigro-brunneo tomentosus, albo variegatus, elytris duabus maculis communibus albis, una ante-, altera postmediana, notatis; subtus luteo-griseus, pro parte nigro-brunneus, tibiis albis basi apiceque nigris, tarsorum segmento 1^o albo basi nigra.

Long. 9–11 mm.

Madagascar: Diego Suarez, 2 ♂♂ in Mus. Tring, type; 2 pairs in Mus. Prague from "Madagascar."

The pubescence coarse, almost squamiform. Head and rostrum rugate, but not densely, white mixed with luteous. Antenna white at the apices of segments 1 to 7, 8 entirely white, at least on upperside, club black-brown, hairy beneath as in the other species known to me. 9 triangular, not quite twice as long as broad, 10 as broad as long, 11 abruptly narrowing from middle to the pointed apex. 9 to 11 decreasing in width, particularly in ♂. Pronotum very densely rugate-reticulate, pubescence sparse on the greater portion of the surface, middle somewhat depressed, particularly before the carina, apex luteous mixed with white, a white median stripe from apex to middle, somewhat arrow-head shaped, continued to base by buff ochraceous pubescence, at each side of it a small white subapical spot and a postmedian one, and another spot farther towards side at apical third, behind carina a white spot on each side, all these white markings surrounded with luteous-ochraceous, this latter colouring diffuse; dorsal carina straight, slightly convex laterally.

Scutellum white. Elytra nearly twice as long as broad, suture and alternate interspaces rather indefinitely spotted with blackish brown, on posterior slant of subbasal callosity, and extending into the depression, a transverse white patch across suture composed of confluent dots, mixed with luteous-ochraceous and blackish brown and extending to third or fourth line of punctures, at the side of it one or two white dots, a second transverse white macula before apical declivity, narrow, somewhat irregular, and extending to fourth line of punctures, a basal spot above shoulder, two limbal dots behind shoulder, another behind middle, a subapical spot on each elytrum, and here and there indications of small spots white. Pygidium white, nearly semicircular.

Prosternum very densely rugate-punctate, the interspaces granulate; metepisternum and sides of metasternum (except anterior lateral portion) pitted with large punctures; abdomen without large punctures. Femora greyish white with brown dorsal patch; segments 2 to 4 of tarsi brown as in allied species, strongly contrasting with the first segment.

11. *Phloeobius notius* sp. nov.

♂♀. *Ph. pustulosi* Gerst. (1871) affinis, fronte capitis carina mediana praedita, angulo antico prothoracis prominente, segmento tertio antennae duobus primis simul sumptis (♂♀) longiore. Pronotum medio depressum singulo penicillo minuto atro mediano notatum. Elytra postice haud pustulosa, linea suturali subapicali atra.

Long. 6–10 mm.

Natal: Durban (G. F. Leigh), a series.

The median depression of the pronotum, which bears a minute black tuft in centre, is flanked by a longitudinal swelling, in front of which there is a white

spot, between this swelling and the lateral margin no second swelling. The subbasal callosity of the elytra without the ochraceous tufts of *Ph. pustulosus* Gerst. (1871): suture and alternate interspaces dotted with black, these spots slightly raised: apical declivity greyish white with a sharply marked black line on the suture. In *Ph. pustulosus* the underside of the first and second tarsal segments a beautiful orange, which colour extends a very little on to the tibiae; in *Ph. notius* the underside of the tarsi at the most faintly yellowish.

Allopius gen. nov.

♂. Rostrum breve, a basi gradatim angustius. Oculus transversus, lateralis, sinuatus, scrobi antennae fere contiguus, lobo dorsali obliquo. Antenna brevis, segmento 10^o transverso. Carina prothoracis mox ante basin sita, in angulo recto antrorsum ad medium usque flexa. Elytra basi truncata, cylindrica. Ungues tarsorum inaequales.

Genotypus: *A. calix* sp. nov.

In appearance like a short *Basitropis* Jek. (1855), but the prothoracic carina distinctly antebasal and reaching only to the middle of the side. Proboscis twice as broad as long, widest at base, truncate, its lateral margin eariniform, extending from apex into the sinus of the eye, completely covering the transversely triangular antennal groove. Dorsal lobes of eyes large, strongly converging, the frons a little more than one-third the width of the base of the proboscis (♂). Forecoxae not quite contiguous, antecoxal portion of prosternum somewhat longer than the coxa is broad. Mesosternal process rounded, narrower than the mideoxa. Tarsi as long as tibiae, first segment short, especially in fore- and midtarsi; claw asymmetrical, the posterior (in foretarsus = outer) claw being much the larger.

To be placed near *Tropidobasis* Jord. (1923).

12. **Allopius calix** sp. nov.

♂. Brunneus, albo-griseo tomentosus, brunneo variegatus, elytris macula magna basali communi, altera mediana in utroque elytro sita, lateraliter cum tertia anteapicali coniuncta. Abdomen medio planato-depressum.

Long. 4 mm.

Natal: Umhlali Beach (type) and Malvern, 3 ♂♂, type in the Durban Museum.

Cylindrical, about two and a half times as long as broad. Proboscis and head greyish white, the former with a median carina which does not reach apex; the occiput rugate-reticulate. Antenna not reaching to base of prothorax, segment 2 elliptical, truncate, 3 as long as 2, but much thinner, one-fourth longer than 4, 4 to 8 gradually decreasing in length, club short, but the segments well separated, 9 a little broader than long, 10 much broader than long, 11 short-ovate.

Prothorax one-fifth broader than long, nearly evenly convex, broadest before base, slightly constricted before angle of carina, irregularly reticulate-rugate-punctate, the meshes of unequal size and the interstices more or less forming longitudinal ridges; the greyish white pubescence rather more in evidence at apex than on disc, in front of carina half-way to side a brown space more or less far extended forward. Elytra not depressed along suture, the

stripes of punctures not impressed, the interspaces not convex, subbasal callosity and the depression behind it hardly at all indicated: the blackish brown patch around the greyish white scutellum rotundate; the suture and interspace 9 dotted with brown, the median brown patch does not extend to suture and is laterally connected with a transverse anteapical transverse band, which is more or less interrupted at the suture. Pygidium greyish white like the whole underside and the legs, evenly rounded, but a little longer than half its width. In fore- and midtarsi segment 4 much longer than 1, 2, and 3 together.

13. **Nessiara stomphax** sp. nov.

♂. *N. longicollis* Jord. (1911) similis, latere rostri ad basin mandibulae fortiter bilobato.

Long. 9-16 mm.

The lateral and apical margins of the proboscis are not on a continuous level: the lateral margin ends with a more or less prominent lobe, and above this the lateral portion of the apical margin forms another lobe or a ridge, with a gap in between the two lobes. The frons is less concave than in *N. longicollis* Jord. (1911), and the pronotum shorter. I am as yet uncertain as to whether any of the ♀♀ which we have belong to this species.

The ♂♂ vary according to locality, the species being represented in our collection by three subspecies:

a. **N. stomphax stomphax** subsp. nov.

♂. The lateral margin of the proboscis deeply curved down behind antennal groove, the apical, horizontal, portion of this margin prominent, forming an elbow with the proximal portion and being much longer than the third segment of the antenna. Suture of elytra and alternate interspaces dotted with black, the two dorsal spots placed in front of apical declivity separated, the light-coloured patch before these two black spots buff, the same colour as the head.

Long. 16 mm.

Java: Senggoro, Zuider Mts., Passoeroean (A. Koller). 1 ♂, type, and S. Java, 1,500 feet (H. Fruhstorfer). 1 ♂.

b. **N. stomphax hians** subsp. nov.

♂. The lateral margin of the proboscis less deeply curved down behind antennal groove and its apical horizontal portion quite short, the gap between it and the dorsal lobe broader. Suture of elytra with an antemedian spot, otherwise unspotted, the black spot before apical declivity undivided, occupying interspaces 3, 4, and 5, the light-coloured patch placed in front of it nearly white.

Long. 13 mm.

Batoe Is.: Tana Masa, ix. 1896 (Kannegieter), 1 ♂, ex coll. van de Poll.

c. **N. stomphax megastomis** subsp. nov.

Nessiara didyma Pasc., Jordan (err. determinationis), Nov. Zool. xviii, p. 601, sub no. 2 (1911).

♂. The lateral margin of the rostrum nearly straight to apex, being but slightly curved in S-shape; frons narrower than in the previous two subspecies. Markings of elytra as in *N. st. hians*.

Long. 9-14 mm.

Borneo: Brunei (Waterstradt), type: Pontianak: Tamcang Lajang, S.E. Borneo: a series.

When I began to identify the Anthribidae of the Tring Museum in 1893 I mistook *Nessiara didyma* Pasc. (1859) to be the ♀ of the present subspecies. I had no specimen of Pascoe's species at that time. *N. didyma* is a much shorter species with the elytra more evenly convex, the sides of the proboscis of both sexes more or less rounded and notched in middle, not dilated at apex, the frons narrow and not concave anteriorly, etc.

14. *Nessiara longicollis hortulana* subsp. nov.

♂. Rostrum a little shorter in comparison with its width, the margin from the lateral angle apicad less rounded and (in lateral aspect) less curved upwards. Sumatra: Marang, Res. Benkoelen (W. Doherty), type: also from Java.

15. *Nessiara illaxa* sp. nov.

♀. Speciminibus parvis *N. longicollis* subsimilis, rostro lateribus simplice, apice non ampliato, antennae clava multo minus laxa, segmento 10° valde transverso.

Long. 9 mm.

Sumatra (A. Kollar), 1 ♀.

Proboscis without a lateral notch, sides slightly rounded, less explanate than in ♀ of *N. longicollis* Jord. (1911); frons wider and less concave anteriorly than in that species, a little more than one-third the width of the base of the proboscis. Club of antenna shorter than in *N. longicollis* ♀, dark brown, segment 9 asymmetrically triangular, somewhat longer than broad, 10 nearly twice as broad as long, rounded at sides, 11 irregularly circular, a little broader than long, the narrow bases of 10 and 11 being very short the club is much more compact than in the preceding species and *N. didyma* Pasc. (1859), *N. lineola* Kirsch. (1875), and *N. optica* Jord. (1904).

Pronotum as in *N. longicollis*, somewhat shorter, with two interrupted brown vittae, of which the posterior portion is shorter than in *N. longicollis*. Elytra a little less flattened dorsally, in basal half a number of brown spots, of which the one in third interspace is longest, a black oblong spot occupying interspaces 3, 4, and 5, not separated into spots, and larger than the black spot placed in front of apical declivity, the pubescence between the two patches of each elytrum greyish, much less conspicuous than in the allied species. Pygidium shorter than in *N. longicollis*, almost semicircular.

16. *Nessiara gulosa* sp. nov.

♂. *N. opticae* Jord. (1894) similis, pronoto elytrisque longiore, oculis antice haud contiguis.

Long. 8.3 mm.

Sumatra: Marang, Benkoelen (W. Doherty), 1 ♂.

Proboscis more than twice as broad as long, not widened at apex, flat, slightly convex, black in middle, especially at apex. Club of antenna loose, the three segments nearly equal in length, 11 elongate-elliptical. Frons as broad as segment 5 of the antenna is long, concave, without carina. Pronotum very

little broader than long (less than one-tenth), widest at the angle of the carina, densely punctate, brown markings inconspicuous, dorsal vittae interrupted, narrow, not reaching apical margin, much wider behind carina, here a rounded yellowish grey spot between them, a lateral brown spot at some distance above the apex of the lateral carina.

Elytra cylindrical, slightly flattened at suture, one-third longer than broad, an elongate spot on outer side of subbasal swelling, a short, oblique, median spot longest at second line of punctures and extending into fourth interspace, a larger spot at beginning of apical declivity, longer than broad, more or less truncate in front and rounded behind, all brownish black and sharply defined, at lateral margin two brown spots in anterior half, widely separated, another at apical third less distinct and followed at some distance by a minute diffuse spot, in between the last two the pubescence slightly yellowish, the space between the two conspicuous dorsal spots occupied by a pale yellowish grey one, which is as long as the black spot behind it, but narrower. Pygidium as long as broad, rounded, slightly depressed transversely in middle, and medianly somewhat convex at apex. Hypopygidium nearly as in *N. optica* Jord. (1894), the processes long and broad and apically nearly symmetrically rounded, in *N. optica* the apex of the processes dorsally much more rounded than ventrally.

17. *Nessiara munda* sp. nov.

♂♀. Brevis, compacta, rufo-brunnea, supra luteo-griseo pubescens, pronoto brunneo maculato, elytris interstitiis alternis brunneo et griseo tessellatis. Rostrum cum capite reticulatum rugoso-punctatum, medio macula nuda nitida parum elevata notatum. Frons capitis lata. Antenna brevis, clava compacta, segmento 10^o longitudine duplo latiore.

Long. 8 mm.

Sarawak : Matang Rd., 2,800-3,000 feet, ii. 1902, a pair.

Rostrum nearly twice as broad as long, truncate, slightly trisinate at apex, from inner margin of eye a cariniform swelling extends about to middle of proboscis, curving laterad and gradually disappearing, base flattened in front of eye, a glossy median swelling reaches neither base nor apical margin. Frons more than one-third the width of the rostrum, with a brown stripe on each side, the stripes united on occiput. On underside the median portion of proboscis between the antennal grooves with two longitudinal channels. Antenna rufous, not reaching middle of prothorax, segment 8 a little longer than broad, 9 as long as broad, 10 twice as broad as long, 11 broader than long, the three segments close together. Pronotum almost evenly convex from side to side, widest at curve of carina, nearly one-third broader than long, coriaceous, somewhat transversely rugulose on disc, marmorated with luteous grey; a median stripe pointed anteriorly, twice constricted, widened along carina, at the side of it a round median spot which is joined to a second vitta, in curve of carina a ring joined to the second vitta and to an apical spot; lateral curve of carina very even.

Elytra cylindrical, broadest behind shoulder, not quite one-half longer than broad, granulose, the suture and alternate interspaces tessellated with brown and greyish white, whereas the other interspaces are luteous grey, the brown spots on the whole larger than the whitish ones, giving the elytra the appearance of being reticulated, the spots on suture smaller and more numerous,

a median brown spot each in third and fifth interspaces and another in third at the beginning of the apical slant larger, about twice as long as broad. Pygidium granulose, a little shorter than broad, in ♂ less narrowing apically than in ♀.

Sides of pro- and metasternum with largish punctures, which are dense on metepisternum; middle of prosternum coarsely punctate, swollen before the coxae. Intercostal process of mesosternum truncate, twice as broad as long, somewhat convex in middle. Abdomen punctulate; last segment in ♂ with a thin median carina which ends with a minute marginal tooth, margin shallowly bi-emarginate, with the lateral angles rounded, in ♀ armed half-way between middle and side with a sharp tubercle placed near margin. First tarsal segment about as long as fourth.

Nearest to *N. albicera* Jord. (1911), but easily recognized by the structure of the proboscis, antennae and last abdominal segment, and by the colouring of the upperside.

18. *Nessiara bidens* sp. nov.

♂. *N. sellatae* affinis, fronte capitis simplicee et metasterno bituberculato praeicipue distincta.

Long. 8 mm.

Northern Nias: Hili Madjedja, x-xii.1895 (Mitschke), 2 ♂♂, ex coll. van de Poll.

Colouring essentially as in *N. sellata* Jord. (1894). Rostrum a little longer, with a median carina, which is not continued on to the frons. Head rather strongly rugate. End-segment of antenna regularly elliptical, slightly longer than 10. Lateral carina of pronotum more evenly curved, its apex not flexed down. Pygidium very strongly convex in apical half. Mesosternal intercoxal process strongly rounded. At each side of median furrow of metasternum a transverse tubercle. Tooth at apex of midtibia very small.

19. *Nessiara sellata niasica* subsp. nov.

♂♀. Maculis brunneis pronoti majoribus, carina mediana capitis sub-obsolente, dente apicali tibiae intermediae sat magno et lato.

Northern Nias: Hili Madjedja, x-xii.1895 (Mitschke, Kannegieter), a small series, ex coll. van de Poll.

The apical tooth of the midtibia is much larger than in *N. sellata sellata* Jord. (1895) and very broad. The median carina of the head is present, but is more or less split up by longitudinal grooves, being particularly low anteriorly on the frons.

Dinomelaena gen. nov.

♂♀. Margines apicalis et lateralis rostri ad angulum apicalem separati; margo apicalis medio convexus, haud sinuatus. Clava antennae valde compressa, segmento 10° latitudine longiore. Carina antebasalis pronoti ad latus in aere lato antrorsum flexa, paulo undulata.

Genotypus: *D. scelestas* Pasc. (1860, as *Apatenia*).

Here also belong *D. batjanensis* Jord. (1897), *D. immaculata* Jord. (1894), and *D. tuberculosa* Jord. (1894), all described as *Apatenia*, and *D. quadrituberculata* Montr., described as a *Stenocerus*. They are all fairly large, short, black species.

Pronotum uneven, somewhat constricted before the dorsal earina, so that the lateral carina is curved in S-shape, its apex being curved forward and somewhat raised: longitudinal carina horizontal, forming with dorsal carina an acute angle. Elytra tuberculated.

Club of antenna as in *Apatenia viduata* Pasc. (1859), II usually narrower and shorter than 10. The mesosternal intercoxal process truncate, angulate, the midcoxa being indented as in *Apatenia* and allied genera.

20. *Dinomelaena remota* sp. nov.

♂. *D. scelestae* similis, rostro subtus sine fossa longitudinali mediana, elytrorum tuberculis parvis.

Long. 7-9 mm.

Solomon Is.: Kulambangra, iii.1901 (A. S. Meek), 1 ♂, type; Florida, i.1901 (A. S. Meek), 1 ♂.

Whereas in *D. quadrituberculatus* Montrouz. (1855), from Woodlark, the d'Entrecasteaux, Egum, and Lousiade Is., Trobriand, and the eastern districts of the mainland of New Guinea, the underside of the proboscis bears only an indication of a median groove, this groove is long and sharply defined in *D. impunctata* Jord. (1894), *D. scelesta* Pasc. (1860), and *D. batjanensis* Jord. (1897).

In the above specimens from the Solomons the underside of the proboscis is convex between the antennal grooves, flattened anteriorly, where there is a small impression. The carina of the pronotum is more evenly curved at the sides than in the allied species. The subbasal swelling of the elytrum low, hardly tuberculiform, postmedian tubercle not much higher, the raised pustules in interspaces 5 and 7 distinct, on apical declivity one pustule in interspace 5 and, farther forward, two in 7 buff, in front of postmedian tubercle a triangular velvety black sutural spot.

Oxyderes gen. nov.

♂♀. *Apateniae* affinis, angulis prothoracis atque carinae acutis, singuli elytri basi fortiter rotundato-producta medio haud marginata.

Genotypus: *O. frenatus* Jord. (1897, as *Hypseus*).

The basal margin of the elytra is distinctly "marginate" in the allied genera, i.e. the channel which runs from the sides across the shoulder-angle is continued to the scutellum; in the species I separate here as a new genus the channel is obsolete on the dilated portion of the base. Besides the genotype here belong *Hypseus cyrtus* Jord. (1912), which probably is the same as *Stenoecerus collaris* Gylh. (1833), *Apatenia tessellata* Kirsch. (1875), *Apatenia fastigata* Jord. (1924), and the following new species:

21. *Oxyderes strigatus* sp. nov.

♂♀. Carina rostri antice obsoleta, sterna et abdomen luteo-albo vittata.

Borneo: Brunei (Waterstradt), 1 ♂, type; Kuching, xii.1899, 1 ♀; Kobele, ii.1893, 1 ♀; and 1 ♂, "Borneo (Wabnes)."

Similar to *O. tessellata* Kirsch (1875), of which it may be a co-subspecies; it has like that species a submedian tubercle in front of the hindcoxa. Carina of proboscis obsolete from middle to apex, being broken up into a number of

wrinkles; it extends on to frons, but soon disappears as a carina, there being no high carina on posterior portion of frons as there is in *O. tessellata*. Markings of pronotum variable: they are either similar (type) to those of *O. tessellata* or are united into four dorsal vittae. Elytra tessellated (type) as in *O. tessellata*, or the black spots more or less united into stripes.

Underside marked with yellowish white: on prosternum a median and a sublateral stripe and a patch below carina, on mesosternum a lateral stripe and the median process, on metanotum a sublateral and a lateral stripe and on abdomen a continuous lateral one.

22. *Hypseus fumatus* sp. nov.

♂♀. Niger, macula antescutellari lutea notatus, subtus griseo pubescens. Rostrum longitudine plus duplo latius, apice medio leviter emarginato. Clava antennae laxa. Pronotum inaequale, longitudine triente latius. Elytra basi fortiter producta, a basi ad apicem subgradatim angustiora, nigro-pustulata, gibbositate subbasali pustulis multo latiore altioreque.

Long. 5.3 mm.

Borneo, 1 ♂, type; "Malaisie," 1 ♀.

Upperside with a short, stiff brown pubescence which is somewhat silky and assumes in certain aspects a greyish tint; besides the yellow spot in front of the scutellum no conspicuous markings. Proboscis coarsely rugate-punctate, slightly convex from side to side, without carina, somewhat depressed in middle of base, lateral margin rounded, separated from apical margin by a slight incision, middle of apical margin straight, faintly incurved. Head coarsely rugate, frons narrower (♂) or broader (♀) than one-third of the rostrum. Segment 3 of the antenna as long as 2, not distinctly longer than 4, 5 to 8 gradually decreasing in length, 8 not quite twice as long as broad, club longer than 3 to 8 together, as strongly compressed as in *Apatenia viduata* Pasc. (1859), the edges very thin, all three segments longer than broad, of the same lengths, 9 and 10 truncate, recalling the seed-pod of some Crucifer, such as *Capsella*.

Pronotum a third broader than long, with a shallow depression in middle, two farther forward, connected with median one, and indications of depressions before carina, punctate-rugulate, somewhat granulate at sides, in a view from front about nine very hazy blackish spots appear; dorsal carina convex.

Elytra one-half longer than broad, broadest at base, hardly at all flattened, alternate interspaces with inconspicuous black pustules which are very little raised except a median one in third interspace, subbasal callosity broad and very distinct, the elytrum being depressed in front of and behind it, basal margin strongly rounded, behind shoulder and at apex an impression close to lateral edge. Pygidium one-third broader than long, evenly rounded. Grey pubescence of underside rather long and dense. On labiophore a transverse ridge which joins the ends of the longitudinal carinae, forming a posteriorly open square. Tibiae with two grey rings.

23. *Hypseus scapularis* sp. nov.

♂. Niger, parum griseo-brunnescens, elytris nigro tessellatis macula rotunda flava humerali ornatis, pronoto longitudine paululo latiore.

Long. 6.7-7.3 mm.

Philippines : Leite, 1 ♂, type ; Surigao, Mindanao, 1 ♀.

Near *H. axillaris* Jord. (1895), but the prothorax and elytra longer, the dorsal carina incurved in middle, the subbasal swelling of the elytra very low, etc.

Proboscis one-half longer than broad, emarginate in middle, coarsely rugate-punctate, with a median carina in basal half. Frons narrower (♂) or somewhat broader (♀) than segment of antenna, without carina, coarsely punctate-rugate like occiput. Segment 3 of antenna longer than 2 (which is rufous), 3 to 8 gradually decreasing in lengths, 8 little longer than broad, triangular in ♀, club less compressed and less loose than in *Apatenia viduata* Pasc. (1859), particularly in ♀, 9 = 10, 11 ovate, shorter and narrower than 10.

Pronotum one-ninth broader than long, depressed in middle from carina to before centre, here the depression dividing, running obliquely forward to behind eye, in the depression a longitudinal low elevation from centre to near carina, puncturation dense and deep, densest and roughest at side, minute on middle apical portion ; dorsal carina distinctly curved back in middle, lateral carina extending beyond middle ; in front of scutellum a narrow ochraceous spot, in oblique aspect nine diffuse black patches become visible, separated by short scanty pubescence. Scutellum slightly ochraceous.

Elytra nearly double as long as broad, almost gradually narrowing from shoulders, flattened above, but not impressed, stripes of punctures distinct, interspaces flat, except apex of ninth, subbasal swelling present, but low, not tufted, suture and alternate interspaces with long and short black spots, yellow shoulder spot circular. Pygidium one-fifth broader than long, rather strongly narrowed apicad, but rounded.

Underside grey, the pubescence long on prosternum. Tips of lobes of labiophore rather pointed, not rounded off, along apical margin of labiophore a groove curved like the margin. Forecoxae widely separated, the anterior intercoxal process depressed. Mesosternal intercoxal process twice as broad as the coxa. Anal sternite apically somewhat compressed, the apical margin appearing angulate in anal aspect.

24. *Hypseus mollis* sp. nov.

♂. Rnfo-brunneus, griseo pubescens, sericeus. Rostrum longitudine duplo latius, medio carina brevi planata instructum. Frons latitudine dimidii rostri. Pronotum longitudine paululo latius, fere aequaliter sed leviter convexum, coriaceum, utrinque gutta alba notatum, carina dorsali medio levissime angulata utrinque paulo convexa. Elytra ab callositate subbasali declivia, seriatim punctata, interspatiis planis, macula posthumerali alba, stria dorsali a medio ad apicem declivem ubi trans suturam eum stria alterius elytri unita.

Long. 4.3 mm.

Borneo : Matang Road, Sarawak, i.1910, 1 ♂.

Grey pubescence of upperside thin, not concealing the ground. Labiophore with a median carina which reaches to the apical margin, apex of lobes rounded off. Upperside of rostrum rugate-punctate, base somewhat impressed in middle (the impression extending on to frons), and in this depression a flat, glossy, median carina, from margin of eye a cariniform wrinkle extends on to proboscis ; a slight transverse carinula from lateral margin ; apical margin with a very small median sinus. Segment 3 of antenna as long as 2, one-third longer than 4,

5 to 8 decreasing, 8 being less than twice as long as broad, club not very strongly compressed, loose, 9 a little longer than 10 and more evenly narrowed to base, 11 as long as 10, very slightly narrower, elliptical.

Pronotum one-fifth broader than long, not strongly narrowed to apex, slightly but distinctly incurved at sides in posterior third, coriaceous, without distinct puncturation, without distinct impression, the antemedian depression being but vestigial, at apex of lateral carina a white mark projecting from underside, above and somewhat in front of this bar a round dot of the same colour, a very thin median line indicated anteriorly and posteriorly; angle of carina a little smaller than 90°, longitudinal carinula descending. Scutellum greyish white.

Elytra depressed above, but not at all impressed along suture, subbasal swelling broad but not high, there being no distinct depression behind it, a linear spot each at base of interspaces 2 and 4, shoulder-angle, lateral margin from behind shoulder to base of abdomen, a line in interspace 3 from before middle to apical declivity black-brown, the line widening to interspaces 4 and 5 before declivity, then curving towards suture where it meets the line of the other elytra, the figure of the letter U being formed; within this line a minute white median spot, and traces of several others before declivity, behind shoulder-angle a large white spot. Pygidium nearly as long as broad, rounded.

Pubescence of underside much longer than on upper: prosternum and sides of metasternum with dispersed large punctures. Forecoxae well separated; median process of mesosternum as broad as the coxa, truncate, sides angulate before apex; abdomen with lateral marginal grey spots. Base and apex of femora and tibiae grey, midfemur almost entirely grey.

In lateral aspect the specimen decreases rather strongly in thickness towards apex of elytra.

25. *Hypseus brunneus* sp. nov.

♂♀. Rufo-brunneus, supra griseo marmoratus, pronoto figura centrali transverso-rhombiformi vittaque mediana abbreviata, et elytris singulis macula postmediana magis conspicua notatis. Oculi maris subcontigui. Rostrum latum, breve, apice leviter trisinuatum. Antennarum segmentum 10^{um} aut latitudine parum longius (♂) aut subquadratum (♀). Pronotum punctatum. Elytra cylindrica, subtessellata. Dens onychiorum posteriorum obsolescens (♂).

Long. 3-3.6 mm.

Singapore (J. C. Saunders), type, 3 ♂♂, 1 ♀.—Sumatra: Siak, Patran Baroe, xii.1919 (J. B. Corporaal), a pair.—Perak (W. Doherty), 1 ♀.

Probaseis twice as broad as long, with a short basal median carina, which is sometimes obsolete, coarsely rugate-punctate, apical margin slightly undulate, almost truncate, the median sinus vestigial; on underside the labiophore rough along anterior margin, somewhat swollen, smooth and glossy at buccal sinus. Frons as broad as segment 2 of antenna (♂) or one-fourth as wide as the rostrum (♀), punctate-rugate. Club of antenna rather shorter than usually, 10 shorter than 9 and 11, in ♀ as long as broad, not triangular, 11 pale at tip. Pronotum conical, transversely convex, without distinct impressions, one-sixth broader than long, punctate, coriaceous, markings luteous grey as on elytra: a broadish median stripe from scutellum to middle, reappearing at apex as a thin line, in centre a transverse rhomboid of thin lines, at apex on each side of middle a

diffuse triangle the apex of which nearly reaches the lateral angle of the rhomboid, from near this point a line which is first oblique and then runs straight to base, another linear spot farther towards side, lateral carina bordered with luteous grey, the lateral markings somewhat variable: dorsal carina slightly convex, not angulate in middle, lateral carina extending half-way to apex, angle 90° , basal carinula descending.

Elytra not depressed, cylindrical, subbasal swelling low, the rows of punctures rather deep, interspaces slightly convex, diffusely spotted with luteous grey, alternate interspaces irregularly tessellated with brown, the brown spots larger in third interspace, in this space a largish luteous grey postmedian spot extending on to the neighbouring interspaces, a smaller sublateral spot behind shoulder and one or two lateral ones before apex. Pygidium rounded as usual, a little broader than long, grey in middle.

Grey pubescence of underside not dense, somewhat denser on metepimerum, which is brown in middle. Prosternum and sides of metasternum punctate. Median process of mesosternum narrower than coxa, angulate near apex. Knees and tarsi paler rufous than rest of legs. In ♂ the tooth of the hindtarsal claw vestigial.

26. *Hypseus varius* sp. nov.

♀. Praecedenti simillimus, rostro basi depresso, fronte capitis triente rostri paulo latiore, clava antennae brevior, segmento 10° transverso.

Philippines: Surigao, Mindanao (Böttcher), 1 ♀.

Luteous grey markings of pronotum more numerous at sides, there being a sublateral median spot from which extend one line forward and two lines obliquely back- and sideways, between this spot and the central rhomboid a longitudinal stripe which does not reach carina, between it and median stripe an oblique spot at carina, in apical area the markings more or less connected with one another, median stripe much widened behind carina. On proboscis a central half-moon, the margin of the eyes and a spot at apical angles, on head a spot in centre of frons and the greater part of the anterior portion of the occiput luteous grey; base of rostrum impressed, the impression flanked by a vestigial carina which is the prolongation of the rim of the eye; median carina vestigial, reappearing at apex as a slight swelling. Club of antenna not quite equal in length to segments 3 to 6 together, 9 not strongly narrowed to base, very little longer than broad, 10 broader than long, 11 round, nearly circular in outline. Elytra much more conspicuously tessellated, the grey dorsal postmedian spot narrow, being restricted to interspace 3.

27. *Hypseus arboreus* sp. nov.

♂. Niger, supra tomento olivaceo-brunneo vestitus, ochraceo variegatus, elytris nigro tessellatis gutta alba postmediana in interspatio tertio. Proboscis longitudine duplo latius, margine apicali leviter trisinuato, basi impressa. Frons tam lata quam quarta pars rostri. Clava antennarum sat compacta, segmento 10° subquadrato. Pronotum grosse punctatum, longitudine fere dimidio latius, angulo carinae acuto. Pygidium macula mediana magna pallide flava ornatum.

Long. 5.3 mm.

S. Celebes: Lompa-Battan, 3,000 feet, iii.1896 (H. Fruhstorfer), 2 ♂♂.

Rostrum coarsely rugate-punctate, impressed in middle of base and flattened,

before the eyes; on underside the greater portion of the lobes of the labiophore punctate; lobes of labium broad. Head coarsely rugate longitudinally, in middle of frons a small spot and behind eye a large one ochraceous. Antennae piteby, the first two segments rufous as usual, 3 as long as 2, 8 about twice as long as broad, club not quite as long as 3 to 6 together, not strongly compressed, 9 triangular in outline, longer than broad, 10 as long as broad, 11 as long as 9, elongate-ovate, subtruncate at base.

Pronotum slightly depressed before middle and along carina, markings similar to those of *H. varius* sp. nov., but greyish ochraceous and more diffuse, a median vitta interrupted by the transverse central rhombiform and an ante-median dot more conspicuous than the other markings, a spur extends upwards from grey underside in front of lateral carina; dorsal carina straight in middle, slightly convex laterally, lateral carina a little convex dorsally. Elytra half as long again as broad, depressed at base and behind subbasal callosity, which is broad, round, not tuberculiform; alternate interspaces dotted with black spots of semi-erect pubescence, third interspace with a black raised line from middle to apical declivity, in this line a conspicuous white postmedian spot and an antepical ochraceous dot. Pygidium nearly as long as broad, rather strongly narrowing apicad.

Prosternum and sides of metasternum as well as the neck of the mesosternum punctate, abdomen also with large punctures on sides, more or less in two rows; middle of abdomen strongly flattened except last segment, sides of segments 2 to 5 with broad brown diffuse stripe, on side of metasternum a large brown patch. Tooth of claw of hindtarsus present, but reduced in length.

28. *Hypseus rufitarsis* sp. nov.

♀. Niger, rostro, macula mediana ante carinam pronoti sita atque scutello albis, macula lata antescutellari flavescenti-alba. Rostrum longitudine plus duplo latius, margine apicali medio producto. Clava antennae longa, segmento 9^o latitudine triplo longiore. Pronotum inaequale, carina sat fortiter convexa medio subangulata, carina laterali recta trans medium continuata, angulo laterali acuto. Elytra tuberculata. Tarsi pallide rufi.

Long. 5 mm.

Sumatra: Palembang, 1 ♀.

Rostrum entirely silky white, this pubescence also occupying the anterior portion of frons, apical margin bisinuate, the middle distinctly projecting forward, inner margin of eye extending on to rostrum as a sort of carina, median carina short, vestigial. Frons two-fifths the width of the rostrum, slightly raised anteriorly in middle, oeciput brown, with sparse white scale-hairs, rugate like frons. Antenna blackish, segment 3 a very little shorter than 2, 8 twice as broad as long, club loose, strongly compressed, but the margins not sharp, 9 nearly linear, thrice as long as broad, slightly and not quite gradually narrowing to base, 10 almost exactly like 9, 11 broken.

Pronotum nearly one-third broader at base than long, coarsely punctate, in middle a depression the sides of which extend laterad-forward, in front of carina at each side of white spot a groove, before these grooves a rounded hump, not a tuberele. Elytra slightly flattened at suture, depressed before and behind the round subbasal swelling, strongly punctate-striate, in interspace 3 three

rounded tubercles, the largest median, the next before apical declivity, the third subapical, in apical fourth of 5 one distinct tubercle and an indistinct one, in 7 two small tubercles near the two of 5. Pygidium brownish black, a little broader than long.

Prosternum coarsely punctate, the punctures on metasternum dispersed, abdomen with some shallow punctures. Mesosternal process about as broad as coxa, truncate, angulate.

29. *Hypseus argutus* sp. nov.

♂. Rufo-brunneus, supra griseo marmoratus et guttatus, elytris nigro-brunneo tessellatis, antennarum segmento ultimo longo, angusto, latitudine plus duplo longiore, segmento primo abdominis tuberculo mediano acuto armato. Long. 4.3 mm.

Sumatra : Liberia, v. 1921 (J. B. Corporaal), 1 ♂.

Proboscis grey at eyes and in middle, sparsely pubescent elsewhere, half as broad again as long, depressed in centre of base, emarginate in middle of apex, transversely convex in apical half, with a slight transverse swelling from lateral margin; on underside the labiophore punctate except at buccal sinus, where it is glossy and convex, eariniform margins of interantennal area curved sideways, not parallel. Frons a very little broader than one-third of the rostrum. Occiput with two brown patches from eyes obliquely backwards to middle. Antenna rufous at base, segment 3 as long as 2, a little longer than 4, 5 to 8 decreasing in length, 8 twice as long as broad, club as long as 3 to 8 together, 9 and 10 triangular, 9 twice as long as broad, 10 a little shorter and narrower, 11 longer and narrower than 9, more than twice as long as broad, almost linear, but rounded-narrowed at both ends.

Pronotum only one-ninth broader than long, not uneven, the antemedian depression vestigial, finely coriaceous, with shallow punctures at sides, markings of a type found in many species: in centre a transverse rhombiform, from the anterior and posterior angles of which the interrupted median vitta extends forward and backward, the posterior median line broad, white, widened behind carina, anterior median line widening out behind apical margin, continuous with the lateral grey markings; these consist of a longitudinal line across lateral angle of rhomboid, stopping below this angle and being continuous with (or nearly) two oblique spots which run from near this point to carina, one inwards and the other outwards, the latter continued across carina, at lateral carina an elongate spot continuous with a broad sublateral line which runs from before middle to apex and anteriorly is connected with the subapical transverse extension of the semilateral grey stripe; dorsal carina feebly straightened in middle, convex laterally, lateral angle less than 90° , basal carinula strongly slanting down. Scutellum white.

Elytra cylindrical, without tubercles, rather strongly punctate-striate, subbasal swelling distinct on account of a depression before and behind it, not tuberculiform, alternate interspaces spotted with black-brown, in third interspace a median and a postmedian linear black-brown spot between which there is a whitish spot, behind shoulder and at sides before apex a whitish spot more conspicuous than the other grey markings, the elytra being nearly spotted as in *H. varius* sp. nov.

Underside grey, the pubescence densest on mesepimerum; punctures of prosternum and sides of metasternum shallow; abdomen without large punctures, near base of first segment a very sharp tubercle, which recalls certain species of *Litocerus* Schoenh. (1833). Legs uniformly rufous.

Ulorhinus Sharp (1891).

Near *Phaulimia* Pasc. (1859), but the prothorax strongly punctate above and below. The basal longitudinal carinula of the pronotum horizontal, forming an acute angle with the dorsal carina, or obsolete. Club of antenna compact or nearly, 10 not being longer than broad. Proboscis about twice as long as broad, its apical margin slightly incurved in middle or here straight. In many species the third interspace of the elytra convex or pustulate.—Besides the genotype, *U. funebris* Sharp (1891), here also belong the Japanese Anthribidae described by Sharp in 1891 (*Trans. Ent. Soc. Lond.* pp. 297–328) as *Tropideres aberrans* and *T. confinis*; further, the Palaearctic *Anthribus bilineatus* Germ. (1818), the African *Hypseus elongatus* Jord. (1901), *Apatenia analis* Jord. (1901), *Apatenia benina* Jord. (1920), and the Eastern *Apatenia parvula* Jord. (1912).

30. **Ulorhinus australiacus** sp. nov.

♂♀. Nigro-brunneus, ex parte rufus, albo et nigro variegatus, rostro luteo-grisco, pronoto ante medium transversim paulo depresso, ante scutellum luteo-albo, vitta media abbreviata luteo-alba notato, clytrorum interspatiis 3^o, 5^o, 7^o nigro pustulatis, tibiarum annulo subbasali atque apice rufis albo pubescentibus.

Long. 5 mm.

Australia: Victoria, 1 ♂, type; Queensland, 2 ♀♀.

Proboscis yellowish grey, twice as broad as long, somewhat depressed laterally, in centre an indication of a short carina, apical margin feebly sinuate in middle; on underside the central area flat, slightly depressed, with the edges cariniform. Mandible with a tooth in middle and another near base. Antenna rufous brown, short, segment 3 a little shorter than 2 and much thinner, 3 longer than 4 = 5, 5 longer than 6 = 7, 8 not quite twice as long as broad, club rather compact, not strongly compressed, 9 triangular in outline, gradually narrowing basad, 10 as broad as long, 11 ovate, the club as long as 3 to 6 together. Frons and a spot behind eye luteous grey, the former a very little over one-third the width of the proboscis; occiput brown, coarsely punctate-rugate like frons.

Pronotum one-tenth broader than long, coarsely punctate, convex, before middle a shallow depression disappearing laterally behind eye, behind it in centre a small tubercle bearing black pubescence, from this point backwards a conspicuous luteous white stripe, in middle behind apical margin a small white dash, a grey dot before middle nearer side than centre, an indistinct sublateral spot at base, sides and middle very slightly shaded with white, apex russet, before depression an indistinct dark brown arc, convex in front, interrupted by the subapical median dash; earina interrupted in middle, curved forward downward at side in a broad arc; basal longitudinal carinula obsolete on account of the rough surface.

Elytra somewhat flattened, widest at shoulders, one-sixth broader than pronotum, nearly half as long again as broad (10 : 7), almost truncate at base,

the basal margins being but slightly rounded, rather strongly punctate-striate, suture and apex slightly russet, bases of interspaces 3 and 5 grey, behind shoulder a rufous patch covered with grey pubescence, 3, 5, and 7 with four or five small black pustules set off with grey on their posterior sides, the pustule in 3 at the beginning of apical slant the largest, interspace 9 tessellated with black and grey, especially behind middle, rest of elytra sparingly shaded with grey. Pygidium semicircular, russet-grey.

Underside grey, the entire prosternum, which is long-hairy in middle, and the sides of meso-metasternum and of abdomen, in ♀ the whole abdomen, coarsely punctate: metasternum strongly convex each side of middle before coxae. Abdomen broadly flattened in ♂, less broadly in ♀. On tibiae a broad antemedian ring and the apex rufous covered with luteous grey pubescence. Tarsi brownish rufous, apices of segments more or less grey. In ♂ the claws of the hindtarsus simple, the tooth being practically absent.

31. *Ulorhinus distichus* sp. nov.

♂♀. Brunneus, ochraceo variegatus, elytris nigro-pustulatis lineola post-mediana nivea in interspatio 3^o sita notatis, tibiis griseo biannulatis. Rostrum longitudine duplo latius, medio carina abbreviata convexa instructum. Frons capitis tam lata quam quarta pars (♂) aut triens (♀) rostri. Clava antennarum compacta. Pronotum punctatum, angulo carinae obtuso. Sterna et abdomen punctata. ♂ segmento anali alveolo rotundo instructo et onychio postico edentato.

Long. 3·8–6 mm.

Ceylon, a series.

Labiphore punctate as in *Hypseus*, but the basal longitudinal carinula of the pronotum has the same direction as in *Ulorhinus*: segment 10 of antenna as long as broad. Pronotum one-half broader than long, without distinct depressions, but rather roughly coriaceous-punctate, particularly at sides, behind apical margin two blackish arches, one each side of middle, convex in front, farther back a single larger arch, at the side of which there is a minute white dot, at sides an antemedian white dot in an irregular blackish patch, the dark markings not very definite: dorsal carina nearly straight, slightly incurved in centre. Elytra with a depression before and behind the subbasal callosity, otherwise convex, the pubescence of the black dots in the alternate interspaces 3, 5 (etc.) erect, the dots looking like pustules: the white spot in third interspace very conspicuous.

Underside punctate, inclusive of abdomen, sides spotted with rufous, the apices of the femora, the grey rings of the tibiae and the greater part of the tarsi also with a rufous ground.

32. *Phaulimia augur* sp. nov.

♂. *Ph. ephippiatae* similis, angustior, oculis multo majoribus fere contiguis, carina dorsali prothoracis medio angulata.

Long. 3·3 mm.

Perak (W. Doherty), 1 ♂.

In colour close to *Ph. ephippiata* Pasc. (1859), but the rufous brown patches which are devoid of grey pubescence more extended: on pronotum the two

apical and, on each side, the two discal brown patches larger; on elytra the blackish brown basal patch as in *Ph. ephippiata*, but behind it and connected with it a squarish median patch on each elytrium between first line of punctures and fourth interspace, at the beginning of apical slant a similar patch but of the general brown tint of the ground-colour of the elytra, at the sides numerous brown spots.

Proboscis nearly twice as broad as long. Frons not wider than segment 3 of the antenna is broad, carinate. Antenna nearly reaching to base of pronotum, segment 10 as long as broad, II a little longer than 9. Dorsal carina of pronotum distinctly convex right and left, with a sharp angle in middle. Pygidium longer than in *Ph. ephippiata*; hypopygidium more deeply divided, the lobes broad, rounded laterally.

33. *Phaulimia persiba* sp. nov.

♂♀. *Ph. privae* persimilis, antennae clava brevior, segmento 10° transverso, elytris tessellatis.

Mentawai Is.: Si Oban, iv-viii, 1894 (Modigliani), a small series.

Frons rather broader than in *Ph. priva* Jord. (1895). Apical margin of rostrum medianly a little more distinctly sinuate. Segment 10 of antenna broader than long, 9 and II also shorter than in *Ph. priva*. Markings of pronotum as in that species, except that the median stripe is broader from middle to carina. Alternate interspaces of elytra distinctly tessellated, but some of the spots diffuse, in third interspace before and again behind middle a more conspicuous luteous spot, and between these two a brown linear spot. Lobes of hypopygidium broader than in *Ph. priva*.

34. *Phaulimia forficula* sp. nov.

♂. *Ph. ephippiatae* affinis, elytris basi usque ad humeros griseis macula nigro-brunnea ad gibbositatem subbasalem sita notatis, singulo elythro macula mediana cum altera postmediana arcuatim coniuncta ornato, sutura inter has maculas atque gutta anteapicali albo-griseis: hypopygidio in duos processus longos arenatos diviso.

Long. 3.3 mm.

Perak (ex coll. Vogel), 1 ♂.

Proboscis not quite twice as broad as long, and a little more than three times as broad as the frons, grey like a broad stripe along eye and an anteriorly forked occipital median line. Antenna short, segment 8 scarcely longer than broad, 10 a little longer than broad, II longer than 9. Pronotum marked with grey, as follows: a central, sparsely pubescent, transverse rhomboid with a brown spot in middle, this spot interrupting a median stripe which extends from apex (being vestigial at margin) to base and is widened into a broadish spot behind carina, as usual, a stripe from carina obliquely forward towards lateral angle of rhomboid, which it does not reach, from before this angle straight forward another stripe which does not reach apical margin, but widens out anteriorly dorsad and laterad, the lateral portion extending along apical margin, from angle of rhombiform backwards a thin line which does not quite reach carina and is slightly oblique, further lateral a round median spot, above

lateral carina an interrupted anguliform line; angle of carina rather strongly rounded.

Elytra grey from shoulder to shoulder, with a blackish brown spot on the inner portion of the subbasal swelling, this grey area extending along suture, widening behind middle to third line of punctures, then reduced again to first and second interspaces and disappearing on apical slant. the median bay filled in by a blackish brown patch which is continued around the grey sutural patch and widens behind it into another brown patch, behind which there is a grey spot at a short distance from suture, rest of elytra rufous brown, dotted with grey in the lines of punctures, in apical half three grey marginal spots, apical margin less densely pubescent grey than these spots. Pygidium evenly rounded, longer than half its basal width, brown in middle.

Underside grey; on metepisternum a brown spot. Legs pale rufous, brownish at the knees, particularly the apex of the hindfemur. Anal sternite without special structure. Hypopygidium divided into two narrow arms, which are about as long as the pygidium, spatulate, narrowest beyond middle, and bent inward from this narrow point.

Limiphaula gen. nov.

♂. *Phaulimiae* simillima, sed labiophoro trituberculato, processu mesosternali intercoxali angusto rotundato.

Genotypus: *L. corporaali* sp. nov.

The labium is divided by a shallow sinus into two short lobes. The labiophore bears a median carina which ends in a pointed tubercle in the middle of the apical margin, and the centre of each lobe is raised into a somewhat transverse tubercle hollowed out in front. The mesosternal process is longer than broad, rounded, the midcoxae not being indented. Elytra longer than in *Phaulimia*, less convex in middle. Tarsi longer.

35. **Limiphaula corporaali** sp. nov.

♂. Color *Phaulimiae alternatae* Jord. (1895). Rostrum inter antennis utrinque carinula nigra transversa notatum. Pronotum longitudine triente latius, signaturis *Phaulimiae privatae*, sed macula centrali rhombiformi magis transversa, linea mediana parum latiore. Elytra latitudine dimidio longiora, interspatiis alternis tessellatis, tertio duabus lineolis nigris conspicuis et inter has lineolas griseo-albo notato. Abdomen medio deplanatum (♂).

Long. 4.3 mm.

Sumatra: Bah Lias, xi.1919 (J. B. Corporaal), 1 ♂.

Easily confounded with *Phaulimia alternata* Jord. (1895) or *Ph. priva* Jord. (1895), the colour and markings being almost exactly the same as in the former except that the discal lines of the pronotum are somewhat thinner and the rhombiform central mark is narrower in apico-basal direction. Rostrum a little over one-half broader than long, apical margin sinuate in centre, black like the transverse, slightly cariniform, line which runs from the lateral edge above the antenna on to the proboscis. Interspace between antennal groove and buccal sinus broader than this sinus. Frons one-third the width of the rostrum. Antenna: segment 3 longer than 4, 8^o nearly as broad as long, about half the length of 7, club not much flattened, 9 triangular in outline, longer

than broad, 10 less triangular, a little longer than broad, 11 ovate, as long as 9. Pronotum coriaceous, a little rougher at the sides, carina as in *Phaulimia*, very slightly convex each side of middle, lateral angle rounded off. Elytra half as long again as broad, slightly narrowing from near base, in the tessellated interspaces the grey pubescence on the whole more extended than the dark brown spots, behind middle of third interspace a grey linear spot preceded and followed by a similar dark brown spot. Pygidium nearly as long as broad. Hypopygidium deeply divided into two broadish lobes, which are apically rounded on outer side.

36. *Disphaerona cyrta* sp. nov.

♂♀. *D. verrucoso* Karsch (1882) simillima, carina prothoracis dorsali medio antrorsum angulata.

Long. 4.7-7.5 mm.

South India: Madura, a series.

Proboscis with an apically abbreviated median carina. End segment of antenna very pale. Pronotum uneven, across middle several swellings, of which the median one is the broadest. Tubercles of elytra on the whole higher than in *D. verrucosus* Karsch (1882) from Ceylon, described as *Tropi(do)deres verrucosus* in *Berl. Ent. Zeits.* 1882, p. 388, the subbasal and the postmedian tubercle in third interspace especially larger. Lobes of hypopygidium of ♂ narrower.

37. *Disphaerona picta* sp. nov.

♂. *D. verrucellae* Jord. (1912) affinis, fronte cum rostri basi profunde concava, carina dorsali pronoti medio antrorsum arcuata atque interrupta.

Long. 4.3-5.0 mm.

Ceylon: Dikoya, 3,800-4,200 feet, xii.1881-i.1882. 2 ♂♂, 1 ♀, in Mus. Brit. ex coll. G. Lewis.

The broad impression at base of rostrum flanked by the cariniform prolongation of the edge of the eye, no median carina, before the impression the rostrum strongly convex. Pronotum with a transverse row of five tubercles, the median one being the largest, dorsal carina undulate, being convex in middle and again half-way to side, the lateral carina on an explanate hump: a dark brown stripe runs from base across second tubercle to near apical margin, turning here dorsad and joining the stripe of the other side, this stripe bounded with some whitish grey scaling here and there, such light scaling also at and between the tubercles and laterally at base. On elytra whitish grey scales at base near shoulder, forming a diffuse line which turns towards suture behind the first row of tubercles, in middle a whitish grey lateral patch and before apex a brown-black patch, suture dotted with brown-black, from inner subbasal tubercle a brown-black stripe to base, at some distance from base a transverse row of four tubercles on each elytrum, then follow some small tubercles or pustules, behind middle a very high conical tubercle, at the outer side of which there is a small one, behind the large one some pustules and a transverse subapical tubercle, sutural angle tuberculiform. Pygidium twice as broad as long, with obtuse median carina.

Abdominal segments 2 to 4 with an apical median tubercle in ♂, 5 simple in both sexes. Tibiæ with a subbasal and an apical grey ring.

Pantorhaenas gen. nov.

♂⁺. Rostrum breve, crassum, basi concavum, oculorum marginibus ut carinis in rostrum continuatis. Oculi subdorsales remoti. Carina prothoracis lateribus in arcu lato antrorsum flexa. Elytra basi truncata.

Genotypus: *P. conspersus* sp. nov.

Distantly allied to *Apatenia* Pasc. (1859), *Platyrhinus* Clairv. (1798), and *Disphaerona* Jord. (1902). The cariniform margin of the rostrum which covers the antennal scrobe is short, not nearly reaching to apical angle. Labium deeply divided. The base of the prothorax is laterally rounded in a transverse sense, the longitudinal carinula, which is horizontal, being reduced to a short spur from the tubercle into which the carina is raised at the side. Intercostal process of mesosternum broad, subvertical to middle, then sharply turned anad. The midcoxa not distinctly indented. Abdomen flattened medianly in ♂.

38. **Pantorhaenas conspersus** sp. nov.

♂♀. Niger, supra ochraceo, subtus griseo irroratus. Pronotum longitudinaliter bimpressum, medio gibbosum. Elytra subquadrata, singulo duobus tuberculis altis formam conici habentibus armato.

Long. 7-8 mm.

Borneo: Matang Road, Sarawak, xii. & i. 1 ♂, 2 ♀♀.

Proboscis twice as broad as long, coarsely rugate-punctate above and below, the median impression large, reaching to near apex, flanked by the cariniform continuation of the rim of the eye, within the impression, which extends on to the head, but gradually becomes shallower, a short median channel, apical margin indistinctly trisinate. Frons a little over half the width of the rostrum. Eye elliptical in both sexes. Antenna pitehy, reaching to base of prothorax, segment 1 longer than 2, 3 half as long again as 2, 4 to 8 gradually decreasing in length, 8 about twice as long as broad, club not strongly compressed, 9 longer than broad, triangular, 10 as broad as long, 11 ovate.

Pronotum coarsely punctate, uneven, one-fourth broader than long, the two longitudinal depressions united behind and before median swelling and anteriorly continued towards eyes, at side of the depression a small swelling; dorsal carina distant from basal margin, broadly concave, slightly convex at sides before joining a lateral tubercle, continued horizontally from the tubercle a short distance forward.

Elytra distinctly punctate-striate to apex, about one-half longer than broad, broadest at base, sides nearly parallel from base to middle, a subbasal and a postmedian tubercle high, pointed, tipped with black pubescence. Pygidium truncate-rotundate, much broader than long.

Prosternum coarsely punctate, inclusive of area below carina, metasternum and abdomen likewise punctate.

39. **Pantorhaenas xylinus** sp. nov.

♀. Rufo-brunneus, supra griseo nigro pallide cinnamomeo variegatus. Rostrum basi impressum, longitudine duplo latius. Frons dimidio rostri. Clava antennae laxa, segmento 10^o tam longo quam lato. Pronotum longitudine triente latius, tuberculo mediano alto rotundato instructum et utrinque subgibbosum. Elytra latitudine dimidio longiora, tuberculo subbasali altera post-

mediano in interspatio tertio sitis altis rotundatis paulo compressis instructa. Pygidium rotundato-truncatum.

Long. 5.4 mm.

Banguay I. (Waterstradt), 1 ♀.

Proboscis very slightly emarginate in middle, inner edge of eye extending on to rostrum as a kind of carina, the median depression broad and nearly continued to apex; the dorsal edge of the antennal groove short, not continued to apex of rostrum; interspace between antennal scrobe and eye as wide as first antennal segment. Head longitudinally rugate. On underside, the labiophore punctate except posteriorly at buccal sinus, transversely somewhat swollen, its posterior portion flat and slanting. Labium divided down to palpiger. Segment 2 of antenna shorter than 1, about one-half longer than broad, 3 half as long again as 2, 4 to 8 decreasing in length, 8 about twice as long as broad, club as long as 3 to 5 together, 9 a little longer than broad, 10 as long as broad, both narrowing from apex to base, 11 elliptical, pale, as long as 9.

Pronotum coarsely and laterally densely punctate, uneven, irrorated with greyish cinnamon pubescence (not scales), which forms a median stripe from tubercle to base; dorsal carina laterally oblique and slightly convex, ending with a short forward hook, no longitudinal basal carinula. Scutellum whitish grey.

Elytra parallel from shoulder to beyond middle, flattened in sutural area, particularly on apical slant, 10 very distinct punctate stripes, alternate interspaces convex and a little uneven, here and there dotted with brown and grey, especially the suture and interspace 5, apical slant from posterior tubercle almost entirely pale, greyish cinnamon, with a transverse brown line half-way to apex, the two tubercles of each elytrum somewhat longer than broad, rounded in lateral aspect. Apical margin of pygidium double.

Sterna and abdomen punctate; mesosternal process turned backwards at apex, as broad as the coxa, truncate-rotundate. Tibiae with a subbasal and apical grey ring (on rufous ground), segments 3 and 4 of tarsi paler than 1 and 2, 1 of foretarsus twice as long as the tibia is broad at apex.

Botriessa gen. nov.

♂♀. Rostrum brevissimum, cum capite crassissimum, apice sinuatum, sulco mediano profundo brevi. Oculi parvi, subcirculares, grosse granulosi, laterales, sub planum frontis siti. Antennae gradatim incrassatae, clava angusta. Pronotum fortiter convexum, tuberculatum, lateribus rotundatum, carina medio interrupta undulata lateribus haud antrosum continuata, carinula basali longitudinali magis ventrali separata. Elytra ovata, valde convexa, tuberculosa, basi truncata, absque margine incrassato, tredecim striis punctatis. Processus mesosternalis coxis angustior. Tarsi breves.

Genotypus: *B. sepidiopsis* sp. nov.

Distantly related to *Disphaerona* Jord. (1902) and *Phaenotherion* Friv. (1878). The small, coarsely granulated eye being situated below the level of the frons, the antennae being slender and gradually increasing to the width of the triarticulate club, the cask-shaped tuberculated pronotum and very strongly convex elytra, of which the base is straight and lacks the incrassate margin, distinguish this genus from all others known to me. I expect that intergradations between the new genus and *Disphaerona* will be discovered.

40. *Botriessa sepidiopsis* sp. nov.

♂♀. Nigra, pube cinnamomea et griseo-brunnea tecta, pronoto quinque-tuberculato, elytris ovatis quatuor seriebus tuberculorum instructis.

Long. 6.6-9 mm.

Burma: Ruby Mines (W. Doherty), a small series in Mus. Brit. ex coll. Fry.

♂♀. Black, covered with a pubescence which changes from wood-brown to cinnamon and is paler beneath than above. Head and rostrum irregularly and slightly convex together, somewhat swollen in places, especially the sides of the frons, the eye being placed in a hollow, large dispersed punctures on the whole upper surface; rostrum not quite twice as broad as long, at base a broad short groove, apical margin sinuate, cariniform in centre, a thin carina running from apex of sinus to near median groove; upper margin of antennal groove less explanate than in *Apatenia* Pasc. (1859) and allies, short, not reaching to the apical lateral cariniform margin of the proboscis; on underside the area below eye and the labiophore rugate-punctate, labiophore short, transversely convex, slightly humped at apex of sinus, separated from head; labium divided down to near base. Eye a little larger than its distance from antennal groove, nearly circular, quite lateral. Antenna not reaching base of prothorax, rufous-brown, neither the first two segments nor the club much thickened, not twice as wide as the other segments, 3 a little longer than 2 and 4, 4 to 8 decreasing in length, 8 twice as long as broad, conical, club not much compressed, a trifle longer than 6 to 8 together, 9 twice as long as broad, slightly narrowed to base, 10 one-fourth shorter than 9, but the same in width, 11 as long as 9, elliptical.

Prothorax a very little broader than long, and slightly broader at apex than at extreme base, with the sides rounded, the transverse carina projecting at sides as a tubercle; pronotum pitted with large punctures which are not very close together, a longitudinal median depression deepened in centre, at each side of it two large rounded humps, the anterior ones smaller, a small hump further lateral; dorsal carina undulate, interrupted in middle, ending with a lateral tuberculiform ridge, below this tubercle and quite separate from it a longitudinal cariniform swelling which extends from near the basal edge to beyond middle of side, being accompanied on its upper side by a groove. Scutellum punctiform.

Elytra ovate, half as long again as broad, with four longitudinal rows of tubercles and 13 rows of punctures, interspace 11 cariniform, forming the contour of the elytra in a dorsal view, projecting farther laterad than the limbal area which lies between it and the lateral margin of the elytra. Pygidium broader than long, rounded-truncate, somewhat swollen in ♂, the apical margin divided in ♀ by a transverse channel into an upper edge and a lower one.

Prosternum coarsely punctate, antecoxal area about half as long again as the coxa is wide. Intercoxal process of mesosternite much narrower than coxa, rounded-widened at apex. Metasternite punctate at sides. Intercoxal process of abdomen very broad, as in *Disphaerona verrucosus* Karsch (1882) and allies; abdomen somewhat uneven, in ♂ flattened, with the intercoxal process rough with silky hair, last segment much shorter in ♂ than in ♀. Tibiae with a grey subbasal and apical ring; segment 1 of foretarsus not much longer than the tibia is broad.

SOME CORRECTIONS

By ERNST HARTERT

BOTH Messrs. H. C. Robinson and C. Boden Kloss call my attention to the fact that the name *A. p. blythi* is antedated by a name given by them in 1922 :

"*Alcippe poioicephala blythi* Collin and Hartert, Nov. Zool. xxxiv, 1927, p. 50, a new name proposed for *Alcippe magnirostris* Walden, 1875, preoccupied by *Alcippe magnirostris* Moore, 1874, is antedated by *Alcippe poioicephala karenni* Robinson & Kloss, 1922 (*Alcippe phaeocephala karenni* R. & K., nom. nov. Journ. Asiatic Soc. Bengal, xviii, 1922, p. 563)."

Mr. W. B. Alexander writes to me as follows with regard to some statements in Nov. Zool., 1926, p. 352 :

"In speaking of *Puffinus pacificus* you say that the Australian birds are always dark-breasted. This is not quite correct. Though the overwhelming majority are dark-breasted, a few white-breasted specimens are known, as I pointed out in the *Emu*, vol. xx, p. 19. The only one I have seen myself was one collected by T. Carter at Sharks Bay, which is now in the Museum at Perth. It is specially interesting as coming from the type locality of *P. p. chlororhynchus*. I think you will be interested in this, as it strengthens your contention that *P. cuneatus* is a colour phase of *P. pacificus*.

"In writing of *Puffinus bulleri* you say that the nesting-place is unknown. In the *Emu*, vol. xxiv, p. 37, R. A. Falla gives an account of a breeding colony on the Poor Knights Island off the North Island of New Zealand. In a letter which I received from him recently Mr. Falla tells me that he has since found it breeding on several other islands off the east coast of the North Island. There is now a good series of this species in the American Museum collected off New Zealand by R. H. Beck in 1925-6. In fact, *P. bulleri* is a common species in New Zealand. I saw large numbers in the Hanraki Gulf in February 1926. The pale grey area on the back contrasting with the dark wings makes the species quite unmistakable."

THE CORRECT NAME OF THE LORD HOWE ISLAND PETREL

In *B. Australia*, ii, p. 141, Mathews adopted the name *Pterodroma melanopus* (Gmelin), *Syst. Av.* i, 2, p. 562 (1789—ex Latham, *Synopsis*, iii, 2, p. 408, ubi "Said to inhabit North America") for the large Lord Howe Island Petrel, called *Oestrelata solandri* by Salvin, in the *Catalogue of Birds*, xv. He did this because the description "all round the base of the bill, the chin and throat pale silvery grey, marked with minute dusky specks," fits the bird called *solandri*, from Lord Howe Island, well, but he disregarded the description of the feet: "legs very pale, the webs for one-third the same, the rest to the end black." This description of the legs and feet were the reason why Salvin and others rejected the name, as it did not suit the Lord Howe Island Petrel. Mathews lightly set this aside, because in the Kermadec Petrel, *Pterodroma neglecta*, the coloration of

the feet varies, from being particoloured, as described by Latham and others, to entirely blackish; this had already been stated by Buller, but more correctly by Iredale in *B. Austr.* ii. p. 149. This interesting fact, that in *Oe. neglecta* (which has also "dimorphism" of plumage, the underside being white or sooty brown, with intermediates) the colour of the feet varies, does, however, not mean that the same variation occurs in *Oe. solandri* (the *Oe. melanopus* of Mathews, not of Gmelin), in fact among the eighty specimens from Lord Howe Island, collected in 1914, not one has "particoloured" feet, the tarsus and base of toes and webs being uniform, at least never sharply particoloured, as in *neglecta*, and as described by Latham. Although the description of Latham and the markings in the figure in Phillip's *Voyage to Botany Bay* on the head agree better with the Lord Howe Island Petrel, the exact description and figure of the feet ("the legs are pale yellow, the outer toe black the whole length, the middle one half-way from the tip, the webs also correspond, the outer one being black, except just at the base; and the inner one black for about one-third from the end") is NOT that of a Lord Howe Island Petrel. There is therefore no proof whatever that the Lord Howe Island Petrel ever occurred on Norfolk Island, and it is not justified to designate Norfolk Island as the type locality for Gmelin's (or rather Latham's) *Procellaria melanopus*. Unfortunately the nomenclature of Mathews' *Birds of Australia* has also been adopted in the *Manual of the Birds of Australia*, i. p. 34 (I regret that no more parts of this handy book have appeared), and in the *Systema Avium Australasiarum*, i. p. 118. The sooner such nomenclature is cleared up, the better, therefore I have reluctantly ventured to do so. Mathews relies entirely on the description of the colour of the head, but this is not so characteristic as that of the feet. The feathers round the bill "and throat" are white, not silvery grey, and in *phillipii* "waved brown and dusky white," a coloration which is not infrequently found in *P. neglecta*.

The Petrel, which breeds in large numbers on Mt. Gower, on Lord Howe Island, must be called *Pterodroma solandri* (Gould).

There is no doubt that *Oestrelata montana* Hull, *Proc. Linn. Soc. N.S. Wales*, xxxv, p. 785, described from Mt. Gower, Lord Howe Island, is a synonym of *solandri*, though "the tarsus and first joint of inner toe horn-colour" is suspicious, but they are not described as "very light" or yellow, which they are in *P. neglecta*. Mathews' plate, taken from the type of *solandri*, shows a slight yellowish tinge at the base, not a totally different sharply divided area; in the type-specimen this yellowish tinge is barely visible. *Procellaria phillipii* Gray, *Ibis*, 1862, p. 246, described from Norfolk Island, is, however, a synonym of *P. neglecta*, and not of *solandri*.

Gmelin's name *melanopus* must either be taken as the oldest name of *neglecta*, or better quoted with a query.

Since the "Norfolk Petrel" (*Procellaria phillipii* Gray) of Governor Phillip's *Voyage to Botany Bay* is not *P. solandri*, but *P. neglecta*, there is no proof whatever that *P. solandri* ever occurred on Norfolk Island, and Mathews' designation of Norfolk Island as the type locality for Gmelin's *P. melanopus* cannot be accepted. The eggs of *P. solandri* are much larger than those of *P. neglecta*. The measurements of the eggs of *O. montana* Hull, from Mt. Gower, Lord Howe Island, agree with those collected on that island by Roy Bell, but those of Dr. Metcalle's egg from Norfolk Island are, of course, far too small for the Lord

Howe bird, *P. solandri*, and are even smaller than those of all eggs of *P. neglecta* from the Kermadec Islands, as Mr. Hull already mentioned. It seems to me that it must have been the egg of *Puffinus pacificus chlororhynchus*, which breeds in great numbers on Norfolk Island, and which lays its egg in a deep burrow, while *Oc. neglecta* lays the egg in the open, not in burrows. If this is so, the discrepancies which puzzled Hull disappear: probably the birds and the egg were brought to Dr. Metcalfe and the latter were wrongly identified. Probably Dr. Metcalfe did not catch the bird with his own hands, or did not take the eggs personally, and a mistake is easily made on breeding-places of sea birds, where several species nest on similar ground.

ON SOME LEPIDOPTERA OF SPECIAL INTEREST, WITH REMARKS ON MORPHOLOGY AND NOMENCLATURE

BY DR. KARL JORDAN

(With Plates I-III.)

I. WHAT IS *PERROTTIA TAMATAVANA* OBERTH. (1922) ?

THE genus *Somabrachys* Kirby (1892) is restricted to a South Mediterranean belt extending from Morocco to Palestine. Its relationship is with the *Megalopygidae*, a family not found outside the Western Hemisphere. *Somabrachys* with its peculiar head and forelegs and wingless ♀, therefore, stands quite isolated in the fauna of the Old World,¹ and it is very natural to ask as to whether there really are no forms allied to that genus among the great mass of Old World Lepidoptera. Charles Oberthür (1922) believed that he had indeed found such a species among the Malagassic material of his collection. He said of the ♂ of a moth obtained by Mons. Perrot at Tamatave that it seemed to him to be a Megalopygid related to *Somabrachys*, and he erected for its reception the genus *Perrotia* with *P. tamatavana* sp. nov. as genotype, differentiating the new genus from *Somabrachys* by the ♂-antenna (♀ unknown) being much less strongly pectinated and the abdomen more robust and distinctly longer: *Perrotia tamatavana* Oberth., *Ét. Lép. Comp.* xix. p. 153, tab. 545, fig. 4587 (1922).

Being interested in *Somabrachys*, I asked Herr C. Höfer, who was in charge of the collection after Charles Oberthür's death, to lend me the specimen for examination, which he very kindly did. From a scrutiny of the figure, especially of the neuration of the hindwing, I expected the species to belong to the *Syntomidæ* or perhaps *Arctiidæ*, and was much surprised that this surmise was quite wrong.

Perrotia belongs to the *Zygaenidæ*, and, in spite of the strong body, is closely related to the continental African genus *Anomocotes* Feld. (1874, indescr.) of the subfamily *Phaulinæ*. It shares with *Anomocotes* and allies the hairiness of the body, the almost complete absence of the mouth-parts, the absence of tibial spurs, the development of the chaetosema behind the antennae into an uninterrupted transverse bar, and the absence of the ocelli and retinaculum. On the other hand, the stout and comparatively short branches of the antenna, the stout body, and the neuration abundantly differentiate *Perrotia* from all the other *Phaulinæ*.

The stoutness of the body, and to some extent also the shape of the wings of *P. tamatavana*, recall the Amurian *Pseudopsyche* Oberth. (1879); but in that genus the palpus, retinaculum, and mid- and hindtibial spurs are present, and the neuration also is quite different.

The antenna of *Perrotia*-♂ is bipectinate to the apex, the longest branches being less than twice the length of a segment of the shaft; both the branches

¹ For *Psycharium pellucens* H.-S. (1855), which Aurivillius has placed among the *Megalopygidae*, cf. p. 135.

and the shaft are scaled on the upperside (but most of the scales are fallen off in the unique specimen), the sensory cilia being restricted to the under surface; dorsally at the apex of the branches there is a stiff bristle, which is most distinct on the distal segments. The frons is not quite twice as wide as the eye is high (measured horizontally in frontal aspect). The eye is large, being strongly convex from the head and extending close to the antenna. The chaetosema is of even width from side to side, being slightly narrowed at the ends. Below the long hairs of the abdomen there are short hairs, but no spines (in some species of *Anomocotes*, for instance in *A. nigrovenosus* Butl. (1893) the abdominal tergites are covered with long strong spines, as in many *Megalopygidae*). The soles of the tarsi bear some weak spines; the pulvillus of the claw-segment is large and the paronychial lobe broad.

Neuration (Pl. I, fig. 1): forewing with 3 subcostals, of which SC^1 originates close to the apex of the cell, the other two are on a long stalk, the anterior branch, SC^1 , ending in the costal margin and the lower branch, SC^2 , in the distal margin: the upper cell-angle acute: the vein in the cell quite distinct, being forked at the apex, the upper branch of the fork running straight to the angle of the discocellular D^2 and the lower branch ending above middle of D^1 ; R^1 on a short stalk with the subcostals, and R^2 near to but separate from R^3 ; M^1 nearer to R^3 than to M^2 , which branches off at two-thirds of the cell; lower cell-angle (at base of R^2) obtuse; cross-vein D^2 very obtusely angulate, about as long as D^1 , thrice as long as D^3 .—In the hindwing C and SC are coincident to beyond three-fourths, the anterior cell-angle a very little beyond middle of wing, SC^2 therefore on a long stalk with C ; R^2 indicated as an undulate fold near cell, emanating from the angle of the cross-vein: R^2 and R^3 near together but separate, cross-vein D^2 transverse, not oblique, M^1 nearer to R^1 than to M^2 .

Scales of wings nearly all bidentate, some tridentate, especially at distal margin and in fringe of distal margin, most of the upper scales long, many hair-like.

As only two species of *Zygaenidae* were known from Madagascar, we are grateful to Ch. Oberthür for having drawn attention to this third species. The three Malagassic species represent three very different genera, and we may therefore be fairly sure that more will be discovered on that island. The types of "*Syntomis*" *culiculina* Mabille (1878) and of *Sthenoprocris malagassica* Hamps. (1919) being in the collection of the Tring Museum, I take this opportunity to correct some slight errors in Hampson's generic diagnosis, and to propose a new genus for the reception of Mabille's species.

Sthenoprocris Hamps., Nov. Zool. xxvi, p. 275 (1919).

The only known specimen has no proboscis, there being a hole in its place, the palpus is reduced to a prominent tubercle, at the base of which there is a small one, and the oral margin of the head is rather sharp, the buccal organs agreeing best with those of the *Phauidinae*. Ocellus well developed. Chaetosema triangular, swollen, not reaching forward beyond the ocellus and transversely extending nearly to middle of neck, the two chaetosemes almost touching each other. Antenna well separated from eye, the space in between being covered with broadish scales which lie flat. Legs long and slender, without

tibial spurs, foretibia as long as forefemur, proximal half or two-thirds of first tarsal segment and base of the following two or three segments white.

Ischnusia gen. nov.

♂♀ Scaling smooth. Proboscis long; palpus short, porrect, pointed. Frons convex. Eye a little longer than broad. Antennae well separated from eye, bipectinate, shaft and branches scaled above, in ♂ the longest branches nearly equalling in length three segments of the shaft, and all the branches basal, in ♀ the branches apical or subapical and the longest a little longer than one segment; branches of distal segments gradually shorter, those of end-segment more or less united, the tip of the antenna appearing truncate, shaft not narrowing to apex, in ♀ slightly broader at apex than in middle. Chaetosema triangular, lateral, extending in between the ocellus and eye. Foretibia without epiphysis, much shorter than forefemur, mid- and hindtibiae with an apical pair of short spurs and with very few spines; in ♂ a tuft of white hairs at apex of prosternum in between forcocoxae.

Neuration: forewing with 5 subcostals, SC¹ from long before apex of cell, SC² from stalk of SC³ at one- to two-eighths, SC³ forking at three-eighths, SC⁴ from cell well below upper angle, upper three cross-veins obsolescent, upper radial R¹ from middle of cell-apex, R² above lower cell-angle, R³ and M¹ more or less close together from angle of cell, M² more distal in origin than SC¹.—In hindwing C and SC coincident, upper angle of cell very much more projecting than lower, R¹ from below angle, cross-vein D¹ inclining costad-basad, D² very long and strongly oblique, lower angle of cell very oblique, R² to M² from cell, R³ and M¹ more or less close together, partition M¹-M² shorter than the cell is broad at M², SM¹ obsolete; from upper cross-vein a short spur extends into cell, above R² the long cross-vein angulate.—In both wings the position of the branches variable.

Easily recognised by the absence of the foretibial epiphysis, the short tibial spurs, and the venation.

In the only species known to me, *I. culiculina* Mab. (1879), the proboscis is orange and the base of the abdominal margin of the hindwing white. The specimens from the collection of Ch. Oberthür comprise two ♀♀ (and some wings) from coll. Mabilite, one of which I have selected as type, two ♀♀ from Tamatave, and a series from Fénéric, among them two ♂♂; there are also several ♀♀ and one ♂ from South Madagascar.

The small black moth described by Mabilite from coll. H. Grose-Smith, in *Ann. Soc. Ent. Fr.* 1879, p. 348, as *Aglaope ? perpusilla*, was certainly not an *Aglaope* Latr. (1809). The description being very superficial, and the author himself confessing that the position of the "elegant species" was uncertain, we can as yet do nothing with the name. The specimens of moths described by Mabilite from H. G.-Smith's collection seem to have disappeared. When we wrote the "Revision of Sphingidae" we asked Grose-Smith whether he knew where they had gone, but he could not give us any information. In the description of the hindwing of *A. ? perpusilla* there is evidently a slip; it reads: "Alae posticae margine antico usque ad medium alae nigro; caetera pars nigra est, fimbriaque nigra." I think "pars nigra" perhaps should read "pars vitrea." The specimen is said to be a ♂ with simple antenna.

11. ON *PSYCHARIUM PELLUCENS* H.-S. (1855).

The genus *Psycharium* H.-S. (1855 and 1858, indescr.) was left hanging in the air by its author, who had no specimen when he wrote the short notes to his plates and did not know where to place the genus. Aurivillius referred to it in *Iris*, vii, p. 189 (1894) as belonging to the *Megalopygidae*. This casual remark evidently was overlooked by Hampson, who described and figured *Psycharium pellucens* from the Cape Colony as an Arctiid in *Lep. Phal.* iii, p. 451, no. 2045, text-fig. 190 (1901), being misled by his erroneous figure in which vein $SM^1 = 1c$ is omitted in both wings. He again mentioned the species as being an Arctiid in *Ann. South Afric. Mus.* ii, p. 63 (1902). In Wagner's *Lepid. Catalogus* an attitude of absolute impartiality or neutrality is adopted, Dyar and Strand (1913) following Aurivillius in placing the genus with the *Megalopygidae* with the remark "Kapland [sec. Spec. (Strand)]." and later on Strand (1919), faithfully copying Hampson, even as to the erroneous date of Herrich-Schäffer's figure, enumerating *Psycharium* among the *Arctiidae*. Why Dyar and Strand (1913) date the genus from 1855 and the species from 1856 is a puzzle, if the difference in date is not due to a mere pen-slip. Since 1919 nobody seems to have referred to *Psycharium*; its position, therefore, must be considered to have remained uncertain. We have at Tring only four females, from Cape Colony and Natal. A comparison of these specimens with the American *Megalopygidae* has convinced me that *Psycharium* is neither a Megalopygid nor an Arctiid. The absence of the basal tympanal organ of the abdomen and the presence of a chaetosema and of vein $SM^1 = 1c$ are sufficient evidence that *Psycharium* is not related to the *Arctiidae*. If Hampson had noticed that vein $1c$ was present, he would have placed the genus among the Megalopygids, as did Aurivillius; his latest key to the families, in *Nov. Zool.* 1918, proves that. The combination of characters observed in *Psycharium* seems at first sight to support the Aurivillian opinion: Proboscis absent, palpus reduced, ocelli absent, antenna (♀) setiform, slightly bidentate, chaetosema present, tegula short, no tympanal organ at base of abdomen, no epiphysis on foretibia, mid- and hindtibial spurs short, one pair on hindtibia, claw-segment with paronychium and pulvillus, claw without tooth, both wings with vein $SM^1 = 1c$ present and the cell-vein distinct, C of hindwing coincident with cell to near apex of cell; body and wings hairy. This diagnosis fits the Megalopygids very well; but it applies equally well to a number of *Zygaenidae* in which C of the hindwing is coincident with the cell. Hampson knew this fact, but neglected to take cognizance of it in his key. The similarity in structure between certain *Zygaenidae* and the *Megalopygidae* is so close that one might very easily mistake one for the other if there did not exist certain differences in details which separate the African *Zygaenids* from the American *Megalopygids*: The frons of *Psycharium* is as broad as in *Anomoeotes* and allies, being broader than the eye, and not narrower than it, as it is in the *Megalopygidae*; the antenna (♀) is flattened beneath and broader than high instead of being compressed distally as in the *Megalopygids*, and each segment is ventrally sinuate at the apex, the angles projecting distad; the chaetosema, which is small and lateral in the *Megalopygids*,¹ is in *Psycharium* a belt extending from side to side, similar to, but not identical with, that of *Anomoeotes*; the mesonotum is anteriorly depressed in the middle as in *Zygaenidae*,

¹ *Aidos* Hübn. (1822 ?) has a chaetosema like that of the *Megalopygidae*.

whereas in the *Megalopygidae* it is anteriorly subearinate in the middle, with a depression at each side of the carina ; and in the forewing the cell-vein is apically forked as in *Zygaenidae*, whereas in the *Megalopygidae* it is simple, the cell-apex being very deeply inangulate in that family.

For these reasons I regard *Psycharium* to be a Zygaenid allied to *Anomoetes* of the subfamily *Phaulinae*. This subfamily being well represented in Africa, there is nothing anomalous in the occurrence of *Psycharium* on that continent. The abdominal tergites are spinose under the long hair, as is the case in *Megalopygidae* and many *Phaulinae*.

III. ON *COSSUS* (?) *MULTIPUNCTATA* DRUCE (1887) AND SOME OTHER *EPIPYROPIDAE*.

The inducement for the writing of the present article on *Epipyropidae* was the receipt of a peculiar species of this family from Eastern Bolivia, where José Steinbach had bred a series of specimens from larvae living on a lantern-fly. The species is evidently identical with the one described by Druce from a single female as *Cossus* (?) *multidentata* in *Biol. Centr.-Amer.*, Het. ii, p. 230, tab. xxiv, fig. 9 (1887), from Chiriqui, now in the Berlin Museum, and placed by Dyar and Strand, in Wagner, *Lep. Cat.*, 16, p. 34 (1913), with a question-mark under *Epipomponia*. The position of *Cossus* (?) *multidentata* has remained doubtful. In order to ascertain, if possible with our present very limited knowledge, to which of the various genera of *Epipyropidae* the species should be referred, I have compared the material of this family contained in the British Museum and in our own collection at Tring. The result is not satisfactory, (1) because many of the species described are not available, and (2) because the differences on which the genera hitherto proposed for species of *Epipyropidae* are chiefly founded are not reliable. The diagnoses of the genera are almost exclusively taken from the neuration, which a closer examination proves often to be so different in individuals of the same species and even in the right and left wings of the same specimen that according to the generic diagnoses sometimes one specimen of a species, or the left wings, would belong to one genus and another specimen, or the right wings, to a second genus. The genera, therefore, require revision ; but for that task a much larger material would have to be compared than I have seen. The definition of genera is rendered particularly difficult in this family on account of the great simplification and the resulting uniformity in structure due to the loss or reduction of certain organs in all the species known to me.

Before proceeding to describe the new forms contained in the Tring Museum and to comment on some others a few words on the general characterisation of the family and on the affinities of these interesting moths with semi-parasitic larvae will not be out of place. The family may be defined as follows :

Mouth-parts reduced to a median projection consisting of a short basal segment and a longer, conical, apical segment which bears a tuft of scales (Pl. II, fig. 23) and shows a slight indication of a longitudinal median groove or division ; above this buccal tuft a transverse naked swelling as remnant of the labrum. Ventral margin of frons sinuate. Ocelli absent. No chaetosema. Antennae bipectinate in both sexes, branches apical, shorter in ♀ than in ♂, scaled on the dorsal side, as is the shaft. No epiphysis on foretibia, no spurs on mid- and hind-tibiae ; no pulvillus and paronychium on claw-segment, claw without tooth,

sole of tarsi with very few weak bristles, but with pale (sensory) hairs, particularly numerous in ♀. In ♂ the last abdominal tergite (Pl. II, figs. 18-22, x.t.) not modified into an uncus, being similar to an ordinary tergite, but with the margin specialised.

Wings : retinaculum absent in both sexes, frenulum present, similar in the sexes, simple, spiniform.—In forewing the veins from the cell, or one or two from beyond cell or absent ; in cell two veins, both simple at apex (not forked), sometimes vestigial, the anterior one proximally joining the subcostal : SM¹ present, SM² vestigial or absent.—In hindwing SC' free from base, or connected with C by a bar, this bar subbasal and directed distad, or placed at the apex of the cell and either directed basad or transverse ; one thin cell-vein, which is not forked distally ; SM¹ present, but thin and usually partially vestigial, SM² varying from being distinct to being absent.

This description does not fit any other Lepidopteron. If we take the neurulation of the hindwing as a guide in ascertaining the relationship of the *Epipyropidae*, the full complement of veins of fig. 17 with a subbasal bar between cell and costa points to the *Gelechiinae* amongst the *Tineidae* (s.l.) as well as to the *Cossidae* and *Dalceridae* among the "Macros." The structure of the antennae, however, and the reduction of the mouth-parts, tibial spurs, etc., remove the *Epipyropidae* from the *Tineidae* and place them near the *Dalceridae*. I look upon them as an early branch of this family. In the reduction of the mouth-parts and in the absence of the retinaculum and tibial spurs the *Epipyropidae* are more advanced than the *Dalceridae*, the reduction probably being due to the semi-parasitic life of the larvae ; on the other hand, in the anal tergite of the ♂ and in the neurulation the *Epipyropidae* represent a more generalised type, but with a strong tendency towards the loss of veins.

Some stages in the process of the reduction of the number of veins in the forewing are illustrated by figs. 2 to 6 on Plate I, taken from *Epipomponia multipunctata*. In fig. 2 (♀) the full number of veins is present, and all the subcostal (SC'), radial (R), and median (M) branches arise independently from the cell. Fig. 3 (♂, left wing, apex missing) differs in SC' being stalked with SC² ; in the right wing of the same specimen, fig. 4, the basis of both SC' and SC² are shifted distad and are obsolescent. In a second ♂, fig. 5, SC' is absent from the left wing and SC² stalked with R¹, while in the right wing, fig. 6, both SC' and SC² are lost. In the hindwing of *E. multipunctata* it is particularly the instability of the bar connecting SC' with C which is interesting. This bar may be complete, fig. 7, or partially obsolete, fig. 8, or entirely absent, fig. 9. Stages figs. 7 and 9 occur even in the same specimen, fig. 11 representing part of the venation of the left hindwing of a ♀ with B well developed, and fig. 12 the right wing of the specimen with the bar absent. In fig. 12 the costa bears a small spur on the costal side : this spur occurs rarely, but is sometimes longer than in fig. 12. One of our ♀ shows an additional vein on the forewing between R² and M¹, fig. 10.

A further reduction in the venation of the hindwing is illustrated by figs. 13, 14, and 15, taken from three species of *Epipyrops*. In fig. 14, *E. atra* Pagenst. (1900), SC' is complete to base and connected with R¹ by a cross-vein ; in *E. malagassica* sp. nov., fig. 15, SC' is entirely free, but proximally obsolete ; and in *E. doddi* Roths. (1906), fig. 13, SC' is entirely absent.

1. **Epipyrops pallidipuncta** Hamps. (1896).

♂. *Microlimax pallidipuncta* Hampson, *Fauna Brit. Ind.*, Moths, iv, p. 484, fig. 256 (1896) (Ceylon).

W. H. T. Tams has correctly removed this species from the *Limacodidae* and placed it with the *Epipyropidae* in the collection of the British Museum. The venation of the hindwing is quite incorrect in Hampson's figure, and his description of it is evidently taken from that figure.

2. **Epipyrops doddi** Roths. (1906).

This species from Queensland may be identical with one of the seven species described by Perkins from Queensland and New South Wales. The forewing has only 4 subcostals, and in the hindwing, fig. 13, SC is missing. The last abdominal segments of the ♂, fig. 21, will probably suffice for the correct determination of the species; the clasper, Cl, has a convex ventral surface and is distally gradually produced into a strong, conical, pointed tooth; above the clasper a broadish lobe of the anal segment (x.t.) is visible, the outline of the apical margin of this segment being more or less reversed lyrriform.

3. **Epipyrops atra** Pagenst. (1900).

♂. *Orygia atra* Pagenstecher, *Lep. Bismarck-Arch.* ii, p. 41, no. 56 (1900) (Neu Pommern).

The unique specimen on which this species was based is in the Tring Museum. It agrees closely with *E. doddi* in colour, size, and shape, but the forewing has 5 subcostals, the subcostal SC² of the hindwing is present, fig. 14, and the posterior abdominal segments of the ♂, fig. 20, are different; the clasper Cl is bulbous and bears on the inner side a short process, which is denticulate at the apex; the anal tergite (x.t.) has, on each side, a deep sinus, which separates a narrow lobe from the main portion of the segment. Frons much narrower than in *E. doddi* and the eye correspondingly larger, being broader (measured transversely in frontal aspect) than the frons.

4. **Epipyrops malagassica** sp. nov.

♂. Similar to the previous species, but the outer and posterior portions of the forewing clayish ochraceous. Frons as broad as the two eyes together (measured transversely in frontal aspect). Antenna with 11 bipectinated segments inclusive of apical one, the longest pectinations as long as three segments of the shaft. Forewing, fig. 15, somewhat narrower than in the two previous species, with a full complement of veins from the cell, both cell-veins obsolete; fringe of distal margin dark brown, contrasting with the paler-coloured upper surface of the wing. Hindwing narrow, SC² entirely free, being connected neither with C nor with R¹, proximally obsolete; D¹ comparatively longer than in *E. doddi* and *E. atra*, and D¹ shorter. Abdomen missing.

Length of forewing: 6 mm., breadth 2.7 mm.

Madagascar: Diego Suarez, 12.vii.1917 (G. Melou), 1 ♂.

5. **Epipomponia multipunctata** Druce (1887). (Pl. III, figs. 25-27.)

As this species has the same style of colouring as *Epipomponia nawai* Dyar (1904), which is known to me only from the figures in Nawa's *Insect World*, we may assume that it belongs to the same genus,

♂. Dull greenish black above, with hardly any gloss, the veins black; on underside the posterior area of the forewing and the entire hindwing except the costal area grey, faintly metallic. In ♀ the forewing above glossy metallic greenish blue, the veins and numerous, variable, transverse bars black; hindwing above and the whole underside almost uniformly greenish blue black, with much less gloss than the upperside of the forewing. Body a little more glossy than the hindwing.

Frons not quite as broad as the two eyes together (measured horizontally in frontal aspect). Antenna with more than 20 bipectinated segments, in ♂ probably 22 (tip broken), the longest branches about equalling four segments of the shaft, in ♀ 22 to 24 segments, the branches somewhat shorter and thicker than in ♂; scaling of distal portion of shaft erect, compressed. For neuration cf. figs. 2 to 12: forewing with 3 to 5 subcostals, SC^1 from cell or from SC^3 or absent, SC^5 from cell, or from R^1 , or absent; in hindwing SC^2 always present and connected with R^1 by an angulate cross-vein D^1 , usually also connected with C by a bar which is directed costad-basad, occasionally a spur of variable length from C costad-distad.

♂. Apical margins of anal segment (x.t.) approximated as in fig. 19, there being a widening of the slit above and below a short median nose (fig. 18). Clasper (Cl) with broad base, distally produced medianwards into a long, sharply pointed, process.

The larva lives on *Laternaria ignifera* Germ. (1821) and is entirely covered with the waxy exudation of the host. It does not essentially differ from that of *Epipyrops anomala* Westw. (1876), except in the mandible being simple instead of bifid. The cocoon (fig. 27) is dense but soft, and is fastened on to the bark of the Chiriguano tree (*Simarouba glauca* DC. 1811), on which the lantern-fly lives.

Bolivia: Santa Cruz (José Steinbach). The moth is on the wing in February. —Mr. Steinbach is to be heartily congratulated on having succeeded in breeding this species.

6. *Epipomponia elongata* sp. nov. (Pl. III, fig. 28.)

♀. Oily bluish green; along costal margin of forewing, above, and near base glossy metallic bluish-green scaling forming indefinite spots, a thin marginal line and a portion of the fringe likewise glossy metallic, but more golden green. Underside of buccal tuft and the throat more or less white.

Frons as broad as the two eyes together (Pl. II, fig. 23), somewhat concave medianly in front of the antennae. These more roughly scaled than in *E. multipunctata* both on the shaft and the branches, the distal portion of the shaft bearing a high crest of scales, 12 segments bipectinate, the longest branches about as long as three segments of the shaft.

Forewing (Pl. II, fig. 24) nearly three times as long as broad; 10 veins from the cell, R^1 and R^2 farther apart than in *E. multipunctata*, the angulate cross-vein D^2 being longer than in that species. Hindwing likewise elongate, more than twice as long as broad, subcostal SC present, not connected with C .

Length of forewing: 14.6 mm., breadth 5.5 mm.

One ♀ without locality, presumably from South America. The specimen has been in the collection for more than thirty years and was put aside in the

hope that another with locality would come to hand. But the specimen unfortunately has remained unique.

Anopyrops gen. nov.

♂♀. Frons one-third as broad in middle than the two eyes together (in frontal aspect). In proximal half of hindwing of ♀ C connected with cell by a bar which is directed from cell distad, in ♂ this bar vestigial (figs. 16, 17).

7. **Anopyrops corticina** sp. nov. (Pl. III, figs. 29, 30.)

♂. Antenna with twelve segments bipectinate, the longest branches as long as six segments of the shaft. Body and wings dark drab brown, frons, antenna, underside of head and body, abdominal margin of hindwing above, base and hind margin of forewing beneath and the underside of the hindwing except costal area white. Thorax, above, mixed with grey. Forewing (Pl. II, fig. 16) very broad, strongly rounded-expanded behind, a full complement of veins, SC^2 of forewing nearer to SC^1 than to SC^3 ; in hindwing a feeble subbasal fold connecting C with cell.

♀. Much larger than ♂, distal margin of forewing more convex, hindwing more strongly rounded, bar between C and cell of hindwing well developed, either subbasal as in fig. 17, or much nearer middle of cell. Longest branches of antenna about as long as three segments of the shaft. Drab brown; forewing above with numerous small white dots; on underside both wings paler than above, with diffuse whitish dots, abdominal margin of both wings washed with white. SC^2 of forewing nearer to SC^3 than to SC^1 .

Length of forewing: ♂ 8.5 mm.; ♀ 13.5 mm.

French Guyana: St. Jean de Maroni, 1 ♂, type.—Surinam: Aroewarwa Creek, Maroewym valley, v. 1905 (S. M. Klages). 2 ♀♀.

IV. ON *ARCTIOCOSSUS ANTARGYREUS* Feld. (1867).

As Felder left the generic name *Arctiocossus* without a definition in words and as his figure on Pl. 82 of the *Reise Novara* is scarcely sufficiently accurate for the recognition of the species, the position of this apparently rare South African Cossid has remained somewhat doubtful. The type is in the Tring Museum. The figures in our two copies of the *Reise Novara* do not exactly agree with each other or with the specimen. The whole centre of the mesonotum of the type is black mixed with grey, the hair-scales forming a tuft at the end of the mesonotum. The cell of the forewing, on the upperside, is white, this stripe basally gradually extending to the costal margin, which it reaches at base, where it expands to the second submedian vein; there are thin black streaks on the submedian veins, three broader streaks between R^1 and M^2 , and a number of small black spots and specklets at and near the apex; the specimen being somewhat worn it is possible that it originally had a greater amount of black than it shows in its present condition.

Palpus slightly ascending, reaching to near middle of frons. Between the antennae a long tuft. Antenna bipectinate to apex, the branches scaled above, rather thin, but regularly curved, the longest as long as seven segments of the shaft. Epiphysis of foretibia spiniform, very sharply pointed. Hindtibia with two pairs of spurs. Claw-segment without paronygium and pulvillus.

No retinaculum on costal vein. For neuration compare Pl. III, figs. 40, 41: SC^1 of forewing from about middle of cell, SC^2 from areole, SC^3 a little beyond areole and SC^4 and SC^5 stalked, R^1 from areole, R^2 and R^3 close together but separate, cell-vein forked, but upper branch vestigial. In hindwing C free from base, not connected with cell by a bar, SC^2 and R^1 on a long stalk, R^2 and R^3 close together from lower cell-angle, M^1 near cell-angle, apex of cell deeply angulate, cell-vein forked.

In the *Erklärung der Tafeln*, p. 2, Felder misspelt the specific name *antagyreus*.

V. ON *EUMESIA SEMIARGENTEA* FELD. (1867), WITH REMARKS ON THE NOMENCLATORIAL STATUS OF ARTEFACTS AND ON THE WING-BASES AND TEGULAE OF LEPIDOPTERA (Pl. III, figs. 31-9).

At the meeting of the Entomological Society of London on 2nd June 1926 I exhibited the type of *Eumesia semiargentea* described and figured by Felder in *Reise Novara, Zool.* ii. p. 597, no. 875, tab. lxxix, figs. 17, 18 (1867). My remarks made on that occasion and published in *Proc. Ent. Soc. Lond.* 1926, p. 18, require amplification.

In the opinion of Felder, *E. semiargentea* was an uncommonly strange Lepidopteron, combining the characters of Satyrids with those of Hesperids. He considered it to be the long-looked-for missing link between those two families and erected for it a new family *Eumesiidae*. Subsequent authors have taken no notice of the characters described at length by Felder. Butler, *Ent. Mo. Mag.* vii. p. 96 (1870), says: "I do not see that this genus differs much from *Cyclopides* and *Carterocephalus*; it certainly does not link the *Satyrinae* and *Hesperidae*." Butler speaks as if he had Felder's species before him; in reality he had a specimen in the British Museum which he identified as being Felder's species. I should like to emphasize the fact that in using a name we employ it for the specimens before us if we have any; that seems to be self-evident, but there are nevertheless systematists who maintain on the contrary that a name employed at any time always includes the original specimens on which that name was based. As misidentifications are very frequent and lead sometimes to great confusion it would be advisable if biologists in employing for non-typical specimens a name previously published, *X-us albus* Smith (1900), should use some such saving clause as "identified as" *X-us albus* Smith (1900).

Watson (1893), as well as Mabille (1903), gives a diagnosis of *Eumesia*. The former states¹ that his work is based on the specimens in the British Museum. That is to say, the name *Eumesia* Felder quoted by him does NOT include Felder's specimen or Felder's concept of *Eumesia*. Mabille's diagnosis is evidence to the same effect.² Neither Watson nor Mabille refer to the Satyrine characters of *Eumesia* described by Felder, nor to the fourteen veins in the forewing of the type, and yet Felder's specimen as I find it in the collection agrees with the original diagnoses of the family, genus, and species apart from minor errors of observation. The specimen presents, indeed, a combination of Satyrine and Hesperid characters as stated by Felder, but it is a combination far different from what the author of *Eumesia* supposed it to be.

¹ In Watson's diagnosis a misprint occurs: vein 3 in line 7 of the description and the second vein 3 in line 10 should read vein 2.

² Mabille states that the hindtibia has two pairs of spurs; there is only one pair in the type and in the British Museum specimen.

When speaking of the creation of a new genus by an author, we mean to say that he has described a generic concept and given a name to it, not that he is the creator of the specimen or specimens on which the concept is based, unless it is a case of hypothetical specimens the names of which have no standing in Nomenclature. The Felderian concept of *Eumesia* was taken from a specimen, but I think Felder should not be held responsible for the specimen. He believed it to be the product of Nature, while in reality it was a creation of man. It is an artifact: the head and abdomen belong to a small Satyrine butterfly and are glued on to the thorax, as is plainly visible under the binocular. Such things will happen as long as outward appearance is one of the main considerations of the lover of Lepidoptera. We cannot attach much blame to the author of *Eumesia* for the mistake: his means of detecting the fraud were much inferior to ours, and at that time scientists might very well have expected intermediates to exist between the Satyrines and Hesperids, whereas for us such an assumption is utterly impossible.

As the specimen bearing the name *Eumesia semiargentea* Feld. (1867) consists of two species the questions arise: (a) What is the status of Artifacts in Nomenclature? and (b) how do we know that the thorax and wings of the Felderian specimen belong to the *Hesperiidae*?

a. *Artifacts.*

Dealing with nature, not with fiction, naturalists base new species on specimens, or on previous descriptions of specimens, or on previous figures of specimens, or on a combination of the three. Descriptions and figures, although meant truly to represent the subject the author or artist had before him, always suffer from a personal human element, the potentiality of error of observation and of inadequacy of expression. The descriptions and figures are full of errors of commission: author and artist deceived by appearances, by light, by a passing or permanent defect of their senses or mind, have again and again seen something which is not as they see it or which is not what they believe to see, and thus have added to the specimen described or depicted something which is foreign to the specimen.

All of us know, further, that the descriptions and figures, even if approaching perfection, are not sufficient. We require as an essential part of diagnostic work a statement of the locality where the specimen was obtained, and many of us, deceived by a wrong label, or misinterpreting inadequate labels, have given a locality foreign to the new species and thus have added something to the specimen which did not belong to it.

In such cases of incorrect description, faulty figure, wrong locality, the error of commission does not invalidate the name. For instance, if an author diagnoses a new genus *X-us* of Lepidoptera as being distinguished by spinose tibiae and it is subsequently discovered that the tibiae are spineless, the name *X-us* does not sink on that account, although the author has added spines to the specimen and thus turned it into an artifact, something which does not exist in nature. It cannot be otherwise, for if the names of such artefacts of descriptions and illustrations—artificial concepts—were to be treated as invalid, rigorously considered a very large proportion of the names would have to be rejected. We must be clear on this point that diagnoses and figures must be

taken as approximately and not as absolutely correct and, therefore, as requiring interpretation.

If we now turn to specimens of which missing portions have been replaced so that the specimens deviate in essentials from the products of nature, what is the status of the name given to such an artefact? The "mermaid" one used to see exhibited at fairs and which consisted of a small seal with the head replaced by that of a monkey may be taken as an example. As the Rules of Nomenclature say that in the case of a composite generic or specific concept the name must be retained for one of the components, we might infer that the name given to an artefact of the mermaid type must be retained for one of the component parts of the artificial specimen. It will not be possible, I think, for the Commission on Zoological Nomenclature to issue a ruling applying to all the varied cases of artefacts, and in my opinion each case will have to be judged on its own merits. A few examples will show how I personally am inclined to deal with artefacts of a flagrant type in Lepidoptera:

Perhaps the best-known case of a "mermaid" Lepidopteron is that of *Chrysidia rhipheus* Drury (1773). The figure represents an undoubted Uranid with the head and body of a butterfly, presumably a *Papilio*. The wings agree remotely with the specimens of the brilliant species of *Chrysidia* common in Madagascar. The hindwings evidently were mutilated with a pair of scissors, which mutilation Drury unfortunately did not detect. The right and left wings being drawn alike shows that the artist was not very observant, as in *Chrysidia* and near allies the right and left sides are not known to be ever alike in the detail of the pattern. In short, the figure of *Chr. rhipheus* Drury (1773) is so different from any known specimen that even allowing for mutilation and for the mistakes of the artist, the identification of the figure with the Malagassic *Chrysidia* is rendered very doubtful. We have (*a*) a head and body not identifiable with any degree of certainty, and (*b*) wings which approach those of the Malagassic *Chrysidia*, but are very different in essentials. In such circumstances the name given to the mutilated specimen should not supersede a non-preoccupied later name given to the real Malagassic insect. The name *Chrysidia rhipheus* should either be kept separate as belonging to an unknown and doubtful species, or be placed with a question mark under the later name of the Malagassic *Chrysidia*.

A different kind of artefact is represented by *Papilio antiochus* L. (1758). This name is mainly based on a figure of a yellow *Papilio glaucus* with black bands which the artist has adorned with long white tails. Here we have again (*a*) a tail foreign to any *Papilio* of this group of species, the product of the brush of the artist, and (*b*) a butterfly minus tail perfectly recognisable as *P. glaucus*, from Carolina. The southern form of *P. glaucus* was in 1891 named *australis* by Maynard, and if a name is required for it *australis* should be used and *antiochus* be placed as a synonym under *australis* with the qualification "fig. fict."

Eumesia semiargentea Feld. (1867) may be taken as an illustration of a third modification of fictitiousness. The composite specimen consists of (*a*) head and abdomen, and (*b*) thorax and wings. Rigorously considered it is as correct to say that (*b*) is glued on to (*a*) as that (*a*) is added to (*b*). But in the case of Lepidoptera it is quite obvious that the wings are the main portion, and that foreign parts are added to a defective specimen merely to make it look complete, as is the bad habit of collectors and dealers of an obsolescent

type. It is possible to ascertain to which Satyrine the added parts belong, but it is hardly worth while. There is no second name involved, and Butler's, Watson's, and Mabille's actions above mentioned restrict the name *Eumesia semiargentea* to the thorax and wings of Felder's specimen.¹

b. *On the Tegulae and Wing-bases of Hesperiidæ.*

Specimens are generally recognized as belonging to the *Hesperiidæ* by the head, antennae, and the wing-neuration. As only the wings and thorax are available in the case of the type-specimen of *Eumesia semiargentea* I took the opportunity at the meeting of the Ent. Soc., mentioned at the beginning of this article on *Eumesia*, of demonstrating with the help of a lantern-slide some hitherto unknown morphological peculiarities in which the Hesperids differ from the butterflies and which link them with the Heterocera. I did not publish the figures shown on that occasion, and they are therefore available for the illustration of the present note.

The tegulae of the mesothorax which protect the joint between the forewing and thorax vary very much in size and proportions in the various groups of Lepidoptera. They are attached to the thorax by means of a membrane. If one imagines a sclerite, connected with the neighbouring sclerites by membranes, was pushed a short distance away from the body and widened out, the connecting membranes would form a sort of cylinder attached to the under surface of the sclerite. Something of this kind has happened in the evolution of the tegula. If the tegula is removed, a hole on the underside gives the position of the connecting membrane.

When many years ago I began to study these sclerites for the purpose of ascertaining as to whether they gave any hints about the relationship of families or lower systematic categories, or could be used in the definition of species and higher concepts, it soon became evident that there was an interesting difference in the attachment of the tegula in the Rhopalocera on the one hand and the Heterocera on the other. In the Butterflies the connecting membrane is attached close to the ventral margin of the tegula (Pl. III, figs. 34, 35, 36). I have not come across any exception. If the tegula is swollen, as in *Danaïnae* (fig. 36), there is a narrow ventral surface between the inner and outer sides, and the hole of the connecting membrane appears moved upwards; in reality it remains at the ventral margin of the inner surface, the most ventral outline seen in our figure being that of the outer surface. In the Heterocera, on the contrary, the edge of the cavity is always separate from the ventral margin of the tegula, the hole frequently being central (figs. 32, 33). It is a curious bit of well-concealed evidence that the Rhopalocera really are a branch separate from all the other Lepidoptera; I mean with Rhopalocera the four large families: *Lycaenidæ* (plus *Riodinidæ* = *Erycinidæ* olim), *Pieridæ*, *Papilionidæ*, and *Nymphalidæ* (= *Danaïnae*, *Nymphalinae*, *Libytheinae*, *Satyrinae*, etc.).

It is very significant that the *Hesperiidæ* (fig. 31) agree with the Heterocera in the attachment of the tegula, and not with the Rhopalocera.

Some other characteristics of *Hesperiidæ* are found in the wing-bases. A good deal of valuable work has been published on the wing-bases of insects by Crampton, Snodgrass, and others. I have studied the ossicles connecting the

¹ The eyes of the specimen, which are stated by Felder to be naked, are hairy.

wings with the thorax in Lepidoptera on and off for more than a dozen years ; notes and sketches have accumulated, but other work has prevented me from making the manuscript ready for the printer, and I do not know whether I shall be able to attend to the subject in the near future. The following remarks may serve as a preliminary notice. The number of sclerites or ossicles is large, and in order to be able to point out the differences obtaining in this or that family or genus of Lepidoptera it is necessary to have a convenient nomenclature of the ossicles. As the nomenclature proposed by various authors does not sufficiently go into detail, I have, after long hesitation, adopted one of my own for descriptive purposes in Lepidoptera. The uniformity in the number and position of these sclerites in Lepidoptera is surprising, the *Hepialidae* standing out more than any other family ; in detail, however, the ossicles present much variety, often showing differences in families and lower categories. These axillaries are not alike in the fore- and hindwings, but can be homologised in the two wings without very great difficulty ; in the hindwing they are exteriorly divided into an anterior and a posterior set, while in the forewing the central ossicles of both sets are united into a median sclerite (figs. 38, 39, Ms), the composite nature of which is indicated by lines or sutures. I group the dorsal axillaries as follows :

Ossicula axillaria (Pl. III, figs. 38, 39)	Basalia	Anterobasale (Ab)
		Mediobasale (= Condylaphore, Cp)
		Posterobasale (Pb)
	Centralia	Anterocentrale (= Claviform, Cf)
		Mediocentrale (= Mesum, Ms, and Tylophore, Ty)
		Submediocentrale (= Acetabular, Ac)
		Posterocentrale (Pe)
	Neuralia	Anteroneurale (An)
		Medioneurale (Mu)
Posteroneurale (Pu, of which the large sclerite is the Zygellum, Zy).		

In Butterflies the costal margin of the forewing (fig. 38, CM) is broad at the base, the portion in front of the claviform (Cf) being more or less parallel with the thorax, only in some weak- and narrow-winged species (*Liptena*) the marginal area is less expanded. In the Hesperids (fig. 39) and Heterocera the base of the costal margin is nearly at right angles to the body, being not, or not much, expanded in front of the axillaries. The Uranids and Geometers approach the Rhopalocera. The claviform (Cf), which varies very much according to species and groups of species, has a basi-distal direction in the Rhopalocera, while in the Heterocera it is as a rule more or less parallel with the thorax, the Hesperids agreeing better with the moths than with the Butterflies. Some conspicuous characteristics of the Hesperids are found in the neurals and the zygellum. The anteroneural (An) consists of two ossicles which connect vein SC with the mesum (Ms) ; the distal ossicle is short in butterflies and fused with SC, only in some *Papilionidae* (e.g. *Doritis* F. 1807) it is long, which is also the case in a large number of families of Heterocera and in the Hesperids (fig. 39). The condylaphore (Cp) is always very conspicuous and easily recognised. It is the well-known shoulder-spine of Saturnians, but occurs in all Lepidoptera, varying in size and often being rounded at the apex instead of pointed. The

main sclerite (Zy) of the posteroneurals is more or less parallel with the body and is anteriorly connected with the acetabular (Ac, into which fits the condylus of Cp) and posteriorly with the posterobasal by means of the narrow postero-central ossicle (Pc). This zygellum (Zy) being easily visible in set specimens and often being different in detail in species or genera will prove to be useful in diagnostic work. In *Hesperiidae* it is anteriorly either bifurcate, as in fig. 39, or truncate, the posterior lobe being the larger and partially lying on the extreme base of vein $SM^2 = 1b$.

The wings of the Felderian specimen of *Eumesia semiargentea* agree in the axillaries with the *Hesperiidae*.

I mentioned above that Felder described the forewing of *E. semiargentea* as having 14 instead of 12 veins. A reference to our Pl. III, fig. 37, explains the statement. The neuration of the specimen is anomalous in both forewings: our figure represents the left wing from above, in the right wing R^1 is divided into two veins to near the cell and SC^5 is forked, as in the left wing, but is not split proximally of the fork. In the British Museum specimen the neuration is normal. Butler, Watson, and Mabille did not comment on Felder's description of the neuration. The species agrees closely with the golden-winged *Argopteron* Wats. (1893) from Chile, near which Watson placed it.

ON PLATES IV. AND V., REPRESENTING ORIENTAL
EPIPLEMIDAE.

By DR. KARL JORDAN.

THE majority of *Epiplemidae* being of small size and their colouring frequently dingy, it is, as a rule, very difficult to draw up description sufficiently precise for the identification of the species. The two plates we are here issuing are intended to be an aid to the identification of these insects and have no other purpose. The specimens figured are all types and paratypes, most of them being described by W. Warren. I have not studied the species and therefore abstain from making any remarks as to their classification and synonymy.

PLATE IV.

(Enlargement $1\frac{1}{3}\times$)

- Fig. 1. Type, ♀: *Epiplema fuscifrons* Warren, *Nov. Zool.* iii. p. 348. no. 33 (1896). Sikkim.
- .. 2. Type, ♀: *E. litualis* Warren, *Ann. Mag. N.H.* (6). xvii. p. 214 (1896). Khasis (Khasia Hills = Khasias).
- .. 3. Type, ♀: *E. facilis* Warren, *Nov. Zool.* xiv. p. 115. no. 47 (1907). Biagi, Mambaré R., British New Guinea.
- .. 4. Type, ♂: *E. signifera* Warren, *l.c.* ix. p. 347. no. 20 (1902). Florida I., Solomon Is.
- .. 5. Type, ♀: *E. lacteata* Warren, *l.c.* iii. p. 276. no. 14 (1896). Fergusson I.
- .. 6. Type, ♂: *E. foedicosta* Warren, *l.c.* xiv. p. 115. no. 48 (1907). Biagi, Mambaré R.
- .. 7. Type, ♂: *E. lignicolor* Warren, *l.c.* xii. p. 413. no. 10 (1905). North side of Choiseul I., Solomon Is.
Warren erroneously gave Bougainville as the locality of this species.
- .. 8. Type, ♀: *E. paradeicta* Warren, *l.c.* iv. p. 26. no. 41 (1897). S. Celebes.
- .. 9. Type, ♀: *E. undulata* Warren, *l.c.* iii. p. 278. no. 18 (1896). Fergusson I.
- .. 10. Type, ♀: *E. rufimargo* Warren, *l.c.* iii. p. 349. no. 37 (1896). Sikkim.
- .. 11. Type, ♂: *Platerosia rotundipennis* Warren, *l.c.* iii. p. 280. no. 21 (1896). Fergusson I.
- .. 12. Type, ♂: *P. albipennis* Warren, *l.c.* xiv. p. 118. no. 54 (1907). Biagi, Mambaré R.
- .. 13. Type, ♂: *Epiplema particolor* Warren, *l.c.* iii. p. 277. no. 15 (1896). Fergusson I.
- .. 14. Type, ♂: *E. fulvata* Warren, *l.c.* iii. p. 307. no. 2 (1896). Khasis.
- .. 15. Type, ♂: *E. nigropustulata* Warren, *l.c.* xii. p. 414. no. 11 (1905). Obi Major.
- .. 16. Type, ♂: *E. alabastraria* Warren, *l.c.* x. p. 259. no. 8 (1903). Isabel I., Solomon Is.

- Fig. 17. Type, ♂: *E. warreni* Rothschild, *Lepid. Brit. Ornith. & Wollast. Exp.* p. 104. no. 574 (1915). Base Camp, Utakwa R., Dutch S. New Guinea.
- .. 18. Type, ♂: *E. taminata* Warren, *Nor. Zool.* xiii. p. 74. no. 32 (1906). Angabunga R., British New Guinea.
- .. 19. Type, ♂: *E. clathrata* Warren, *l.c.* iii. p. 347. no. 30 (1896). Khasis.
- .. 20. Type, ♂: *E. ruptifascia* Warren, *l.c.* iv. p. 204. no. 24 (1897). Bali.
- .. 21. Type, ♂: *E. perpolita* Warren, *l.c.* iii. p. 349. no. 36 (1896). Banda.
- .. 22. Type, ♂: *Chaetoceras sulphurata* Warren, *l.c.* xiv. p. 111. no. 39 (1907). Biagi, Mambaré R.
- .. 23. Paratype, ♀: *C. sulphurata* Warren, *l.c.* xiv. p. 111. no. 39 (1907). Biagi, Mambaré R.
- .. 24. Type, ♂: *Epiplema catenigera* Warren, *l.c.* xii. p. 412. no. 6 (1905). Bongainville I., Solomon Is.
- .. 25. Type, ♀: *E. inquinata* Warren, *l.c.* x. p. 344. no. 2 (1903). Upper Aroa R., British New Guinea.
- .. 26. Type, ♂: *E. edentata* Hampson, in Blanf., *Fauna Brit. Ind., Moths*, iii. p. 125. no. 3042 (1895). Sikkim.
- .. 27. Type, ♂: *E. restricta* Hampson, *l.c.* iii. p. 130. no. 3059 (1895). Sikkim.
- .. 28. Type, ♀: *E. instabilata semifulva* Warren, *Nor. Zool.* iv. p. 25. no. 39 (1897). Khasis.
- .. 29. Type, ♂: *E. boarmiata* Rothschild, *l.c.* p. 104. no. 576 (1915). Utakwa R., Dutch S. New Guinea.
- .. 30. Type, ♂: *Chaetoceras transnigrata* Warren, *Nor. Zool.* xiv. p. 111. no. 40 (1907). Biagi, Mambaré R.
- .. 31. Paratype, ♀: *C. transnigrata* Warren, *l.c.* xiv. p. 111. no. 40 (1907). Biagi, Mambaré R.
- .. 32. Type, ♂: *Epiplema ustanalis* Warren, *l.c.* xii. p. 415. no. 13 (1905). North side of Choiseul I.
- .. 33. Type, ♂: *Chaetoceras strigulosata* Warren, *l.c.* xiv. p. 110. no. 37 (1907). Biagi, Mambaré R.
- .. 34. Type, ♂: *Chaetopyga horrida* Warren, *l.c.* iii. p. 345. no. 24 (1896). Maekay, Queensland.
- .. 35. Type, ♂: *Chaetoceras striolata* Warren, *l.c.* xiv. p. 110. no. 38 (1907). Biagi, Mambaré R.
- .. 36. ♂: *Epiplema flavistriga* Warren, *l.c.* viii. p. 21. no. 2 (1901). Khasis.

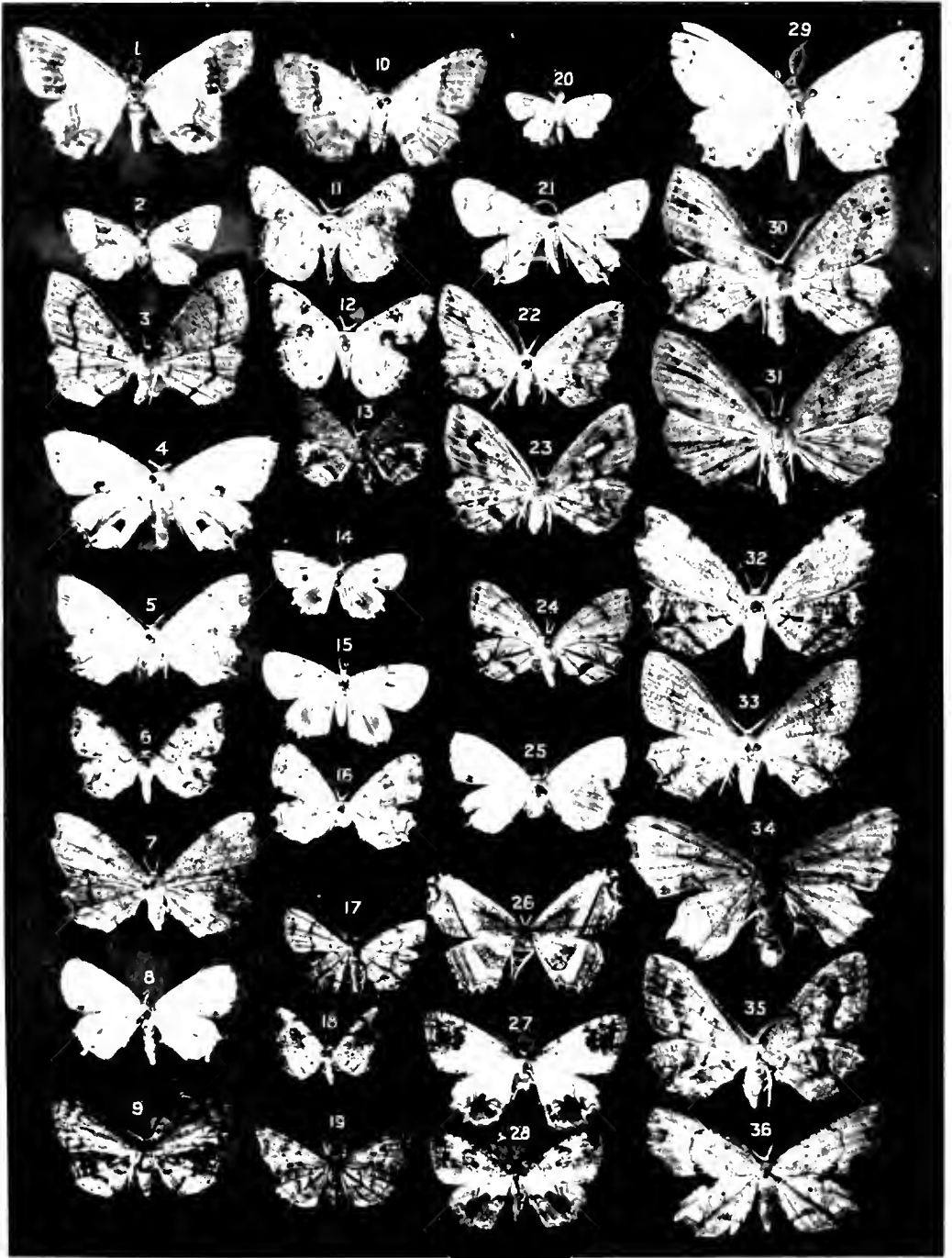
PLATE V.

(Enlargement $1\frac{1}{2}\times$)

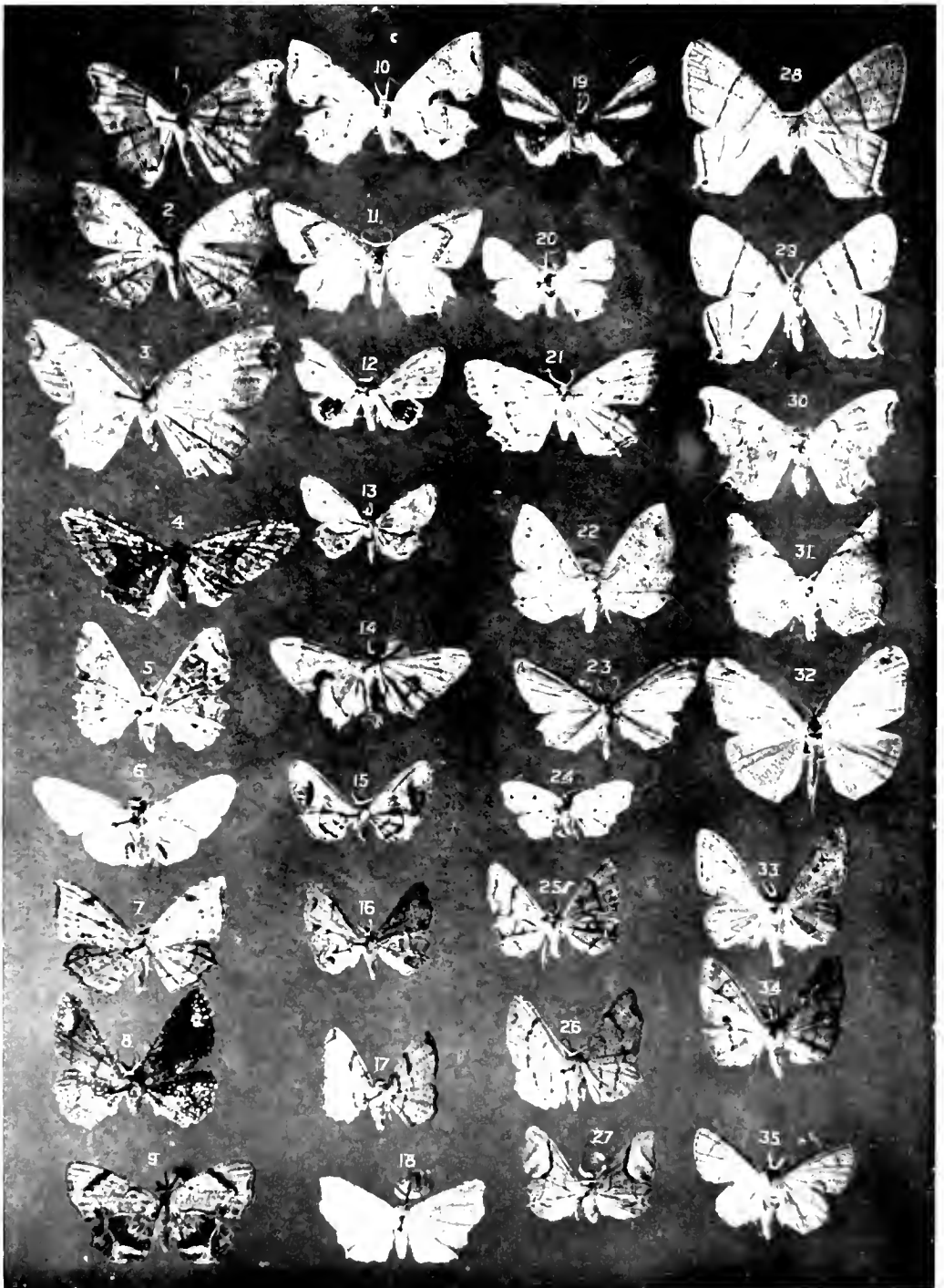
- Fig. 1. Type, ♂: *Epiplema castanea* Warren, *Ann. Mag. N.H.* (6). xviii. p. 231 (1896). Khasis.
- .. 2. Type, ♂: *E. arcuata* Warren, *Nor. Zool.* iii. p. 307. no. 1 (1896). Khasis.
- .. 3. Paratype, ♀: *E. arcuata* Warren, *l.c.* iii. p. 307. no. 1 (1896). Khasis.
- .. 4. Type, ♂: *Gathynia pernigrata* Warren, *l.c.* iii. p. 350. no. 40 (1896). Khasis.
- .. 5. Type, ♀: *Epiplema adornata* Warren, *l.c.* xiv. p. 113. no. 43 (1907). Biagi, Mambaré R.
- .. 6. Type, ♂: *Dirudes onusta* Warren, *l.c.* ix. p. 346. no. 18 (1902). Batchian.
- .. 7. Type, ♂: *Epiplema bicolor* Warren, *l.c.* vi. p. 10. no. 24 (1899). Ron I., Dutch S. New Guinea.
- .. 8. Type, ♀: *E. vialactea* Warren, *l.c.* xiii. p. 75. no. 33 (1906). Angabunga R., British New Guinea.
- .. 9. Type, ♂: *E. atrifasciata* Warren, *l.c.* vi. p. 9. no. 22 (1899). Khasis.
- .. 10. Type, ♂: *E. dealbata* Warren, *l.c.* xiii. p. 71. no. 24 (1906). Angabunga R., British New Guinea.
- .. 11. Type, ♂: *E. ochreofumosa* Warren, *Ann. Mag. N.H.* (6). xvii. p. 215 (1896). Khasis.
- .. 12. Type, ♂: *Gathynia albibasis* Warren, *Nor. Zool.* iii. p. 278. no. 19 (1896). Fergusson I.
- .. 13. Type, ♂: *Dirades decorata brunnea* Rothschild, *l.c.* p. 105. no. 579 (1915). Utakwa R., Dutch New Guinea.
- .. 14. Type, ♂: *D. annulifer* Warren, *l.c.* xii. p. 274. no. 8 (1905). Kiriwini, Trobriand Is.
- .. 15. Type, ♀: *Monobolodes ustimacula* Warren, *l.c.* x. p. 344. no. 3 (1903). Upper Aroa R., British New Guinea.
- .. 16. Type, ♂: *Epiplema aequisepta* Warren, *l.c.* xiv. p. 113. no. 44 (1907). Biagi, Mambaré R.
- .. 17. Type, ♂: *Paroecia acupicta* Warren, *l.c.* xiv. p. 118. no. 53 (1907). Biagi, Mambaré R.
- .. 18. Type, ♂: *Epiplema sordida* Warren, *l.c.* iii. p. 278. no. 17 (1896). Fergusson I.
- .. 19. Type, ♂: *Gathynia nigella* Warren, *l.c.* xiv. p. 117. no. 51 (1907). Biagi, Mambaré R.
- .. 20. Type, ♂: *Epiplema concinnula* Warren, *l.c.* vi. p. 321. no. 24 (1899). Woodlark I.
- .. 21. Type, ♂: *E. uubrimargo* Warren, *l.c.* xii. p. 414. no. 12 (1905). South side of Choiseul I.
- .. 22. Type, ♂: *E. despecta* Warren, *l.c.* xiii. p. 71. no. 12 (1906). Angabunga R., British New Guinea.
- .. 23. Type, ♂: *Gathynia fumicosta* Warren, *Ann. Mag. N.H.* (6). xvii. p. 215 (189). Khasis.

- Fig. 24. Type, ♂: *Paradirades maculata* Warren, *Nor. Zool.* iv. p. 205. no. 28 (1897). Bali.
- .. 25. Type, ♂: *Epiplema triangulifera* Warren, *l.c.* xii. p. 8. no. 7 (1905). Guizo I. Solomon Is.
- .. 26. Type, ♂: *Pterotosoma bilineata* Warren, *l.c.* x. p. 346. no. 5 (1903). Upper Aroa R., British New Guinea.
- .. 27. Type, ♂: *Epiplema flexifascia* Warren, *l.c.* xiii. p. 73. no. 29 (1906). Angabunga R., British New Guinea.
- .. 28. Type, ♀: *Cirrhura cometifera* Warren, *l.c.* x. p. 343. no. 1 (1903). Upper Aroa R., British New Guinea.
- .. 29. Type, ♂: *Epiplema urapterygia* Rothschild, *l.c.* p. 105. no. 577 (1915). Base Camp, Utakwa R.
The specimen is a ♂, not a ♀ as stated, *l.c.*
- .. 30. Paratype, ♀: *E. castanea* Warren, *cf.* fig. 1. Khasis.
- .. 31. Type, ♂: *E. eupeplodes* Warren, *Nor. Zool.* xiii. p. 72. no. 27 (1906). Angabunga R., British New Guinea.
- .. 32. Type, ♂: *Mesoglypta fleximargo* Warren, *l.c.* iv. p. 205. no. 27 (1897). Lombok.
- .. 33. Type, ♂: *Dirades semicarnea* Warren, *l.c.* xiv. p. 112. no. 42 (1907). Biagi, Mambaré R.
- .. 34. Type, ♂: *Diradopsis alberta* Warren, *l.c.* xiii. p. 69. no. 19 (1906). Angabunga R., British New Guinea.
- .. 35. Type, ♂: *Diradopsis perfallax* Warren, *l.c.* v. p. 425 (1898). Key.
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FOR EXPLANATIONS OF PLATES IV-V SEE PAGES 147-150.



Enlarge 1 1/2



Enlarged 1x

SOME ANTHRIBIDAE COLLECTED BY R. E. TURNER IN
SOUTH AFRICA.

By DR. KARL JORDAN.

IN Bovic's *Catalogue des Anthribides* (1905) two dozen species are enumerated as being known from Africa south of the Zambesi. I have added to this small number now and again a few species, mostly collected by G. F. Leigh at and near Durban. Among the Insects which R. E. Turner collected during his travels in South Africa from 1923 to 1926 the *Anthribidae* are well represented, particularly by small forms, many of which were obtained by sweeping in the forest. The percentage of new species is large: but as the small specimens mounted on cardboard present great difficulties and require remounting before they can be adequately studied, it will take some time before the whole series of species will be identified or described. The present paper is a first instalment, dealing with 10 of the species collected. The specimens belong to the British Museum.

Holophloeus gen. nov.

♂♀. Rostrum crassum subcylindricum apice parum dilatatum. Oculi laterales, integri. Scrobes antennarum foveiformes, laterales, subdorsales, apicales. Carina dorsalis prothoracis a basi longe remota, ad latera paululum antrorsum continuata. Elytrorum margo basalis truneatus. Processus mesosternalis intercoxalis angustus. ♂: antenna elongata, segmentis 10^o et 11^o brevibus.—Genotypus: **H. irrasus** sp. nov.

Here also belongs *Anthribus nigellus* Sparm. (1785). The new genus should provisionally be placed near *Ischnocerus* Schoenh. (1839). In the shape and position of the antennal groove similar to *Phlocotragus* Schoenh. (1826) and *Decataphanes* Imh. (1842), but in general appearance more like a tuberculated *Tapholeres* Schoenh. (1839). On pronotum two tufts or one: on elytra numerous tufts. Antenna of ♂ longer than the body: in both sexes the proximal two segments short, 3 long. Basal longitudinal carinula of pronotum oblique, forming a very sharp angle with the lateral carina, the carinula sometimes absent. Tooth of claw large.

1. **Holophloeus irrasus** sp. nov.

♂♀. Niger, aenescens, pube luteo-grisea vestitus, luteo et nigro variegatus. Rostrum ab basi ad apicem late sed non profunde impressum, cum capite supra et subtus dense rugulosum. Antennae graciles, in ♂ corpore dimidio longiores, segmentis 3^{io}–8^o fere aequiparibus, 9^o elongato-triangulari, latitudine triplo longiore, 10^o parum longiore quam latiore, 11^o latitudine fere duplo longiore, sublineari, 10^o et 11^o simul sumptis nono parum brevioribus: in ♀ 3^{io} longiore quam quarto, 4^o–8^o fere aequalibus, 9^o triangulari fere aequilaterali. Prothorax longitudine parum latior, lateribus rotundatus, maxima latitudine mox pone medium, supra confertissime rugulosus, valde convexus, in disco duobus penicillis subapproximatis nigris instructus; carina dorsali recta versus latera retrorsum, deinde antrorsum, flexa. Elytra grosse striato-punctata, inaequalia, sex penicillis

nigris notata: uno magno subbasali, duobus medianis, tribus ante apicem declivem griseum sitis. Pygidium longitudine latius. Sterna fortiter et dense punctata. Tibiae nigrae, pone basim et ad apicem griseae: tarsi grisei.

Long. 6-8 mm.

Pondoland: xi. and xii. 1923, 4 ♂♂, 2 ♀♀.

Derm slightly metallic, in one specimen purplish. The luteous grey pubescence forms three lines on frons and occiput, the median one more or less continued to base of pronotum. On labiophore a patch of luteous pubescence bounded posteriorly by a transverse curved low ridge. Alternate interspaces of elytra somewhat elevate, suture and interspace 7 dotted with black; besides the conspicuous 6 dark tufts mentioned above there are several small ones; the black colour of the large subbasal tuft extends forward to basal margin. Anal sternite subtruncate.

2. *Holophloeus longipes* sp. nov.

♂. Major, antenna corpore plus duplo longiore, segmento 9^o longissimo, prothorace latitudine et longitudine aequalibus unipenicillato, rostro subtus pone labium tubereulo alto acuto areuato instructo valde diversus.

Long. 12 mm.

Pondoland: Port St. John, xii. 1923, 1 ♂.

Black, covered with an ochreous pubescence which does not conceal the derm. Proboscis rugate-punctate, impressed along middle, the sunk portion flanked by a carina, in the depression a raised median line, the ochraceous surface of head gradually narrowing from occiput to antennal grooves. Below eye a long oblique longitudinal channel. Antennal segments 3 to 8 rather abruptly incrassate at tip (as in the previous species), apex of 6 beyond end of elytra, 5 to 9 increasing in length, 9 more than twice as long as 3, triangularly dilated at apex, 10 about as long as broad, 11 a little over double the length of 10, constricted in middle, gradually narrowed from this point to apex. Pronotum rugate-punctate, as long as broad, about as broad at base as at apex, the ochreous pubescence forming indefinite stripes, dorsal carina at one-third from base on side, at one-fourth in middle, being strongly and evenly concave in median three-fifth (and interrupted in centre), and then curved forward in a semicircle: sides of pronotum rounded. Elytra longer than in the previous species, dorsally flatter, interspace 3 with four tufts, 5 with three, 7 with two and 9 with one, the tufts blackish brown, assuming a chestnut tint in certain aspects, the posterior ones ochreous frontally. Pygidium semicircular.

Prosternum granulose. Legs long, particularly the foreleg, foretarsus much longer than tibia, nearly as long as the elytra, segment 2 more than twice as long as broad, apex of tibiae and of first tarsal segment and the entire segments 2 and 3 black.

3. *Zygaenodes monstrosus* Pasc. (1860).

Pondoland: Port St. John, xi. 1923, 1 ♂.—Natal: Kloof, 1,500 feet, viii. and ix. 1926, a series.—Zululand: Eshowe and Empangeni, iv. 1926; Gingindlovu, v. 1926, two pairs.

In this species the sinus of the eye is very shallow; the posterior angle of the sinus being almost effaced and the anterior one produced downward, the eye appears pointed-ovate in a view from the side, particularly in the ♂. The series varies in size from 2.3 to 3.8 mm.

4. *Zygaenodes quadrituberculatus* Fahr. (1871).

Pondoland : Port St. John, iv. and ix. 1923, 2 ♂♂, 1 ♀.—Natal : Kloof, 1,500 feet, viii. 1926, 1 ♂.

The eye of this species is regularly sinuate. The face is longer than in *Z. monstrosus*, particularly in the ♀, the third segment of the antenna of the ♂ is broader, the elytra are less coarsely striated and their subapical ridges less prominent. I am grateful to Professor Y. Sjöstedt for having lent me the type.

5. *Zygaenodes capensis* sp. nov.

♂♀. Oculi sinuati, aut subsessiles (♂) aut sessiles (♀). Elytra dorso albo suffusa, tuberculis parvis, interspatio tertio a tuberculo mediano ad apicem albo brunneo-binotato. Abdomen maris contractum, segmento anali brevissimo.

Long. 2·8–3·3 mm.

Pondoland : Port St. John, ii. iv. vii. viii. x. 1923, a small series of both sexes.

Face shorter than in *Z. quadrituberculatus* Fahr. (1871), in ♂ (type) all white. Eye sinuate ; the stalk quite short, but distinct in a view from behind ; in the ♂ the frontal lobe of the eye a little broader than the lateral lobe. Antenna of ♂ short, third segment widened and flattened at apex, but not in basal half, being much less broadened than in the preceding insect, and distinctly longer than segment 4. Pronotum with a diffuse white median line and at each side a white spot before carina and diffuse white pubescence behind eye. Elytral tubercles smaller than in both previous species ; sutural area suffused with white, this colouring rather more condensed in third interspace from the median tubercle backwards. Last segment of abdomen of ♂ medianly shorter than the previous, the margin somewhat turned down, the pygidium inclining slightly frontad.

Alloschema gen nov.

♂♀. Brevis, lata, statura *Coccinellae*, elytris rotundatis basi truncatis. Rostrum breve, sat crassum, cum capitis fronte lata planum, apice leviter emarginatum. Oculi elliptici, integri, laterales, antice paululo in dorsum vergentes, ab fossis antennarum foveiformibus separati. Antenna elytrorum basim superans (♂), vel attingens (♀), segmento 3^o duobus basalibus simul sumptis longitudine aequali. 4^o–8^o gradatim brevioribus, clava triarticulata lata hirsuta, 9^o triangulari, latitudine paululo longiore (♂), 10^o latitudine brevior, 11^o ovato. Pronotum breve, modice ac aequabiliter convexum, carina subbasali in arco antrorsum flexa, medium lateris attingente, hac parte laterali pronoti parum explanata. Elytra aequabiliter convexa, 14 striis punctorum instructa. Pygidium latum truncato-rotundatum. Pedes breves fortes, femore postico abdominis apicem attingente.—Genotypus : *A. turneri* sp. nov.

Distantly related to the Malagassic genus *Diastatotropis* Lac. (1866). The genus is unique in bearing 14 lines of large punctures on the elytra, instead of 10. The eye is separated from the antennal groove by an interspace which is somewhat wider than the first segment of the antenna ; though placed at the side of the head the eye is more dorsal in a lateral view than truly lateral.

6. *Alloschema turneri* sp. nov.

♂♀. Nigra, capite cum rostro, pronoto, elytrorum limbo et apice aurantiacis nigro-guttatis.

Long. 5.3 mm., lat. 3 mm.

Pondoland: Port St. John, ii, 1924, a small series.

Scutellum, a spot above shoulder, another at apex of femora and a subbasal ring on tibiae orange. At base of rostrum a median spot, two spots on occiput, seven on pronotum: two at apex, two at base, one (round) in centre and one subapical on each side, and before apex of elytra one or two (round) black: the orange lateral border of elytra irregular, restricted to the margin in anterior half, widened into a spot in middle, apical orange area invaded by black, sometimes bearing an anterior black dot besides the one near apical margin, there being also a small lateral black dot present in two specimens.

Proboscis nearly twice as broad as long, slightly dilated at apex, rugulose. Labium incised, this sinus not extending nearly down to the insertion of the palpi. Anterior lower margin of eye nearly straight, the naked narrow ventral rim of the eye forming a small angle anteriorly. Shaft of antenna rufescent. Frons two-thirds as broad as the rostrum, occiput, frons and rostrum gradually merging into one another, the convexity of the head being slight: on underside a transverse depression separates the labiophore from the gula.

Pronotum half as broad again as long, broadest about middle: dorsal carina concave in middle, then convex, broadly flexed forward, the lateral carina being oblique and slightly curved: lateral margin from carina to apex faintly cariniform: pubescence so dense that the structure of the derm is concealed: basal longitudinal carina forming a very acute angle with lateral carina. Scutellum longer than broad, narrow.

Elytra parallel from base to below middle, then evenly rounded, surface regularly convex, subbasal swelling not distinct, the interspaces of the 14 lines of coarse punctures flat.

Pro- and mesosternum and side of metasternum densely, side of abdomen more sparsely punctate, anal sternite centrally flattened in ♂.

Tapinidius gen. nov.

♂♀. Rostrum breve, apice dilatatum, planum, cum capite punctato-reticulatum. Oculus circularis, antice truncatus, lateralis. Antennarum scrobes aperti. Carina pronoti antebasalis, ad latera paululum antrosum flexa. Scutellum subcirculare. Elytra basi truncata, cylindrica, fortiter punctato-striata, minutissime granulosa.—Genotypus: **T. humilis** sp. nov.

Near *Hadromerina* Jord. (1914), but the proboscis shorter, flatter, more strongly dilated at apex, without median carina, and like the head very regularly punctate-reticulate. Club of antenna loose, the three segments nearly equal in length, longer than broad.

7. *Tapinidius humilis* sp. nov.

♂♀. Rufo-brunneus, griseo notatus, antennis rufis clava brunnea, pronoto rugato-punctato haud plicato, carina concava, prosterno fortissime punctato, abdomine impunctato, levissime coriaceo, segmento primo serie basali punctorum instructo,

Long. 1.8-2.1 mm.

Pondoland : Port St. John, xii. 1923, ii. and iii. 1924. 2 ♂♂, 1 ♀.

Pubescence coarse and not dense, the whitish grey colouring occupying less than half the upper surface, more or less concentrated in spots which vary in size and number and are not very definite : on pronotum a spot on each side of disc, a border along carina and sometimes an indication of a median stripe whitish grey : scutellum whitish grey : on elytra this pubescence usually more extended before and behind middle than elsewhere : on underside the grey colouring almost confined to the sides of meso-metasternum, where it is fairly conspicuous.

Proboscis one-half broader than long ; the median sinus of the apical margin shallow, occupying a little over one-third, sides of margin smooth, glossy. Frons much more than one-half the width of the occiput. Upper margin of antennal groove regularly incurved, the groove not being covered by it. Antenna reaching base of elytra, segment 3 a little shorter than 2, but longer than 4, 5 to 8 slightly thicker than 3, about twice as long as broad, club as long as 3 to 8 together, 9 and 10 almost alike, conical, longer than broad, 11 the same in length, but elliptical, pointed, pubescence of club white, not dense. Distance of antennal groove from eye a little less than the width of segment 2 of antenna.

Pronotum one-fifth broader than long, rounded at sides, widest behind middle, moderately convex, coarsely and deeply punctate, the punctures close together, somewhat irregular, their interstices granulose, centre of apical margin smooth. Elytra almost twice as long as broad (25 : 14), cylindrical, very deeply striate-punctate, the interspaces convex, subbasal swelling hardly indicated. Pygidium semicircular. Prosternum very coarsely punctate inclusive of middle, there being some large punctures also on posterior half of side : antecoxal portion somewhat shorter than the coxa is wide ; metasternum punctate at sides, convex between mid and hind coxae. Anal segment of abdomen rather strongly convex in ♂. Hind femur of ♂ reaching to apex of abdominal segment 4, shorter in ♀ ; first tarsal segment longer than 4, 3 pale.

Astianus gen. nov.

♂♀. Præcedentis vicinus, antennarum segmento 10^o longitudine latiore, earina pronoti ad latera haud antrorsum flexa, elytrorum interspatiis nitidis haud granulosis, sternis et abdomine grosse punctatis facile distinguendus.— Genotypus : **A. cinctus** sp. nov.

The proboscis and head regularly punctate-reticulate. Eyes elliptical, oblique, not truncate in head, lateral, the frons being much broader than half the occiput. Upper margin of antennal scrobe not incurved, the scrobe being more or less covered by it. Pronotum reticulate-punctate, with the longitudinal interspaces somewhat convex, or punctate with all the interspaces flat, the sides of pronotum somewhat expanded, rounded-convex. Base of elytra truncate, the raised margin very sharp also across shoulder ; interspaces of rows of punctures not convex and quite smooth, without the minute granulation of the allied genera : *Enedreytes* Schoenh. (1839), *Autotropis* Jord. (1924), *Tapinidius* gen. nov.

In general appearance very similar to *Cleranthribus* Jord. (1913), from the Seychelles, but in that genus the antennal groove is open, dorsal and close to the

eye. The resemblance probably is due to an association of these Anthribids with some kinds of *Cleridae*, *Anthicidae*, or *Colydiidae*, and ants.

8. *Astianus cinctus* sp. nov.

♂. Aut rufus aut nigro-brunneus: pronoto capite cum oculis multo latiore, lateribus rotundatim dilatatis; elytris nigris, fortiter convexis, basi contracta rufa albo bifasciata.

Long. 1.8–2.5 mm.

Pondoland: Port St. John, ix., x., xi., xii. 1923, i. and ii. 1924, a small series.

Whereas the general colouration of the derm varies individually from rufous to blackish brown, the basal fifth of the elytra and their apical margin remain rufous. Pubescence consisting of scattered darkish stiff hairs and broader white scale-hairs, the white pubescence conspicuous where it is concentrated, but evidently easily rubbed off: on pronotum a subapical spot on each side and three basal ones which extend across carina, on elytra a transverse band at base and another behind it at the beginning of the dark swollen portion, these bands continued on the metasternum by one broad band, before apical declivity of elytra one or two spots, sometimes nearly forming a transverse band, on prosternum a lateral spot, and on other parts of the body and on the legs some scattered white pubescence.

Proboscis not quite one-half broader (at apex) than long (14:10), medianly impressed. Upper edge of antennal groove nearly straight, very little curved downwards posteriorly, the groove not sharply defined towards eye. Antenna rufous, reaching base of elytra, segment 2 elongate-pyriform, 3 as long as 2 (♂) or a little shorter, slightly longer than 4 (♂) or equalling it in length, 4 to 7 gradually decreasing in lengths, 8 = 7 a little more than half as long as 3, club brown, with a fairly dense covering of thin white hairs, the segments well separated, together not quite so long as 4 to 8 together, 9 conical, longer than broad, 10 broader than long, 11 ovate, as long as 9.

Pronotum as broad as the elytra at their widest point, swollen sideways from close to apical margin, cushion-shaped, moderately convex, about one-seventh broader than long, densely covered with large punctures, of which the interstices form irregular longitudinal ridges.

Elytra a little over one-half longer than broad, not depressed at suture, without subbasal callosity, strongly swollen in middle, in the manner of *Physopterus gibbosus* Guér. (1843), gradually declivous towards base and more strongly towards apex, base narrower than middle, punctures large, smaller at apex, forming conspicuous rows from base to apex, but the rows not distinctly impressed. Pygidium rounded, shorter than a semicircle, the median groove extending to near apex.

Underside of head pitted with large punctures up to the eye. Sides of pronotum inclusive of posterior half very coarsely punctate, the antecoxal portion bearing few punctures and being shorter than the coxa is wide. Metasternum also punctate. Abdomen convex, segments 1 to 4 with two rows of large punctures and usually some punctures in between, on 4 the posterior row medianly obsolete, 5 with one incomplete row, 5 a little longer in middle than 4, not swollen in either sex. First segment of tarsi a little longer than 4.

9. *Astianus tricolor* sp. nov.

Cylindricus, supra niger, sparsim albo notatus, capite cum medio pronoti plus minusve rufo, elytris singulis vitta rufa dorsali a basi ad apicem extensa ornatis: subtus aut niger aut rufus. Pronotum densissime grosse reticulato-punctatum. Elytra usque ad apicem fortissime striato-punctata, cylindrica, haud tumida.

Long. 2 mm.

Pondoland: Port St. John, xii.1923, ii.1924, 2 ♀♀, type, also a broken ♂, ix.1923.

The previous, "mimetic," species probably is derived from some species like *A. tricolor* which is normal in shape.

The pubescence consists of scattered darkish hairs and long white scales, the latter concentrated here and there into more or less definite markings: on pronotum a thin median stripe interrupted in middle, a lateral apical spot and dorso-lateral postmedian one; on elytra a line in fifth interspace from base to near one-third, a lateral patch of scattered scales behind shoulder, a few scales near base of suture and a small spot (rubbed away in type) on apical declivity: scutellum likewise white, as is also the metepisternum and a diffuse subapical subventral spot on the femora.

Upper edge of antennal groove curved down posteriorly, sharply bounding the groove. Antenna not reaching to elytra, pale rufous, club brown, segment 3 slightly shorter than 2, 3, 4 and 5 nearly equal in length, 7 and 8 shorter and a little thicker, club almost compact, 9 as long as broad, 10 broader than long, 11 rotundate, longer than 9, its apex pointed. Pronotum one-third broader than long, much broader than the head plus eyes, the sides being rounded-dilated, upper surface densely punctate, the punctures more or less hexagonal, some of them longer than broad, the interstices narrow, but not forming longitudinal ridges as in *A. cinctus*. Scutellum longer than broad.

Elytra one-half longer than broad, cylindrical, not swollen, not dilated, subbasal dorsal swelling faintly indicated, suture not depressed, the punctures large and deep and the interspaces between the rows very slightly convex. Pygidium transverse, rounded.

Underside punctate, two rows on abdominal segments 1-3. Legs brownish black, claws rufescent.

Panastius gen. nov.

♂. Rostrum apice paululo dilatatum, cum capite reticulato-punctatum. Oculus ellipticus, lateralis, grosse granulatus. Pronotum punctatum, haud plicatum, interspatiis nitidis, carina antebasali ad latera haud antrosum flexa. Elytra tumida, antice contracta et depressa, impunctata, parte basali excepta. Prosternum ante coxas latitudine coxarum duplo longius. Abdomen fere impunctatum. Tarsorum segmentum primum quarto brevius, unguis dente brevi.—Genotypus: **P. turneri** sp. nov.

In general appearance similar to *Astianus cinctus* sp. nov., but very different in detail. The interspaces of the punctures of the pronotum are flat instead of forming longitudinal ridges, and the punctures of the elytra are confined to the depressed basal area, the rows only extending farther back at suture and side-margin.

10. *Panastius turneri* sp. nov.

♂. Rufus, hic et inde albo signatus, elytris basi et marginibus exceptis nigris. Pronotum convexum, longitudine paululum latius, punctis grossis dispersis notatum. Elytra basi contracta, gibbositate subbasali alta instructa. Pygidium truncate.

Long. 2.8 mm.

Pondoland: Port St. John, xii.1923, 1 ♂.

Proboscis nearly twice as broad as long (22:12), less strongly widened apically than in *A. cinctus*. Cariniform edge of antennal groove posteriorly extending downward. Antenna entirely pale rufous, proportions essentially as in *A. cinctus*. Prothorax practically as long as broad (43:44), rounded at sides not swollen, evenly convex dorsally and laterally, the upper- and undersides not separated, the punctures deep and evenly distributed, their interspaces flat, somewhat narrower than the punctures; along carina some white pubescence (probably forming 3 spots in well-preserved specimens), a median spot at apex and a diffuse patch on underside also white, inconspicuous. Scutellum white.

Elytra one-fourth longer than broad, impunctate except on basal fourth, the sutural and lateral rows of punctures extending farther back than one-fourth; behind the round high subbasal callosity a transverse depression bearing some white pubescence, which is concentrated into a dot near lateral margin, behind middle a dorsal white spot (the white pubescence partially rubbed off in this specimen). Pygidium transverse, slightly narrowing apicad, truncate, with the angles rounded.

Underside of thorax coarsely punctate; mesepisternum white. Abdomen with a few shallow punctures, practically impunctate, flattened, last segment truncate.

ON THE *LATREILLEI*-GROUP OF EASTERN PAPILIOS

By DR. KARL JORDAN

(With Plates VI and VII.)

SINCE the account on the Eastern Swallowtails was published in Seitz, *Macrolep.* ix, in 1908 and 1909, many new forms of *Papilio* have been discovered, and the material in British collections has much increased. The acquisition, moreover, of the bulk of the Papilios of the Oberthür collection, inclusive of the types, by Mr. John Levick, of Birmingham, has added considerably to the scientific value of collections in Great Britain, greatly facilitating research on the Chinese and Himalayan Papilios, in which that collection was particularly rich. This influx of material is an inducement to revise what has been written on the systematics of the Oriental Papilios.

As on the occasion of a meeting of the Entomological Club held at the Tring Museum we were asked to exhibit the difficult *latreillei*-group of Papilios, the species belonging thereto have been re-studied by us, and we now offer a recast of the systematics of this group based on the collections of John Levick, the British Museum, and the Tring Museum. There are still several points on which we are uncertain on account of lack of specimens or of sufficiently accurate data of distribution, North-Eastern Burma, Yunnan, and the mountains of Laos and Tonkin especially being inadequately known as regards the Papilios (and other insects). We have indicated these doubtful points, and it is to be hoped that explorers of these countries interested in Lepidoptera will, in the near future, clear up what is obscure to us.

These Papilios are evidently derived from an ancestral form in which the light-coloured hindwing was ornamented with a discal and a submarginal row of black spots. The enlargement of the black spots restricted the light colouring until a discal band, a series of submarginal light spots between the veins and marginal spots at the ends of the veins was all that was left of the light ground. The red spot at the end of the tail observed in several species of this group corresponds to the red spots at the ends of the veins, and the submarginal lunules are the remnants of the interspaces between round black spots, which explains their frequent resemblance to an hour-glass. From this *latreillei*-like form the *philoxenus*-pattern was derived by the suppression of the posterior discal light-coloured spots in consequence of the further advance of black, and the fusion of the anterior discal spots of the original ground of the wing with the submarginal spots to form large submarginal patches. The last but one stage is a hindwing with all the submarginal spots small, and the final stage, not yet reached, would be a hindwing without any spots of the original ground left.

There are apparently two lines of species in the *latreillei*-group. The one series, with red tail-spot, begins with a *latreillei*-pattern and divides up into the *philoxenus*-branch ending with almost entirely black specimens of *P. philoxenus lama*, and the *dasarada*-branch, the youngest development of which are the black-tailed *P. dasarada melanurus* and *P. hedistus*. The second series begins with *P. adamsi* and ends with *P. alcinous alcinous*, the red tail-spot never being

present in any of the various forms. *P. crassipes* is a peculiar offshoot of the first series, and *P. daemonius* belongs to the second. They disturb the sequence of species in the linear arrangement and, for that reason only, have here been placed between the two main branches of the *latreillei*-group.

In the figures on Plate VI the hairs in the marginal area of the clasper are diagrammatical.

1. *Papilio polla* Nicév. (1897).

♂. *Papilio (Byasa) polla* Nicéville, *Journ. Bombay N.H. Soc.* x, p. 633, no. 2 (1897) (N. Shan States; N. Chin Hills); Watson, *ibid.* l.c., p. 671 no. 235 (1897) (N. Chin Hills); Nicév., *Journ. As. Soc. Bengal*, lvi, p. 565, tab. 4, fig. 28 (1897) (N. Shan States, east of Bhamo).

♂♀. *Byasa polla*, Moore, *Lep. Ind.* v, p. 166, tab. 429, fig. 2. ♂ (1902) (descr. of ♂♀; N. Shan States; N. Chin Hills).

Papilio polla, Bingham, *Fauna Brit. Ind., Butterfl.* ii, p. 30, no. 499 (1907) (N. Shan States; N. Chin Hills).

Papilio latreillei polla, Jordan, in Seitz, *Gross-Schmett.* ix, p. 31 (1908).

Papilio polla, Tytler, *Journ. Bombay N.H. Soc.* xxiii, p. 513 (1915) (Naga Hills and Manipur).

Byasa polla, Evans, *ibid.* xxix, p. 233 (1924) ("Assam—N. Burma").

When I placed this insect as a subspecies of *P. latreillei*, in Seitz ix., I had only seen a damaged ♀. Though *P. polla* is closely related to *P. latreillei* it is distinct and occurs in a region where *P. latreillei* also is represented.

Hindwing with 4 white discal spots of which the anterior one is much the largest; distal margin of ♂ edged with red from scent-fold to tail, the latter broadly tipped with red; in ♀ this red colouring reduced to spots at apices of tail and marginal lobes. Armature of clasper (Pl. VI, fig. 1) nearly as in *P. latreillei*, but the ventral margin of the harpe distally enlarged into a fairly prominent dentate lobe; penis and anal segment as in *P. latreillei*.

Hab. Naga Hills, Manipur, N. Chin Hills, and N. Shan States, in May and June.

2. *Papilio latreillei* Don. (1826).

Papilio latreillei Donovan, *Nat. Repos.* ii, tab. 140 (1826) (Nepal).

Papilio minereus Gray, *Zool. Misc.* p. 32 (1831) (Nepal).

The range of this species extends much farther east and north-east than was known in 1908, three new subspecies having been discovered since the publication of Seitz ix.

a. *P. latreillei genestieri* Oberth. (1918) (Pl. VII, fig. 6).

Papilio latreillei, Oberthür, *Bull. Soc. Ent. France*, p. 137 (1908) (Tibet).

♂♀. *Papilio latreillei genestieri* id., l.c., p. 187 (1918) (Su-tchouen: Siao-lou, Tehang-chau-pin, haut Lou-tse-kiang).

Paler than the other three known subspecies, being of a peculiar slate colour; hindwing with four large white patches from R³ to M², the anterior patch very much larger than in any specimen of *P. l. latreillei*. Genitalia of ♂ as in *P. l. latreillei*; armature of clasper (Pl. VI, fig. 2) a broadly rounded ridge which is strongly dentate distally and bears one or more teeth along the ventral side, the ridge not being different from that of *P. l. latreillei*; the number and size of the teeth variable; apical process of penis slightly curved towards the left side.

Hab. Szechuen; type in coll. John Levick.

P. latreillei must be expected to occur in Yunnan as well; we have not seen specimens from that country.

b. *P. latreillei robus* subsp. nov.

♂♀. Larger and darker than the previous subspecies, agreeing more closely with the following one, from which it differs in the white patches of the hindwing being longer, their distance from the submarginal spots being smaller than in *P. l. kabrua*.—The teeth of the harpe are confined to the apex in the only clasper examined (Pl. VI, fig. 3).

Hab. Tonkin: Ngai Tio, 4,800 feet, iv. 1924 (H. Stevens). 2 ♂♂, 6 ♀♀ in Mus. Brit.

c. *P. latreillei kabrua* Tytler (1915).

Papilio kabrua Tytler, *Journ. Bombay N.H. Soc.* xxxiii, p. 513 (1915) (Naga Hills and Manipur, v. vi.).

Byasa latreillei (!) *kabrua*, Evans, *ibid.* xxix, p. 233 (1923) (Assam to N. Burma).

In general colouring like fresh *P. l. latreillei* and *P. l. robus*. The anterior discal spot of the hindwing large, but shorter than in *P. l. robus*.

Hab. Naga Hills and Manipur: probably more widely distributed in the mountains of Burma.

d. *P. latreillei latreillei* Don. (1826).

Cf. *Nor. Zool.* ii, p. 261, no. 56 (1895) (literature).

Papilio (*Byasa*) *latreillei*, Mackin. & Nicéev., *Journ. Bombay N.H. Soc.* xi, p. 592, no. 250 (1898), (Mussoorie).

Byasa latreillei, Moore, *Lep. Ind.* v, p. 165, tab. 430, fig. 1, 1a, 1b, ♂, 1c, ♀ (1902) (N.W. & E. Himalayas).

Papilio latreillei, Bingham, *Fauna Brit. Ind., Butterfl.* ii, p. 29, no. 497, fig. 5 (1907) (Nepal, Sikkim, Assam).

Papilio latreillei latreillei, Jordan, in Seitz, *Gross-Schmett.* ix, p. 31 (1908) (N.W. India, Nepal, Sikkim).

Papilio latreillei, Hannyngton, *Journ. Bombay N.H. Soc.* xx, p. 361, no. 159 (1910) (Kumaon, v. & viii.); Oberth., *Bull. Soc. Ent. France*, p. 186 (1918) (Sikkim).

Byasa latreillei latreillei, Evans, *Journ. Bombay N.H. Soc.* xxix, p. 233 (1923) (Garhwal to Sikkim).

The discal spot between R³ and R² of hindwing (veins 5 and 6) is either small or absent. As in the other three subspecies, the scales under the white wool of the scent-organ of the ♂ entire, narrow, lanceolate; mid- and hind-tibiae not swollen in ♂, the spines of the upperside not so numerous and not so short as in swollen tibiae, along the outside from base to apex a stripe bare of spines. The dentition of the harpe of the clasper variable, sometimes the ventral margin with several teeth, sometimes without.

Hab. N.W. India to Sikkim, at higher elevation; may be expected to occur in Bhutan.

3. *Papilio philoxenus* Gray (1831).

Papilio philoxenus Gray, *Zool. Misc.* p. 32 (1831) (Nepal); Jord., in Seitz, *Gross-Schmett.* ix, p. 31 (1908).

For descriptions of the subspecies cf. Jordan, *l.c.*, where we mentioned that *P. philoxenus* differs from all its allies in the anal tergite of the ♂ bearing a dorsal process. We take this opportunity to figure this segment, as well as the clasper. The dorsal process (Pl. VI, figs. 4, 5) inclines distad and varies

somewhat in length: occasionally there is a small tubercle at each side of it. Where the anal sternite (scaphium) touches the tergite the latter bears a small longitudinal ridge on each side. The anal sternite is proximally strongly convex on the dorsal side. The setiferous ventral area of the innerside of the clasper is distally much broader than in the proximal half, the ventral margin of the harpe slanting upwards: the harpe is roughly triangular, with the basal ventral angle produced into a large conical process, the distal angle is pointed or more or less obtuse, usually bearing one or more small teeth, the proximal process and the ventral margin dentate, the teeth small and sharp and very variable in number (Pl. VI, figs. 6, 7). Penis-sheath pale to the apex, not sharply pointed. The wool of the scent-organ sepia with a slight tint of grey; the scales under the wool in the middle of the fold lanceolate, entire.

a. *P. philoxenus lama* Oberth.

- Papilio lama* Oberthür, *Ét. d'Ent.* ii, p. 15, tab. 3, fig. 1, ♂ (1876) (Moupin); *id.*, l.c. iv, p. 43, no. 50 (1879).
Papilio philoxenus, Oberthür, l.c. xii, p. 14 (1886) (Tse-Kou); Leech, *Butt. China*, p. 537 (1893).
Papilio philoxenus lama, Rothschild, *Nor. Zool.* ii, p. 266, no. 61, *b* (1895).
Byasa lama, Moore, *Lep. Ind.* v, p. 172 (1902).
Papilio lama, Seitz, *Gross-Schmett.* i, p. 8, tab. 2a, ♂ (1907).
Papilio philoxenus lama, Jordan, *ibid.* ix, p. 32 (1908).
Papilio philoxenus v. polyeuctes, Draeseke, *Iris*, xxxvii, p. 55 (1923) (Wassekou & Tatsienlu).
Papilio philoxenus v. rosens Draeseke, l.c. (*ibid.*; white spots suffused with red).
Papilio lama, Draeseke, l.c. (*ibid.*).

The darkest specimens are very similar to *P. alcinous confusus*, but the tail has always a trace of the red spot, at least on the underside. The other extreme is almost indistinguishable from N.W. Indian *P. ph. philoxenus*. In all specimens the red of the head is much mixed with black hairs.

Hab. Western China: Northern Kashmir.

b. *P. philoxenus philoxenus* Gray (1831).

- For literature cf. *Nor. Zool.* ii, p. 264 (1895).
Byasa philoxenus, Moore, *Lep. Ind.* v, p. 159, tab. 426, fig. 1, l. & p., 1a, 1b, ♂, 1c, 1d, ♀ (1902) (partim).
Papilio philoxenus, Bingham, in Blanford, *Fauna Brit. Ind., Butterfl.* ii, p. 31 (1907) (partim); Han-nyngt., *Journ. Bombay N.H. Soc.* xx, p. 361, no. 160 (1910) (Kumaon, v., viii, ix.).
Papilio philoxenus philoxenus, Jordan, in Seitz, *Gross-Schmett.* ix, p. 32, tab. 19a, ♂ (1908).
Byasa philoxenus philoxenus, Evans, *Journ. Bombay N.H. Soc.* xxix, p. 233 (1923).
Papilio philoxenus alcinous, Fruhstorfer, *Ent. Zeits.* (Stuttgart) xxii, p. 72 (1908) (N.W. India).

There is no sharp line of demarcation between this subspecies and the next one, neither geographically nor morphologically.

Hab. S. Kashmir to Nepal.

c. *P. philoxenus polyeuctes* Doubl. (1842).

- For literature cf. *Nor. Zool.* ii, p. 265 (1895).
Papilio (Byasa) philoxenus, Watson, *Journ. Bombay N.H. Soc.* x, p. 671, no. 276 (1897) (N. Chin Hills).
Byasa philoxenus, Moore, l.c. (1902) (partim).
Papilio philoxenus, Fruhstorfer, *Berlin. Ent. Zeits.* xlvii, p. 171 (1902) (S. Annam); Bingham, l.c. (1907) (partim).
Papilio philoxenus hostilius Fruhstorfer, *Ent. Zeits.* (Stuttgart) xxii, p. 72 (1908) (S. Annam).

Papilio philoxenus polygenes, Jordan, in Seitz, *Gross-Schmett.* ix, p. 32 (1908).

Papilio philoxenus, Tytler, *Journ. Bombay N.H. Soc.* xxi, p. 589, no. 197 (1912) (Naga Hills); South, *ibid.* xxii, p. 364, no. 117 (1913) (Mishmi).

Papilio philoxenus var. *polymitis* Tytler, l.c. sub no. 197 (1912) (laps. cal. ?).

Papilio nepenthis Ehrman, *Bull. Brooklyn Ent. Soc.* xv, p. 22 (1920) (Assam); Holland, *Ann. Carnegie Mus.* xvii, p. 323 (1924) (= *P. philoxenus*).

Papilio philoxenus polygenes, Evans, *Journ. Bombay N.H. Soc.* xxix, p. 233 (1923).

This subspecies is known as far east as Tonkin. As it descends to low altitudes in the hills one would expect it (or a closely allied form) to occur in S.E. China; but no representative of *P. philoxenus* is known from that district, though the species recurs on Formosa.

Hab. Sikkim to Yunnan, Tonkin, S. Annam and Tenasserim.

d. *P. philoxenus termessus* Fruhst. (1908).

Papilio philoxenus termessus Fruhstorfer, *Ent. Zeits.* (Stuttgart) xxii, p. 46 (1908) (Formosa); Jord., in Seitz, *Gross-Schmett.* ix, p. 32 (1908).

Papilio philoxenus, Matsumura, *Ent. Zeits.* (Stuttgart) xxii, p. 54 (1908) (Formosa).

Papilio philoxenus var. *termessus*, Heyne, *Supplem. Ent.* ii, p. 68, no. 3 (1913).

The island of Formosa being so far away from the continental range of the species, one should have expected this subspecies to show some constant differences in the genital armature; but all I can find is that the distal angle of the harpe is more often produced into a short-pointed process than in continental specimens.

Hab. Formosa.

4. *Papilio dasarada* Moore (1857).

For literature up to 1894 cf. *Nor. Zool.* ii, p. 266, sub ab. *dasarada* (1895).

Byasa dasarada, Moore, *Lep. Ind.* v, p. 161, tab. 427, fig. 1, ♂, 1a, b, ♀ (1902) (Sikkim; Assam; Burma; Tenasserim; "Malacca & Tonkin" probably = *P. philoxenus*).

Papilio philoxenus var. *dasarada*, Bingham, *Fauna Brit. Ind., Butterfl.* ii, p. 31 (1907).

Papilio dasarada, Jordan, in Seitz, *Gross-Schmett.* ix, p. 32 (1908).

For description cf. Jordan, l.c., where some structural differences between *P. dasarada* and *P. philoxenus* are mentioned. The anal tergite of the ♂ lacks the dorsal process always found in *P. philoxenus*; the penis-sheath ends with a gradually narrowed, sharply pointed, well-chitinised, straight process; harpe of clasper longer than in *P. philoxenus*, its teeth are larger and more numerous. The scales under the dark wool of the scent-fold broad, entire.

P. dasarada is not yet known from China proper, its range being much more restricted than that of *P. philoxenus*. The two species are usually described as differing in size, *P. dasarada* being said to be larger than *P. philoxenus*; but that is only partially true. No specimen of *P. philoxenus* attains the size of the largest *P. dasarada*, but among the North Indian *P. dasarada* there are many specimens which are smaller than the average *P. philoxenus*, our smallest Assamese *P. dasarada*-♂ having the forewing 50 mm. long, whereas this wing measures 65 mm. in our largest *P. philoxenus* from the same district. In diagnostic work on Lepidoptera size, as a rule, is of no great account.

Hab. N.W. India to Yunnan, Tenasserim, and Tonkin; also said to occur on the Malay Peninsula, which is probably a mistake, the specimens belonging most likely to *P. philoxenus*. In 1902 (*Berl. Ent. Zeits.* xvii, p. 171) Fruhstorfer stated that *dasarada* was the dry season form of *P. philoxenus*, which is quite erroneous; Fruhstorfer had a weakness for statements of this kind.

a. P. dasarada ravana Moore (1857).

For literature up to 1904 cf. *Nor. Zool.* ii, p. 262, no. 59 (1895).

Papilio ravana, Rothschild, *Nor. Zool.* ii, p. 262, no. 59 (1895).

Papilio (Byasa) ravana, Mackin. & Nicéev., *Journ. Bombay N.H. Soc.* xi, p. 592, no. 251 (1898) (Tchri Garhwal, common, iv, v.).

Byasa ravana, Moore, *Lep. Ind.* v, p. 163, tab. 428, fig. 1, *1a*, ♂, *1b*, ♀ (1902) (Western Himalayas).

Papilio ravana, Bingham, *Fauna Brit. Ind., Butterfl.* ii, p. 33, no. 501 (1907) (Kashmir: Kulu; Mussuri; Kumaon); Seitz, *Gross-Schmett.* i, p. 8, tab. 1, *b*, ♂♂ (1907).

Papilio dasarada ravana, Jordan, *ibid.* ix, p. 32 (1908).

Papilio ravana, Hamyngton, *Journ. Bombay N.H. Soc.* xx, p. 875 (1911) (life hist.).

Byasa dasarada ravana, Evans, *ibid.* xxix, p. 233 (1923) (Kashmir to Kumaon).

Teeth of harpe of ♂ smaller than in *P. d. dasarada*, the proximal process shorter and often broader (Pl. VI, fig. 8), and the ventral margin more or less dilated distally of the basal process. The apical process of the penis-sheath long, and usually narrower than in *P. d. dasarada*.

Hab. Kashmir to Western Nepal.

b. P. dasarada dasarada Moore (1857).

For literature up to 1894 cf. *Nor. Zool.* ii, p. 266, sub ab. *dasarada*.

Byasa dasarada, Moore, *Lep. Ind.* v, p. 161, tab. 427, fig. 1, ♂, *1a*, ♀ (1902).

Papilio philoxenus var. *dasarada*, Bingham, *Fauna Brit. Ind., Butterfl.* ii, p. 31, sub no. 500 (1907).

Papilio philoxenus dasarada, Jordan, in Seitz, *Gross-Schmett.* ix, p. 32, tab. 19, *b*, (1908).

Papilio dasarada, Tytler, *Journ. Bombay N.H. Soc.* xxi, p. 589, no. 198 (1912) (Naga Hills).

Papilio philoxenus form *dasarada*, South, *Journ. Bombay N.H. Soc.* xxii, p. 365, sub no. 117 (1913) (Panyé, S.E. Tibet, vii.).

Byasa dasarada dasarada, Evans, *ibid.* xxix, p. 233 (1923) (Sikkim to Assam).

The proximal process of the harpe long, dentate or simply conical; the dentition variable, most of the teeth of the ventral margin long, the distal end of the harpe more or less broadly rounded, dentate, the teeth pointing downward (Pl. VI, fig. 9).

In one of our ♂♂ from Cherrapunji, Assam, the genital armature is abnormal: the hook of the anal segment is shortened and broadened, being shorter than the sternite (scaphium); the proximal process of the left harpe is short, flat, apically divided into two teeth, the teeth of the ventral margin of the harpe quite small; apical process of penis-sheath broad and the lateral flap very large. A small specimen: length of forewing 52 mm. Right clasper not properly developed. Other specimens, small and large, from the same place have the armature normal. That aberrations in the genital armature are not often found is very natural, as only a small proportion of the specimens in collections are examined as to their genital structures.

Hab. Sikkim, Assam, Burma: no doubt also in Eastern Nepal.

c. P. dasarada barata Roths. (1908).

Papilio philoxenus & *P. dasarada*, auct., partim (Tenasserim, Tonkin).

♂. *Papilio dasarada barata* Rothschild, *Nor. Zool.* xv, p. 168, no. 18 (1908) (Shan States and Tenasserim; *P. dasarada* a species distinct from *P. philoxenus*): Jord., in Seitz, *Gross-Schmett.* ix, p. 32 (1908); Stockley, *Journ. Bombay N.H. Soc.* xxx, p. 418 (1925) (west of Raheng, Western Siam).

Byasa dasarada barata, Evans, *Journ. Bombay N.H. Soc.* xxix, p. 233 (1923) ("Burma").

The proximal process of the harpe of the clasper flatter than in *P. d. dasarada*, the angle between it and the ventral margin smaller, the apex of the clasper

more produced distad, the teeth more numerous than in the preceding race, frequently arranged in two irregular rows, the apical teeth directed distad or upward rather than downward (Pl. VI, fig. 10).

Hab. Tenasserim, Shan States, and Tonkin.

d. P. dasarada melanurus Roths. (1905).

♂♂. *Papilio philoxenus melanurus* Rothschild, *Nov. Zool.* xii, p. 78, no. 1 (1905) (Hainan, ♂, v.)
 Joie, & Talb., *Bull. Hill Mus.* i, p. 167, no. 1, tab. 19, fig. 1, ♀ (1921) (Hainan, viii.; distal half of both hindwings missing); *ibid.*, l.c. p. 517, no. 5 (1924) (Hainan, vii. & ix., ♂♂♀).

Harpe similar to that of *P. d. barata*, proximal process longer, apex less produced and its teeth more or less directed downwards (Pl. VI, fig. 11).

Hab. Hainan.

e. P. dasarada ouvardi Oberth. (1920).

Papilio ravana ouvardi Oberthür, *Bull. Soc. Ent. France*, p. 202 (1920) (Yunnan).

The name *ouvardi* is based on a single female, which Oberthür described as a male, comparing it with *P. d. ravana*. The specimen is now in the collection of Mr. Levick, where I have examined it (externally) without discovering any difference from *P. dasarada*. We have, from Tali, Yunnan, a ♀ in which the markings of the hindwing are much larger than in the type of *ouvardi*, there being in this ♀ a complete row of markings between the large white patch and the anal spot, and two large spots between the patch and the costal margin, as is sometimes the case in Indian ♀♀; the outer half of the cell is white on the underside, on the upperside this cell-patch is reduced; the underside of the forewing has a large diffuse whitish patch, which frequently occurs in Indian specimens with extended white markings on the hindwing. It is possible that this Tali ♀ represents *P. dasarada* in Yunnan, and that the ♀ *ouvardi* is that sex of the ♂ described below as a new species. The arrival of more material will settle the question.

Hab. Yunnan.

5. *Papilio hedistus* sp. nov. (Pl. VII, fig. 5 ♂).

♂. Like *P. dasarada*: the tail in length and colour as in *P. d. melanurus*, i.e. longer than in Indian specimens of *P. dasarada* and without a trace of a red spot; the wing slightly less wide between the lobe in front of the tail and the second lobe behind the tail; in front of the large white patch a large rounded spot, the last three submarginal spots red, the one in front of the tail paler red than the posterior two; on underside these three spots and the anal one bright red, and below apex of costal vein a small white spot. Head and body deeper red than in *P. dasarada*. Scent-organ as in *P. dasarada*. The main difference is in the harpe, of which the anterior process is short and the apex much prolonged obliquely downward (Pl. VI, fig. 12). As in *P. d. melanurus* from Hainan the harpe is decidedly of the *dasarada*-type, it would be very singular if in Yunnan *dasarada* it deviated very considerably. For that reason I regard the single specimen here figured as representing a species distinct from *P. dasarada*.

Hab. Yunnan: Tali, 1 ♂ in Mus. Tring.

The specimen bears a close resemblance in shape and markings to two of the *Papilio*s which are figured on the same plate and also occur in Yunnan.

6. *Papilio crassipes* Oberth. (1893).

- Papilio crassipes* Oberthür. *Ét. d'Ent.* xvii. p. 2. tab. 4. fig. 38, 38a. ♂ (1893) (Tonkin); Roths., *Nor. Zool.* ii. p. 262, no. 57 (1895); Fruhst., *Soc. Ent.* xvi. p. 113 (1901) (descript. of ♂); id., *Berlin. Ent. Zeits.* xlvii. p. 170 (1902) (Than-Moi, Tonkin, 1,000 feet).
Byasa crassipes, Moore, *Lep. Ind.* v. p. 171. tab. 434. fig. 2. ♂ (1902) (Tonkin; S. Shan States).
Papilio crassipes, Bingham, *Fauna Brit. Ind., Butterfl.* ii. p. 34. no. 503 (1907); Jord., in Seitz, *Gross-Schmett.* ix. p. 31 (1908) (Tonkin; Shan States); Tytler, *Journ. Bom'ay N.H. Soc.* xxiii. p. 513 (1915) (Manipur, ♂♂♀♀).
Byasa crassipes, Evans, *ibid.*, xxix. p. 233 (1923) (Manipur to Shan States).

A remarkable species, recalling in the shape of the hindwing to some extent the Chinese *P. elwesi* Leech (1889). The hindtibia of the ♂ is broader than in any other *Papilio*. At the base of the anal tergite of the ♂ there is a short process at each side; clasper (Pl. VI. fig. 13) with an apical sinus, below which there is a short sharp process not found in any other species of this group; harpe with a proximal, triangular, denticulate process, above which there is a short dentate ridge, ventral margin of harpe incrassate, gradually rounded, bearing a few small teeth, apex conical, sharply pointed, curved mesad, i.e. away from the clasper, lying above the anal tergite when the elaspers are closed.

The claws of the mid- and hindtarsi of our only specimen (♂) are more strongly asymmetrical than in the other species of this group.

Hab. Manipur, Shan States, and Tonkin; type in coll. John Levick.

7. *Papilio daemonius* Alphér. (1895).

- ♂♀. *Papilio daemonius* Alphéraky. *Iris.* viii. p. 180 (1895) (Kham near Batong, iv., vii.); Roths., *Nor. Zool.* ii. p. 503 (1895) (= *fatuus*, a distinct species, not var. of *plutonius*); Jord., in Seitz, *Gross-Schmett.* ix. p. 32 (1908).

Not very nearly related to any of the other known species of this group: cell of hindwing much broader than in the other species. ♂: The white wool in the scent-fold of the ♂ long, the scales under the wool deeply divided into two or three teeth; anal sternite (= scaphium) broad, its apex truncate-sinuate, the upper lobe pointed, the lower one rounded; harpe resembling a short triangular shovel with the sides dentate and bent upwards, the ventral margin deeply sinuate near base, and proximally of this sinus a conical denticulate process (Pl. VI. fig. 14); tibiae not swollen, spines on upperside of mid- and hindtibiae not much more numerous than on foretibia. ♀ as pale as that sex of *P. alcinous alcinous*, with a black border to the hindwing bearing pale reddish submarginal spots.

In both sexes the anal spot of the underside is double, consisting of a spot near the margin and a smaller one above the lower median vein, which is black. Tail without trace of a red spot.

The "seal" of our single ♀ is very long and narrow and directed straight forward; a deep median slit divides it into two prongs, of which the left one is not developed in our specimen. The shape of the seal, probably, is variable.

Hab. Tibet and Yunnan.

a. **P. daemonius daemonius** Alphér. (1895).

P. d. Alphéraky, *l.c.* (1895).

Papilio alcimius plutonius ab. *fatuus* Rothschild, *Nor. Zool.* ii. p. 272, tab. 6, fig. 31, 42, genit. (1895) (Ta-tsien-lu).

Papilio alcimius daemonius, Seitz, *Gross-Schmelt.* i. p. 33 (1907).

Papilio daemonius, Oberthür, *Bull. Soc. Ent. France*, p. 137, no. 2 (1908) (Bathong, not Ta-tsien-lou); Jord., in Seitz, *Gross-Schmelt.* ix. p. 32 (1908).

Papilio plutonius var. *daemonius*, Draescke, *Iris*, xxxvii. p. 56 (1923) (Batong).

According to Oberthür, this *Papilio* does not occur at Ta-tsien-lu. We are responsible for the record from that place, the only specimen we had when we published, in 1895, the *Revision of the Papilios of the Eastern Hemisphere exclusive of Africa* bears the printed label: Thibet, Tatsienlou, Mgr. F. Biet. We had no reason to doubt the locality. But as Oberthür received the species only from Bathong it is highly probable that a wrong label was put on the specimen before it came to the Tring Museum.

Hab. Bathong, Tibet.

b. **P. daemonius yunnana** Oberth. (1908).

Papilio daemonius var. *yunnana* Oberthür, *Bull. Soc. Ent. France*, p. 137, sub no. 2 (1908) (Tapintze, Yunnan, 3 ♂♂),

Papilio daemonius yunnana, Jordan, in Seitz, *Gross-Schmelt.* ix. p. 32 (1908).

One ♂ in coll. John Levick is all I have seen of *P. daemonius* from Yunnan: in this specimen the submarginal spots are larger than in *P. d. daemonius*. Oberthür says of *yunnana* that "les taches carminées des ailes inférieures tendent à blanchir"; in the above specimen the spots, on the contrary, are a little deeper red than in *P. d. daemonius*, at least on the underside. Further material is necessary before one can arrive at a definite opinion as to whether *yunnana* is more or less constantly distinguishable from Tibetan specimens.

The head and antennae do not belong to the above specimen of *yunnana*.

Hab. Tapintze, Yunnan.

8. **Papilio adamsoni** Grose Smith (1886).

♂. *Papilio adamsoni* Grose Smith, *Ann. Mag. N.H.* (5), xviii. p. 149 (1886) (Salween R.); id. & Kirby, *Rhop. Exot.* i. *Papilio* p. 11, tab. 5, fig. 3, 4 (1888).

♂♀ *Papilio (Byasa) minercoides*, Elwes & Nicév., *Journ. As. Soc. Beng.* Iv. p. 435, no. 133, tab. 20, fig. 2, 2b (♂), 3 (♀) (1887) (Simbyoodine and Ponekai).

Papilio adamsoni, Rothschild, *Nor. Zool.* ii. p. 262, no. 58 (1895); Nicév., *Journ. Bombay N.H. Soc.* xii. p. 334, no. 40 (1899) (Tenasserim, i. iii.).

Byasa adamsoni, Moore, *Lep. Ind.* v. p. 167, tab. 431, fig. 1, 1a (♂), 1b (♀) (1902).

Papilio adamsoni, Bingham, *Fauna Brit. Ind., Butterfl.* ii. p. 30, no. 498 (1907) (Shan States, Tenasserim); Jord., in Seitz, *Gross-Schmelt.* ix. p. 31, tab. 19c. (1908).

Byasa adamsoni, Evans, *Journ. Bombay N.H. Soc.* xxix. p. 232 (1923).

Tail without trace of a red spot.

Scales under the white wool of the scent-organ of the ♂ entire, irregularly elliptical. Armature of clasper (Pl. VI, fig. 15) a non-dentate ridge which ends basally and distally in a pointed process, the distal one being the longer.

Hab. Shan States and Tenasserim.

9. **Papilio nevillei** Wood-Mas. (1882) (Pl. VII. figs 1 ♂, 2 ♀).

For literature up to 1894 cf. *Nov. Zool.* ii. p. 263, no. 60 (1895).

Byasa nevillei, Moore, *Lep. Ind.* v. p. 164, tab. 429, fig. 1. ♂ (1902) (Cachar; W. China).

Papilio nevillei, Bingham, *Fauna Brit. Ind., Butterfl.* ii. p. 33, no. 502 (1907); Seitz, *Gross-Schmelt.* i. p. 8, tab. 1c (1907); Jord., *ibid.* ix. p. 31 (1908).

Papilio cheutsong=luctus Oberthür, *Ét. Lép. Comp.* ix. i. p. 45, tab. 252, fig. 2133. ♂ (1913) (Tatsien-lou).

Byasa nevillei, Evans, *Journ. Bombay N.H. Soc.* xxix. p. 233 (1923) (Assam).

Papilio nevillei (?), Draeseke, *Iris.* xxxvii. p. 55 (1923) (Wassekon).

The specimens from N.E. Assam, West China, and Yunnan are alike in structure. The harpe of the ♂ is very characteristic (Pl. VI. fig. 16), bearing proximally a knob-like process; the teeth are restricted to the obtuse apex or to the apical third. The scales beneath the creamy white wool of the scent-fold are nearly all bi- or tridentate. Mid- and hindtibiae thinner than in *P. hedistus*, *P. dasarada*, etc., the spines of the upperside less numerous.

Tail always without red spot. Sometimes the markings of the hindwing almost entirely suppressed, = ab. *luctus* Oberth. (1913). Intergradations also are known.

In the ♂ specimen figured on our Plate VII the left forewing is abnormal, there being a cross-vein between R^3 and M^1 and between M^1 and M^2 .

Hab. N.E. Assam, Yunnan; Western China.

10. **Papilio laos** Riley & Godf. (1927).

♂. *Papilio laos* Riley and Godfrey, *Journ. Nat. Hist. Soc. Siam.* iv. p. 168, no. 1, tab. 4, fig. 1 (1927) (Ban Na Sao, French Laos, ii.).

No spot on tail; on upperside of hindwing 4 submarginal transverse red bars; on underside 5 such spots and an anal one, and in addition three small discal spots. Scent-wool nearly white. Harpe (Pl. VI. fig. 17) with three ventral teeth of which the proximal one is the largest, apex produced into a pointed process the sides of which are rounded.

Hab. French Laos, 1 ♂ (type) in Mus. Brit.

11. **Papilio menciuis** Feld. (1862).

♂♀. *Papilio menciuis* Felder, *Wien. Ent. Mon.* vi. p. 22, no. 1 (1862) (Xingpo); Jord., in Seitz, *Gross-Schmelt.* ix. p. 33 (1908).

The four Chinese Swallowtails with black tails and red submarginal lunules on the hindwing are easily distinguished in the ♂-sex by the scent-fold and the armature of the claspers. To facilitate identification it is advisable to open the scent-folds when setting specimens. The light colour of the wool separates *P. impediens* and *P. menciuis* readily from *P. alcinous confusus* and *P. plutonius*. In all these species the hindtibia is distinctly swollen and bears very numerous spines on the upperside, there being, on the outer surface, no spineless stripe above the ventral spines.

In *P. menciuis* the harpe always bears two proximal processes (Pl. VI. fig. 18), of which the distal one is sometimes dentate; the harpe narrows to apex, the tip being curved upwards; the ventral margin without distinct teeth.

Hab. China and Yunnan.

a. P. mencijs rhadinus subsp. nov. (Pl. VII. fig. 3 ♂, 4 ♀).

♂♀. In appearance almost identical with *P. nevilli*; the three posterior spots of the upperside deeper red, tail longer, lobe behind tail less projecting, in anterior half the hindwing somewhat narrower, the anterior veins arising from cell shorter, therefore the white patch also shorter, Sc^2 (= 7) more curved upwards, on underside the cell of the hindwing with the two lines which are so distinct in *P. nevilli* barely indicated.

In ♂ the hindtibia distinctly swollen, with the spines more numerous than in *P. nevilli*; the wool of the scent-fold a little darker, the scales under the wool nearly all entire; the harpe of the clasper (Pl. VI. fig. 18) quite different, agreeing with that of *P. m. mencijs*.

Length of forewing: 40–49 mm.

Hab. Yunnan: Tapintze (Rev. P. Delaway), 2 pairs in coll. John Levick, ex coll. Oberthür; also in Mus. Brit.

b. P. mencijs mencijs Feld. (1862).

The older references might with advantage be discarded, it being very doubtful as to whether this or some other species was meant.

Papilio alcinous mencijs, Rothschild, *Nov. Zool.* ii. p. 268 (partim), tab. I. fig. 21–25, 39, genit. (1895); Seitz, *Gross-Schmett.* i. p. 9 (1907) (nec fig.).

Papilio mencijs, Oberthür, *Bull. Soc. Ent. France*, p. 136, 138 (1907); Roths., *Nov. Zool.* xv. p. 168, sub no. 19 (1908); Jord., in Seitz, *Gross-Schmett.* ix. p. 33 (1908).

Submarginal spots of hindwing small. For short description cf. Seitz, ix.

Hab. Eastern, Central, and Western China.

12. *Papilio impediens* Roths. (1895).

♂. *Papilio alcinous mencijs* ab. *impediens* Rothschild, *Nov. Zool.* ii. p. 270, tab. I. fig. 26, 40, genit. (1895) (Ta-t sien-lu).

The harpe of the ♂ is very distinctive: subtriangular, densely dentate along ventral margin, the base produced into a short, triangular, pointed process, the apex rounded (Pl. VI. fig. 19).

Hab. China and Formosa.

a. P. impediens impediens Roths. (1895).

P. alcinous mencijs ab. *impediens* Rothschild, l.c.

Papilio alcinous impediens, Seitz, *Gross-Schmett.* i. p. 9 (1907) (nec fig.).

Papilio mencijs var. *impediens*, Oberthür, *Bull. Soc. Ent. France*, p. 138 (1907) (deser. of ♂).

Papilio impediens, Rothschild, l.c. xv. p. 168, sub no. 19 (1908); Jord., in Seitz, l.c. ix. p. 33 (1908).

It is hardly possible to distinguish the ♂ from *P. mencijs* ♂ without an examination of the tail-end. The scent-fold is appreciably shorter, not being quite so long as its distance from the postcaudal marginal lobe. The two ♂♂ from which this species was originally described as a probable aberration of *P. mencijs* have the hindwings exceptionally narrow.

The very pale ♀ described by Oberthür as that sex of *P. impediens* is in coll. John Levick; I have seen no other Chinese specimen like it.

Hab. Western China.

b. P. impediens febanus Fruhst. (1908).

Papilio plutonius, Miyake, *Ann. Zool. Japon*, vi, p. 55, no. 4 (1907) (Formosa; err. determinationis).

♀, *Papilio alcinous febanus* Fruhstorfer, *Ent. Zeits.* (Stuttgart) xxii, p. 46 (1908) (Formosa).

♂, *Papilio febanus* id., l.c. p. 102 (1908) ♂.

♂♀, *Papilio jonasi* Rothschild, *Nor. Zool.* xv, p. 168, no. 19 (1908) (Formosa); Wilem., *Ann. Zool. Japon*, vii, p. 99, no. 42 (1909).

♂♀, *Papilio (Pharmacophagus) koannania* Matsumura, *Ent. Zeits.* (Stuttgart) xxii, p. 54 (1908).

The submarginal spots large in both sexes. In structure the same as Continental *impediens* except that the scent-fold of the ♂ is a little longer.

Hab. Formosa.

13. Papilio plutonius Oberth. (1876).

Papilio plutonius Oberthür, *Ét. d'Ent.* ii, p. 16, no. 3, tab. 3, fig. 2. ♂ (1876) (Moupin); Jord., in Seitz, *Gross-Schmett.* ix, p. 32 (1908).

The pale underside of the hindwing, with the cell-lines distinct, and the deep scalloping of the hindwing readily distinguish this species from its allies. Palpus black mixed with red.

Wool of scent-fold darker than in *P. mencius* and *P. impediens*, but somewhat paler than in *P. alcinous*. Clasper large, recalling *P. dasarada*, as does also the harpe, which is proximally dilated into a process of variable size, the ventral margin usually dentate, sometimes simple, with a large tooth in or near middle (Pl. VI, figs. 20-24).

Hab. Bhutan, Naga Hills, to West China.

a. P. plutonius pembertoni Moore (1902).

Papilio alcinous var., Moore, *Cat. Lep. Mus. E.I. Comp.* i, p. 95 (1857) (partim).

Papilio (?Byasa) plutonius, Elwes, *Tr. Ent. Soc. Lond.* p. 424, no. 398 (1888) (Bhutan?); Nicéville, *Gazetteer of Sikkim*, p. 171, no. 463 (1894) (Bhutan?).

Papilio (?Byasa) alcinous, Nicéville, l.c. p. 171, no. 464 (1894) (Bhutan?).

Papilio alcinous plutonius, Rothschild, *Nor. Zool.* ii, p. 271, no. 62c (1895) (partim; Bhutan).

Byasa pembertoni Moore, *Lep. Ind.* v, p. 170, tab. 434, fig. 1. ♂, 1b. ♀ (1902) (Bhutan).

Papilio plutonius var. *pembertoni*, Oberthür, *Bull. Soc. Ent. France*, p. 137 (1907) (Haut Sikkim; Lachin-Lachoon, 8,000-16,000 feet).

Papilio alcinous race *pembertoni*, Bingham, *Fauna Brit. Ind., Butterfl.* ii, p. 34, no. 504 (1907) (Bhutan).

Papilio plutonius pembertoni, Jordan, in Seitz, ix, p. 33 (1908) (Sikkim, Bhutan, at high elevations).

Byasa alcinous pembertoni, Evans, *Journ. Bombay N.H. Soc.* xxix, p. 233 (1923) (Sikkim-Bhutan).

The submarginal spots larger and paler than in the other subspecies, both above and below, there being five well-marked spots on the upperside of the hindwing in both sexes.

Harpe nearly as in West Chinese specimens, strongly dentate (Pl. VI, fig. 23).

Hab. At high elevations in Sikkim and Bhutan.

b. P. plutonius tytleri Evans (1923).

♂♀, *Papilio alcinous impediens*, Tytler (err. determinationis), *Journ. Bombay N.H. Soc.* xxiii, p. 513 (1915) (Naga Hills, 7,000 feet).

Byasa alcinous tytleri Evans, *ibid.* xxix, pp. 233, 245 (1923) ("Manipur" err. loci).

Similar to Chinese specimens, but the submarginal spots smaller. The harpe without the numerous teeth of the two other species, the two specimens examined both with a simple triangular median tooth (Pl. VI, fig. 24).

Hab. Naga Hills, Assam.

c. *P. plutonius plutonius* Oberth. (1876).

- ♂♀. *Papilio plutonius* Oberthür, *Ét. d'Ent.* ii. p. 16, no. 3, tab. 3, fig. 2. ♂ (1876) (Moupin); id., *l.c.* iv. p. 42, no. 9 (1879).
Papilio alcinous, Leech, *Trans. Ent. Soc. Lond.* p. 115, no. 68 (1889) (partim).
Papilio plutonius, Leech, *Butterfl. China, etc.* ii. p. 541, no. 398 (1893).
Papilio alcinous plutonius, Rothschild, *Nor. Zool.* ii. p. 27, no. 62c, tab. 1, fig. 27-30, 41, genit. (1895) (partim).
Byasa plutonius, Moore, *Lep. Ind.* v. p. 172 (1902).
Papilio alcinous plutonius, Seitz, *Gross-Schmett.* i. p. 9, tab. 2c, ♀ (1907) (nec ♂ = *P. a. confusus*).
Papilio plutonius Oberthür, *Bull. Soc. Ent. France*, p. 137 (1907) (correction of Seitz's figs.).
Papilio plutonius plutonius, Jordan, in Seitz, *l.c.* ix. p. 32 (1908).
Papilio plutonius, South, *Journ. Bombay N.H. Soc.* xxii. p. 364, no. 118 (1913) (Gera, S.W. China); Draeseke, *Iris*, xxxvii. p. 56 (1923).

Occurs together with *P. meniscus meniscus*, *P. impediens impediens*, and *P. alcinous confusus*, but cannot easily be mistaken for any one of these species if the underside of the hindwing, the elaspers, and the scent-wool are compared. Figs. 20-23 represent the range of variation in the harpe of Western Chinese specimens examined by me.

Hab. Western China and Northern Yunnan.

14. *Papilio alcinous* Klug (1836).

- ♂♀. *Papilio alcinous* Klug, *Neue Schmett. Ins.-Samml. Berlin*, p. 1, no. 1, tab. 1. ♂♀ (1836) (Japan).
Papilio astenous id. (de Haan in litt.), *l.c.*

For short diagnosis cf. Jordan, in Seitz, *Gross-Schmett.* ix. p. 33 (1908). We do not yet know how far north the species occurs in China: it is quite probable that specimens from the most northern continental districts of the species closely approach the Japanese subspecies.

a. *P. alcinous confusus* Roths. (1895).

- Papilio alcinous* auct. partim.
Papilio alcinous meniscus ab. *confusus* Rothschild, *Nor. Zool.* ii. p. 269, tab. i, fig. 13-20, 37, 38, genit. (1895) (partim).
Papilio alcinous confusus, Seitz, *Gross-Schmett.* i. p. 9, tab. 2c. ♂♀ (1907) (partim).
Papilio alcinous meniscus, id., *l.c.* tab. 2b. ♂ (1907).
Papilio alcinous plutonius, id., *l.c.* tab. 2c. ♂ (1907).
Papilio confusus "Felder," Oberthür, *Bull. Soc. Ent. France*, p. 138, no. 4 (1907).
Papilio alcinous confusus, Jordan, in Seitz, *l.c.* ix. p. 33 (1908).
Papilio confusus var. ♀ *decora* Oberthür, *l.c.*
Papilio alcinous, South, *Journ. Bombay N.H. Soc.* xxii. p. 365, no. 123 (1913) (W. China).
Papilio confusus decorata Oberthür, *Ét. Lép. Comp.* ix. 2. p. 45, tab. 252, fig. 2134. ♀ (1914).
Papilio confusus, Draeseke, *Iris*, xxxvii. p. 56 (1923).
Papilio confusus v. n. *parvummaculatus* id., *l.c.* (Wassekou).

Hab. Western China.

b. *P. alcinous mansonensis* Frubst. (1901).

- Papilio alcinous mansonensis* Frubstorfer, *Soc. Ent.* xvi. p. 113 (1901) (Tonkin).
Papilio alcinous mansonensis id., *Berlin Ent. Zeits.* xlvii. p. 171 (1903).
Papilio alcinous mansonensis, Jord., in Seitz, *Gross-Schmett.* ix. p. 33 (1908).
Papilio alcinous, Wileman, *Annot. Zool. Japon.* vii. p. 95, no. 42 (1909) (Formosa).
Papilio alcinous (!) v. n. *nana* ? Draeseke, *Iris*, xxxvii. p. 56 (1923) (Ichang).

In this and the preceding subspecies the harpe is produced at both ends into a sharp point; the dentition is usually quite absent (Pl. VI, fig. 25).

The ♂ of this subspecies, as a rule, is paler than that of the previous race, but there is no strict line of demarcation between the two subspecies.

Hab. Central and Eastern China, Formosa.

c. P. alcinous loochooanus Roths. (1896).

Papilio alcinous, Lecch, *Butterfl. China, etc.*, ii, p. 537 (1893) (partim : Loo Choo Is.).

Papilio alcinous menicus, Rothschild, *Nov. Zool.*, ii, p. 268, no. 62, *b.*, tab. 1, fig. 12, 36, genit. (1895) (partim : Loo Choo Is.).

Papilio alcinous loochooanus Rothschild, *l.c.*, iii, p. 421, no. 1 (1896) (Loo Choo, ♂♂); Seitz, *Gross-Schmett.*, i, p. 9, tab. 1*c.*, ♀ (1907); Jord., *ibid.*, ix, p. 33, tab. 19*c.*, ♂ (1908).

Byasa loochooana, Moore, *Lep. Ind.*, v, p. 172 (1902).

Papilio alcinous loochuanus (?), Fruhstorfer, *Soc. Ent.*, xxi, p. 74 (1906).

Papilio alcinous var. *loochooanus*, Oberthür, *Bull. Soc. Ent. France*, p. 138, sub no. 5 (1907) (Liu-Kiu; Naze-Oshima).

Papilio alcinous var. *intermedia* Oberthür, *Bull. Soc. Ent. France*, p. 138, sub no. 5 (1907) (indescript; Ishigaki-sima).

♀, *Papilio alcinous bradanus* Fruhstorfer, *Ent. Zeits.* (Stuttgart) xxii, p. 46 (1908) (Ishigaki); Jord., in Seitz, *Gross-Schmett.*, ix, p. 33 (1908).

Head more or less red, as in the previous subspecies. Harpe multidentate, on the whole the teeth more numerous than in specimens from Japan proper, and the apex broader (Pl. VI, figs. 26, 27).

Specimens from Ishigaki-sima (2 ♂♂ and several ♀♀ in coll. Levick) do not differ from those obtained in the Riu Kiu Islands. I am much indebted to Mr. Levick for sending me for comparison the clasper of one of his males.

Hab. Riu Kiu and Ishigaki Islands.

d. P. alcinous alcinous Klug (1836).

For literature up to 1895 cf. *Nov. Zool.*, ii, p. 267 (1895).

Byasa alcinous, Moore, *Lep. Ind.*, v, p. 172 (1902).

Papilio alcinous nagasakii Fruhstorfer, *Soc. Ent.*, xxi, p. 73 (1906) (Kiu-Shiu).

Papilio alcinous alcinous, Seitz, *Gross-Schmett.*, i, p. 9, tab. 2, *a. b.*, ♂♀ (1907).

Papilio alcinous, Oberthür, *Bull. Soc. Ent. France*, p. 138, no. 5 (1907) (Yokohama; Sikoku).

Papilio alcinous alcinous, Jordan, in Seitz, *l.c.*, ix, p. 33 (1908).

Papilio ikusa Ehrman, *Canad. Ent.*, xli, p. 85 (1909) (Simoda, Japan).

Papilio (Pharmacophagus) alcinous m. v. *veris* Sheljuzhko, *Iris*, xxvii, p. 13 (1913) (Shizuoka and Yokohama; spring form smaller than summer form).

Papilio alcinous var. *pacificus* Martin, *Iris*, xxxv, p. 8 (1921) (Shikoku, 1 ♀).

Head black.

Fruhstorfer, *l.c.*, maintained that the specimens from Hokkaido, Honshiu, and Kiushiu represented three subspecies. Though one expects specimens from different localities to be different, this theoretical consideration does not prove that they *are* different in every species, nor does it absolve the author of a new name from finding and describing differences which are really there. Fruhstorfer was easily carried away by enthusiasm. His statement that the spots on the underside of the hindwing are always yellow instead of red in *P. alcinous* from Nagasaki is not confirmed by our specimens from that place. Moreover, yellow-spotted ♂♂ and ♀♀ are the rule on the main island.

The proximal process of the harpe usually rather well defined; dentition very variable (Pl. VI, figs. 28, 29).—Fig. 11 on pl. iv of *Nov. Zool.*, ii, was taken from a Japanese specimen (cf. p. 270, *l.c.*); it agrees so well with the harpe of *P. a. confusus* that I am inclined to suspect a mistake to have occurred. The specimen is no longer in the collection.

Hab. Japan: Hokkaido to Kiushiu.

SIPHONAPTERA COLLECTED IN THE DOLOMITES.

BY DR. KARL JORDAN.

(With 6 text-figures.)

PRIOR to my visits to the Dolomites in 1922 and 1926 our collection contained no specimens of Siphonaptera from that district. For this reason I took advantage of every opportunity that offered itself during these holidays to collect small mammals and thus to obtain at least some of the fleas which occur in South Tirol. The list here published is a very short one, but it gives nevertheless an idea of what is found on the usual kinds of small mammals one meets with in the mountains. All the species collected, or closely allied forms, occur also in Switzerland. In the Southern ranges of the Dolomites and in the valleys one may expect to encounter Italian species. Mice and shrews were not very plentiful in the places at which we stayed long enough to make trapping feasible, and on the meadows above the tree-line only one mouse was common: *Microtus incertus*. The nests of this species are not difficult to dig out, but usually they are disappointing, as they generally yield only the common *Ceratophyllus penicilliger*. At Cortina d'Ampezzo I trapped a number of moles, but the weather was so rainy that there was nothing on them when I inspected the traps. *Erotomys nageri* is a woodland species, being fairly common in the wood on the eastern side of Lake Misurina, and *Microtus nivalis* occurs high up in rocky places where it is not too dry and in alpine huts.

1. *Ceratophyllus penicilliger* Grube (1852).

Common at higher elevations; its normal host in the Dolomites evidently is *Microtus incertus*.

Below Fedaja Pass, 1,900 m., and Schlern, 2400 m., vi. vii. 1922, in nests of *Microtus incertus*.—Above Campo di Sotto, Cortina, 1,200 m., vi. 1926, on *Erotomys nageri*.—Below Croda da Lago, vii. 1926, 1,700 m., in nest of *Microtus incertus*.—Misurina, 1,750 m., vii. 1926, off *Microtus agrestis*.—Monte Piano, 2,300 m., and Plätzwiese, 1,950 m., vii. 1926, in nests of *M. incertus*.—Below Drei Zinnen Hütte, 2,350 m., vii. 1926, off *Microtus nivalis*.

2. *Ceratophyllus gallinulae gallinulae* Dale (1878).

1 ♂ from: Faloria Alp, above Cortina, 1,300 m., vi. 1926, in nest of *Emberiza citrinella*.

3. *Ceratophyllus gallinae* Schrank (1803).

A series bred in viii. 1922 from nest of *Parus alpestris* found in vi. in the wood on the east side of the Sellajoch, approximately at 1,800 m.

This flea is a Palæartic species occurring on various birds, being particularly plentiful in the nest of *Parus*; the domestic fowl I consider to be a secondary host. It is now common in the Eastern States of North America, but in the West the fowl has picked up another flea: *C. niger* Fox (1908).

4. *Ceratophyllus borealis* Roths. (1907).

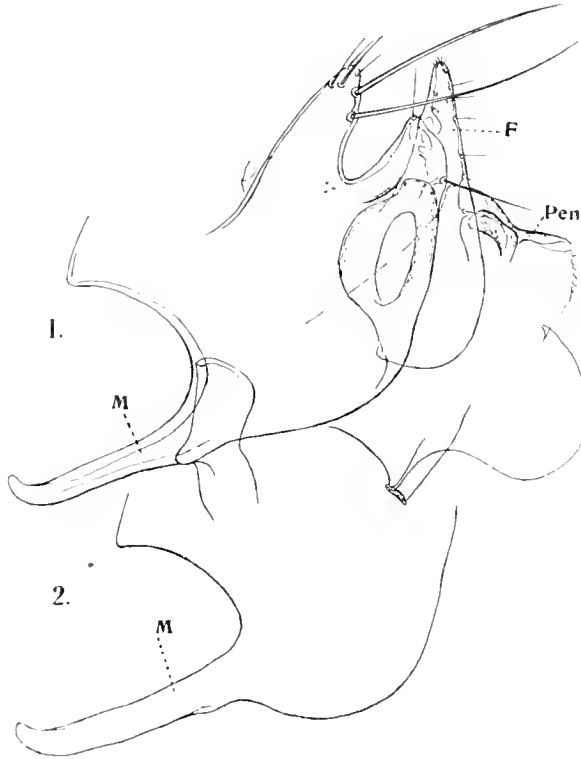
A pair from : Drei Zinnen Hütte, 2,400 m., vii. 1926, in nest of *Montifringilla nivalis*.

5. *Amphipsylla sepifera* J. & R. (1920).

One ♀ from : Monte Cadini, above Misurina, 2,200 m., vii. 1926, off *Microtus nivalis*.

6. *Ctenophthalmus agyrtes impavidus* subp. nov. (text-fig. 1).

♂. The bay above the manubrium of the clasper wider than in *Ct. agyrtes* Heller (1896); the ventral margin of the clasper less rounded; and



the apex of the exopodite narrower. We figure for comparison the manubrium and adjacent portions of the clasper of *Ct. a. agyrtes* (text-fig. 2).

♀. Apparently not different from *Ct. a. agyrtes*.

A large series from : Völs a. Schlern and Völser Weiher, 900–1,000 m., vi. vii. 1922, on *Microtus* and *Talpa europaea*: type.—Schlern, 2,400 m., vii. 1922, in nest of *Microtus incertus*.—Below Fedaja Pass, 1,600 m., vii. 1922, in nest of *M. incertus*.—Faloria Alp, above Cortina d'Ampezzo, 1,300 m., vi. 1926, on *M. incertus* and *Apodemus sylvaticus*.—Above Campo di Sotto, Cortina, vi. 1926, on *Erotomys nageri*.—Misurina, 1,750 m., on *Erotomys nageri* and *M. agrestis*, vi. vii. 1926.—Monte Cadini, above Misurina, 2,200 m., vii. 1926, on *Microtus nivalis*.

We do not yet know which subspecies of *Ct. agyrtes* occurs in North Tirol and Vorarlberg, South Bavaria and the Northern Cantons of Switzerland. *Ct. agyrtes orcadis* J. & R. (1920) extends at least as far north as Zürich, where N. C. Rothschild in 1920 and myself in 1925 obtained it in some numbers on the Dolder.

7. *Ctenophthalmus congener* Roths. (1907).

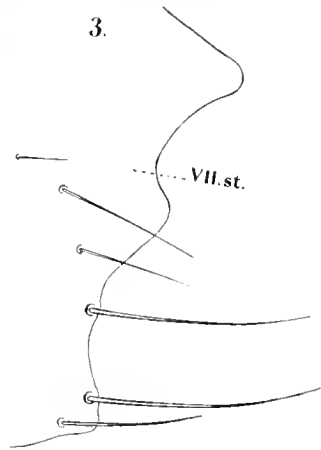
5♂♂, 17♀♀ from: below Croda da Lago, 1,700 m., vii.1926, in nest of *Microtus incertus*.—Misurina, 1,750 m., vi. vii.1926, on *Evotomys nageri* and *Talpa europaea*.—Monte Cadini, 2,200 m., vii.1926, on *Microtus nivalis*.—Plätzwiese, 1,950 m., vii.1926, in nests of *Microtus incertus*.

8. *Ctenophthalmus nivalis dolomiticus* subsp. nov. (text-fig. 3).

♀. Lobe of sternite VII less produced than in the more western races, the apical margin from this lobe downwards more oblique and distinctly incurved twice (fig. 3); the number of bristles in the row on this sternite varying from 4 to 7, one or two of them marginal. On ventral portion of tergite VIII from 13 to 17 bristles, the last bristle short and stout and placed above the last long one, sometimes two such short stout bristles instead of one.

3♀♀ from: Monte Cadini, above Misurina, 2,200 m., and below Drei Zinnen Hütte, 2,300 m., vii.1926, off *Microtus nivalis*.

This may turn out to be the ♀ of *Ct. orphibus* J. & R. (1923), from the Engadine, of which only the ♂ is known. I made a special effort at collecting *M. nivalis*; but as I found it only among the rocks at and above the tree-line, the inspection of the traps meant a stiff walk uphill of an hour and a half, which was apt to interfere with other excursions. I only obtained five specimens of the snow-mouse at the Monte Cadini: a sixth specimen I caught near the pass leading from the Drei Zinnen hut to Fischleimboden.



9. *Ctenophthalmus bisoctodentatus* Kolen. (1863).

5♂♂, 2♀♀ from: Völs a. Schlern, 950 m., vii.1922 and Misurina, 1,750 m., vii.1926, off *Talpa europaea*.

The ♀♀ have sternite VII divided by a sinus into a large upper lobe and a smaller lower one.

10. *Rhadinopsylla casta* sp. nov. (text-figs. 4, 5).

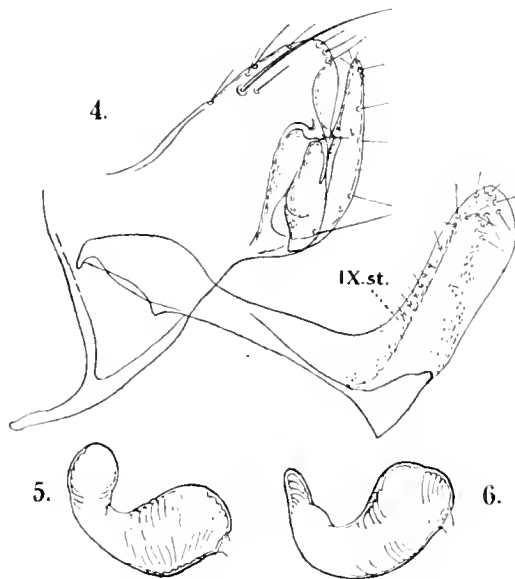
Rhadinopsylla spec., Jordan & Roths., Ectoparasites i. p. 109, sub. no. 34 (1920) (Zermatt).

When describing *Rh. mesa* J. & R. (1920), i.e., we said that we had two ♀♀ which showed certain differences from the ♀ of *Rh. mesa*, which we mentioned, and we added that we did not think it "advisable to give a name to the two examples in the absence of the other sex."

We now have, from the Dolomites, both sexes of this species and also an additional ♀ of *Rh. mesa* from Switzerland. These specimens leave no doubt that they are specifically distinct from *Rh. mesa*.

Genal comb with five spines. Prothoracic comb of 19 to 22 spines. Apical spines on abdomen more numerous than in *Rh. mesa*: 29 in both ♂♂ of the new species, and 15 in the only ♂ of *Rh. mesa* we have, in the ♀ of *Rh. mesa* 15 in one specimen and 22 in the other, in the ♀ of *Rh. casta* 27. The bristles on abdominal sternites III to VII less numerous than in *Rh. mesa*: in the ♂ of *Rh. mesa* 30, in the ♂♂ of *Rh. casta* 20 and 26 respectively, in the ♀♀ of *Rh. mesa* 46 and 50, and in the ♀ *Rh. casta* 31, 32 and 36.

Modified Segments:—♂: clasper broader than in *Rh. mesa*, less narrowed towards apex and the ventral margin more rounded, ventricose; manubrium



shorter. Sternite IX apically broader.—♀: sinus of sternite VII smaller and less deep, the angle above the apical sinus of tergite VIII less projecting; the stylet shorter. Body of spermatheca less narrowing towards tail than in *Rh. mesa*, and the tail broader near apex than at base, the apex being swollen and rounded (text-fig. 5). For comparison we figure the spermatheca of *Rh. mesa* (text-fig. 6), which has not been figured before.

2♂♂, 1♀ from: Monte Cadini, above Misurini, 2,200 m., vii. 1926, off *Microtus nivalis*.

The above-mentioned two Swiss ♀♀ and the one recorded l.c. p. 288 also belong here.

11. *Palaeopsylla kohauti* Dampf (1910).

Völs a. Schlern, 950 m., vii. 1922, and Misurina, 1,750 m., vii. 1926, off *Talpa europaea*, evidently common.

12. *Palaeopsylla sorecis* Dale (1878).

Völs a. Schlern, 950 m., vii.1922, on *Microtus* caught in a mole run.

13. *Doratopsylla cuspis* J. & R. (1915).

A small series of both sexes from: Völs a. Schlern, vii.1922, off *Talpa europaea*, and Misurina, 1,750 m., 30.vi.1926, off *Sorex araneus*.—Above Campo di Sotto, Cortina, 1,200 m., 22.vi.1926, on *Erotomys nageri*, one ♀.

The seventh abdominal sternite of the ♀ sometimes has a distinct apical sinus.

14. *Hystrichopsylla talpae* Curtis (1826).

A pair from: Misurina, 1,750 m., vii.1926, on *Microtus agrestis*.

SIPHONAPTERA COLLECTED DURING A VISIT TO THE
EASTERN UNITED STATES OF NORTH AMERICA IN 1927.

By DR. KARL JORDAN.

(With 4 text-figures.)

MY visit to the United States had a threefold object: to attend a meeting of the Organising Committee of the Fourth International Congress of Entomology, to study Fleas in Museums and at large, and to see a little of "Land and Leute" in that renowned country. The visit has been satisfactory in every way, at least to myself, and this could not be otherwise, since I met with the greatest assistance and kindest hospitality everywhere.

My studies in the systematics of the American Siphonaptera had advanced to a point where it became necessary to consult the material of this order of insects contained in American Museums, particularly the United States National Museum at Washington, D.C., where most of the types of the species described by Carl F. Baker are preserved. Some questions of identification and synonymy could not be answered without comparison of the types to which the names concerned applied, and several species not contained in the British Museum collection (inclusive of the collection of N. C. Rothschild) could not be placed correctly in our scheme of classification before we had seen a specimen of each of these species which were known to us only from the descriptions. I spent nearly four weeks at the U. S. Nat. Mus., where I was given every facility to study the numerous types in the flea-collection, my special thanks being due to Dr. Aldrich and Dr. Ewing for the great courtesy and help extended to me. The result of this laboratory work will be published in due time. Besides comparing specimens and drawing details of structure there were several other points of interest for my researches in Siphonaptera. The collection of N. C. Rothschild is fairly rich in species and specimens from the western side of the North American Continent and the Rocky Mountains, while the Eastern States are comparatively poorly represented, even as regards some of the commoner species. Moreover, the records of hosts sometimes left me in doubt as to which species of mammal was the normal host of a particular species of flea. And, further, the distribution of some of the species was likewise puzzling to me. All these points, important for my researches, were ample reason for wishing to collect material of fleas during my stay in the country. My colleagues at Washington to whom I mentioned my desire did not confine themselves to giving me good advice, but took me on excursions into the woods of the Potomac R., where I had a most enjoyable and profitable time. I am particularly grateful to Mr. A. S. Barber, whom I accompanied several times to Plummer's Island, and to Mr. E. A. Preble for giving me hospitality in his cabin below Black Pond on the Virginia side of the Potomac. I do not think I shall ever forget the two nights I spent in the woods of the Potomac where every call of Beast, Bird and Amphibian was strange to me and the flash-lights of the Lampyrids were a most attractive sight. Here I made the acquaintance "in the flesh" of a number of fleas which I knew only from specimens preserved in alcohol or perpetuated in balsam.

The first live example of a species of animal or plant one has studied from dead specimens is always very interesting ; it impresses the mind as being much more real than the preserved material of the laboratory, possessing an additional reality in being alive. Mr. A. Howell told me that I would have to clear the place of *Peromyscus leucopus* before I could expect to get much else in my traps, meaning that the White-footed Mouse was very abundant and easily trapped. In a way I was glad that he was right ; for I soon got this mouse and its nest, and the fleas obtained proved to answer two questions. At home I had not been able to identify from the description a species named by Baker in 1905 *Ceratophyllus leucopus* from a single female taken off *Peromyscus leucopus* ; and here was this identical flea, abundant on the White-footed Mouse. Moreover, an examination of it under the microscope in the Museum proved it to be the same as *Ceratophyllus aeger* Roths. (1905), described from Alberta and since received now and again in a few specimens from various Eastern States. The interest in *C. leucopus* soon flagged, as it is the flea most commonly obtained wherever I trapped for mice during my visit. The first specimen of the Short-tailed Shrew (*Blarina brevicauda*), which I caught in a mole-trap under herbage on the bank of the brook which runs through Mr. E. A. Preble's property, yielded a small series of a flea of which our collection only contained two specimens ; and on *Neotoma pennsylvanica*, which Mr. Preble showed me where to trap, I found, in numbers, an undescribed flea which is of interest as being the Eastern representative of a series of forms known to occur from Colorado west- and northward. Some Pine Mice (*Pitymys pinetorum*) caught on Plummer's Island provided me with a series of specimens of a flea (*Ctenophthalmus pseudagyrtes* Baker 1895) which is usually found on moles, the Pine Mouse being new to me as a host of this flea. That a couple of days more or less haphazard collecting within easy reach from Washington, D.C., should add this much to my knowledge of the Siphonaptera was most encouraging ; but collecting had to remain a very secondary matter during my stay in this city, the visits to the woods being but pleasant incidents interrupting the work at the Museum.

When at Philadelphia, where I enjoyed the hospitality of Professor and Mrs. P. P. Calvert at Cheyney, about an hour's journey from the city, I might have continued the collection if I had known what an ideal place for my purpose Cheyney was. But there was so much on my programme that I had left the traps at Philadelphia, and therefore the only addition to the bag were the fleas of a mole which my hosts caught for me in the garden, the first American Mole (*Scalops aquaticus*) I had seen. There are three species of moles in the Eastern United States, all of which I caught later on in other places. What flea occurs on the most peculiar species of the three, the star-nosed mole, is not known ; the pair I caught at Mt. Kisco, N.Y., had no Ectoparasites. The species lives in swampy ground and possibly has no flea of its own, but much depends on the place where the nest is made, about which I know nothing. The other two species, the Common Mole with naked tail and Brewer's Mole with hairy tail, have the same flea and only this one species. In Europe any locality has only one species of mole, but at least four species of fleas may be expected to occur on it. That is a singular contrast, which justifies the conclusion that the American moles originally had no flea, and that the single species of flea now occurring on them in abundance is a later acquirement. This conclusion is borne out by another consideration : I mentioned above that on the Potomac I obtained the mole-

flea from the Pine Mouse and only this species; at Braewold, Mt. Kisco, N.Y., where I stayed as the guest of Miss Carolena Wood, it was again this mole-flea that I found on the specimens of the Meadow Mouse (*Microtus pennsylvanicus*). We may take it as certain that this American mole-flea has, as normal hosts, several species of mice besides the moles, and as the flea belongs to a genus which is represented by an abundance of species in Africa, Europe and Palae-arctic Asia, only one of which occurs on the European mole, all the others being fleas of rodents, the conclusion is not far-fetched that the American moles received their one species of flea from the mice, not the other way about. Mice frequent the runs of moles; in Europe one of the commonest mouse-fleas (*Ctenophthalmus agyrtus* Heller 1896) is often found on the mole and in its nest, and the frequency of such an association may easily lead to an adaptation of the mouse-flea to the mole, the deciding step in this evolution would be, on the part of the flea, the loss of the aversion to suck the blood of the mole.

The surroundings of Braewold, Mt. Kisco, with its fields, meadows, woods, brooks and vistas of forest-clad hills invite dreams of the time when industry had not yet been introduced, and people were industrious in tilling the soil. The place creates a deep feeling of peace after the bustle of the city. I spent several days under Miss Carolena Wood's most hospitable roof and employed the time in sampling the fauna in the neighbourhood of the house and farm. The English sparrow was very much in evidence, as nearly everywhere in the Eastern States of the North American continent. The bird reminded me of my youth when Reiche, in Alfeld (Hannover), bought up sparrows for shipment to the United States, where they now flourish to such an extent that they are a nuisance in many places. I was interested to know what flea occurred in its nest, hoping that the sparrow either had picked up an American bird-flea, or had brought its own flea over from Europe. But in the nests I took at Braewold I found only the hen-flea and this in numbers. The occurrence of the Old World hen-flea in the Atlantic States and its absence from the Pacific side of the Continent, where fowls are infested with another flea, is one of the puzzles we cannot as yet explain. The distribution of the human flea in the States is somewhat similar, *Pulex irritans* being practically unknown in the Eastern States and common in the south and west.

The experience gained on the Potomac and at Mt. Kisco stood me in good stead when I arrived, towards the end of June, at the Rolling Rock Club, Ligonier, Pa., where my kind and most helpful friend Dr. W. J. Holland introduced me after I had finished studying, in the Carnegie Museum at Pittsburgh, some special questions of taxonomy in the large collection of Lepidoptera for which that Museum is renowned among Entomologists. I stayed at the Rolling Rock Club for nearly a fortnight: it is a delightful place where I could devote all my time to rambles in the extensive woods and to trapping and insect-collecting. I shall always be grateful to my host, Mr. R. B. Mellon, for giving me this opportunity to study life in the Alleghany Mountains under the most comfortable and favourable conditions imaginable. The woods run right up to the house and teem with small mammals, birds and insects. Here the Red and Grey Squirrels, the Opossum, Brewer's Mole, the Short-tailed Shrew, Chipmunk, Woodchuck and Cotton-tail Rabbit, and the White-footed Mouse can be encountered a few yards from the door, and farther afield the Packrat occurs under disused barns and among rocks, the Skunk and Red-backed Woodmouse are in

evidence, and, if one is lucky, even a Rattlesnake may be met with in the open places in the woods. I am certain that more species of mice occur in this district of the Alleghanies than I obtained during my stay: but the discovery of the whereabouts of small mammals with a restricted distribution requires a longer time than was at my disposal. The staff of the house and estate gave me much help in my pursuits, and particular thanks are due from me to the game-warden, who was untiring in assisting me.

As is so often the case with good things, there was one flaw inimical to making a collection of the fleas occurring on the bigger mammals: it was evidently not the right season for certain species, for there were but two squirrel-fleas on the half-dozen *Marmota monax* I examined; the raccoon, caught in a trap, searched under chloroform and then liberated, only yielded the same common squirrel flea, and the foxes which were kept in an enclosure had no fleas on them, only one larva being the result of the hunt, this larva being found in sacking on which a young fox had been sleeping. The kennels, where I hoped to find either the Dog- or the Cat-flea, were very disappointing: they were kept so clean and well disinfected that fleas had no chance whatever, and even a tame barn-cat was found to be devoid of the usual live-stock. Two Opossums caught in the wood near the house aroused great expectations in me: no Opossum-flea being known from North America I hoped to make a good find. The Opossum offers no opposition to scientific investigations, even if they tend to support the theory of Evolution; but it puts out its tongue at you. The animal can be handled as if it were a dead specimen. I searched the two Opossums carefully again and again and only had six fleas as a reward of this labour: one specimen was the Woodchuck-flea, the only example I obtained of this common species during my visit, two were the common Squirrel-flea, two others the flea of the White-footed Mouse, and the sixth example was a new Mouse-flea which the Opossum probably had picked up when eating a mouse or grubbing for insects. I think the fall would be a better season for some of the mammal-fleas than the summer. A number of abandoned bird-nests examined at the Rolling Rock Club proved a failure, whereas fleas were fairly plentiful on mice and shrews: the best species among them was a small series of *Leptopsylla hesperomys*, which was but poorly represented in the collection at home. The *Blarina*-flea was not rare, and as I had already obtained a series of it on the Potomac and at Mt. Kisco its capture was apt to leave me cold. The *Blarina* is a carnivorous, fierce little beast; I was shown a quite young rabbit whose ears had been partially eaten, and on putting a trap in the nest I caught a *Blarina*, which had evidently been the culprit.

It was no merit of my own that I was luckier with bird-fleas at Cohasset, Boston, Mass., where I stayed with my friend Mr. B. Preston Clark in his beautiful home, situated on the rocky shore of the Atlantic. Mr. Clark's daughter and her husband are much interested in birds, and when I mentioned that we knew very few bird-fleas from North America, Mrs. K. C. Harding suggested that we might find something I wanted in the old nests contained in the nesting boxes set up in the garden. And here indeed we obtained the nest of the White-footed Mouse, full of fleas, cocoons and larvae, and in another box a quantity of a bird-flea only known from far-away British Columbia. Soon after my arrival in England Mrs. Harding sent me several tubes with fleas, one tube containing a species which I at first took to be new, but afterwards found to be described

from a single specimen, and this again from British Columbia. This species is a very interesting find, and as there are nearly fifty specimens, there are enough for a number of laboratories where Ectoparasites are being studied. The material of bird-fleas which we owe to Mrs. K. C. Harding is a most successful and welcome contribution to our knowledge of these blood-sucking insects, for which all who are interested in this particular line of research, a branch of Medical Entomology, will be grateful. In Mrs. Preston Clark's garden we also found the Meadow Mouse and the Short-tailed Shrew, and one of the species of flea (No. 11) obtained I had not previously collected.

And now a few days in New York and then back to England.

The number of species of fleas I found is small, as is natural on a rapid visit during which one is bound to collect the same species over and over again. But I had nevertheless accomplished what I wanted: to become familiar with the commoner species, their hosts and haunts, and thus to shed to some extent the dry shell of the laboratory entomologist.

1. *Cediopsylla simplex* Baker (1895).

East Falls Church, Va., bred in numbers in June from a newly abandoned nest of *Sylvilagus floridanus mallurus* which Dr. E. A. Chapin kindly obtained for me.

2. *Ceratophyllus gallinae* Schrank (1803).

Mt. Kisko, N.Y., June, in nests of *Passer domesticus* L. (1758), 35 specimens.

Babson's Park, Mass., July, in nests of *Sialia sialis sialis* and *Iridoprocne bicolor*, 16 specimens collected by L. W. Smith, communicated by Mrs. K. C. Harding.

Probably a flea introduced from Europe with Domestic Fowl, but we cannot yet be sure. It is possible that the species is an indigenous one on some wild birds, such as *Parus*. Further investigation is necessary, in Europe as well as America, and above all in India.

3. *Ceratophyllus diffinis* Jord. (1925) (text-fig. 7).

Cohasset, Boston, Mass., August, in nest of *Galeoscoptes carolinensis*, 47 specimens, Mrs. K. C. Harding coll.

I described this species in Nov. Zool. xxxii, p. 111 (1925) from a single male obtained by Mr. Garrett at Okanagan Falls, British Columbia, on *Colymbus holboelli*. The present long series confirms my statement that the species is closely related to *C. garei* Roths. (1902). The hitherto unknown female is easily recognised by the seventh abdominal sternite and the spermatheca, which we figure. The apical margin of the seventh sternite (VII. st.) is more or less evenly incurved, the upper and lower lobes being about equal in size in lateral aspect. The spermatheca (R.s.) is similar to that of *C. garei*, but its tail is longer. In *C. diffinis*, *C. garei* and some other bird-fleas the proximal portion of the duct of the spermatheca is not strongly chitinised as it is in the species with a long spermatheca of the *C. gallinae*-type.

4. *Ceratophyllus idius* J. & R. (1920).

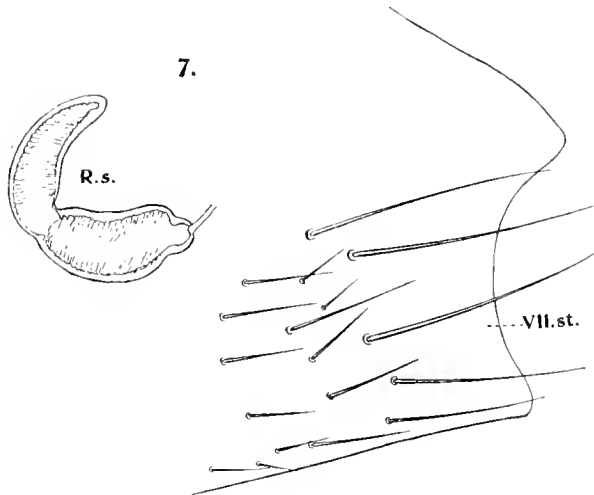
Cohasset, Boston, Mass., July–August, in nest of *Troglodytes aedon aedon* : 41 specimens.

Roek, Mass., July, in nest of *Sialia sialis sialis*, A. W. Higgins coll.

Babson's Park, Mass., in nest of *Iridoprocne bicolor*, L. W. Smith coll.

These three lots I owe to Mrs. K. C. Harding's kind collaboration. Originally described from a small series of *Iridoprocne bicolor* obtained at Okanagan Landing, British Columbia, by J. A. Munro. The seventh sternite is deeply sinuate, the lobe above the sinus being more or less pointed, but variable in length.

I expected to find some subspecific difference between the specimens from Massachusetts and British Columbia, but the examples from these widely separated countries are alike, apart from individual variability.

5. *Ceratophyllus fasciatus* Bosc (1801).

Rolling Rock Club, Ligonier, Pa., 29 June, on *Neotoma pennsylvanica*, one ♂.

Cohasset, Boston, Mass., 4 July, off *Peromyscus leucopus*, one ♀.

This cosmopolitan rat-flea occurs sparsely in the Eastern States; it is commoner in California. It has received several names, as will be pointed out another time when dealing with the synonymy of the American fleas.

6. *Ceratophyllus arctomys* Baker (1904).

Rolling Rock Club, Ligonier, Pa., 28 June, on Opossum : one ♂.

7. *Ceratophyllus wickhami* Baker (1895).

Rolling Rock Club, 25 June, on *Marmota monax*, 2♀♀; 26 June, on *Procyon lotor*, one ♂; 1 July, on *Sciurus hudsonius loquax*, 12 specimens; 2 July, on *Tamias striatus*, one ♂, and on Opossum, 2♂♂.

A very common Squirrel-flea, which has been introduced into England with

the Gray Squirrel. There is a very interesting pathological specimen among the series taken off the Red Squirrel. The mesonotum of this specimen bears on the left side at the lower angle two broad spines recalling the spines of the prothoracic comb, but narrower and shorter, and below these spines a longer bristle-like spine; the longitudinal ventral incrassation of the mesonotum extends to the base of these abnormal spines, while on the other side of the body the incrassation fades away in the middle of the segment as in normal specimens. What is the meaning of these spines? Nearly all fleas, with the exception of the family *Pulicidae* (cf. *Verhandl. III. Internat. Ent.-Kongress.* p. 601, 1926) bear, on the under surface of the apical mesonotal area which overlaps the metanotum, a row of bristle-like projections, variable in number and distant from the apical margin of the segment. These false bristles I consider to be homologous to the spines of the combs. In the specimen under discussion two of these "false bristles" have not been arrested in their development when they reached the normal size, but have gone on beyond that stage, a mechanical interference with the normal process of growth probably being the cause of this abnormal development. The apical margin of the segment turns frontal above the spines, as if the lower portion of the apical area were used up in the development of the spines. We find this phenomenon similarly illustrated in a large number of species which bear apical spines on the tergites, the marginal area of the segments being reduced in length (excised) wherever there is a spine.

8. *Ceratophyllus sexdentatus pennsylvanicus* sp. nov. (text-figs. 8, 9).

Represents *C. sexdentatus* Baker (1904) in the Atlantic States. Chaetotaxy similar. Occiput with the median bristle not accompanied by a smaller bristle, in which character the new species agrees with all the subspecies of *C. sexdentatus* Baker (1904).

♂. Manubrium (M) of elasper shorter than in *C. sexdentatus agilis* Roths. (1905); process P long, symmetrically rounded at apex; exopodite F usually with 5 spines, sometimes with 4, the distance of the lowest spine from the extreme base of F much longer than its distance from the apical angle of F. The proximal lobe of sternite IX, which bears a short spine, much less expanded in a longitudinal direction than in *C. sexdentatus agilis*; the apical lobe of IX st. is strongly curved down, much more so than in *C. sexdentatus agilis*, but not subtruncate, as it is in *C. sexdentatus sexdentatus*.

♀. Sternite VII (text-fig. 9) deeply divided into two lobes, the upper one always long and apically enlarged, but variable in outline. On the wide ventral portion of tergite VIII 11 or 12 bristles on the outer surface inclusive of the marginal ones, no bristles along the internal incrassation which extends obliquely dorsad-frontad from the median ventral bristles.

Below Black Pool, Potomac R., Va., May, on *Neotoma pennsylvanica*, 22 specimens.

Rolling Rock Club, Ligonier, Pa., end of June, on the same host, 46 specimens, incl. of type.

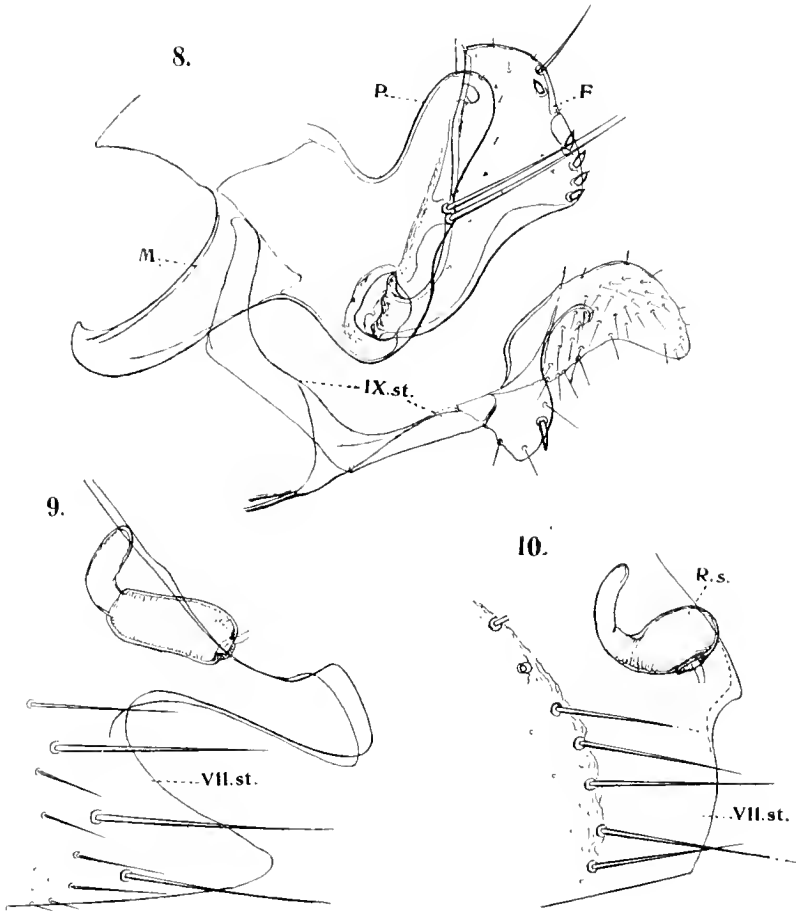
This subspecies probably occurs wherever *N. pennsylvanica* is found. The true hosts of the various other subspecies of *C. sexdentatus*, which are known to occur from Colorado north- and westward, are also forms of *Neotoma*, though the flea has been found on other mammals as well.

9. **Ceratophyllus leucopus** Baker (1904).

The commonest mouse-flea in the Atlantic States. Its true host is *Peromyscus leucopus*.

Plummer's Island, Md., and below Black Pond, Potomac R., Va., May, on *Peromyscus leucopus* and in its nest, 45 specimens and some larvae.

Braewold, Mt. Kisco, N.Y., June, on the same host, 6 specimens.



Rolling Rock Club, Ligonier, Pa., June and July, on the same host, 17 specimens, and on Opossum, 2 July, 2 ♀♀.

Cohasset, Boston, Mass., July, on *P. leucopus* and in its nest, 51 specimens and larvae.

10. **Odontopsyllus multispinosus** Baker (1898).

East Falls Church, Va., May, in a recently abandoned nest of *Sylvilagus floridanus mallurus* given to me by Dr. E. A. Chapin, one ♀, which I put into the nest, optimistically hoping that it would produce a good crop of offspring: the specimen died and got lost in the nest.

11. *Ctenophthalmus pseudagyrtes* Baker (1904).

Common on Moles and Arvicolid Mice, accidentally on other mammals.

Plummer's Island, Potomac R., Md., May, on *Pitymys pinetorum* and in its nest, 28 specimens.

Below Black Pond, Potomac R., Va., May, in nest of *Peromyscus leucopus*, one ♀.

Cheyney, Philadelphia, Pa., June, on *Scalops aquaticus*, 14.

Braewold, Mt. Kisco, N.Y., June on *Microtus pennsylvanicus*, 13 specimens, and on *Blarina brevicauda*, 2♀♀.

Rolling Rock Club, Ligonier, Pa., end of June and early July, on *Parascalops breweri*, 16 specimens; on *Mus musculus*, one ♀; on *Erotomys gapperi*, one ♀; on *Blarina brevicauda*, 13 specimens; on *Neotoma pennsylvanica*, one ♂.

Cincinnati, Ohio, June, on *Scalops aquaticus*, 11 specimens.

Cohasset, Boston, Mass., July, on *Blarina brevicauda*, 5 specimens, and on *Microtus pennsylvanicus*, one ♀.

12. *Neopsylla wenmanni* Roths. (1904).

Cohasset, Boston, Mass., July, on *Peromyscus leucopus*, 2♀♀.

13. *Doratopsylla blarinae* Fox (1914).

The species is nearest to the European *D. cuspis* Roths. (1915). Evidently common.

Below Black Pond, Potomac R., Va., May, on *Blarina brevicauda*, 8 specimens.

Braewold, Mt. Kisco, June, on the same host, 15 specimens.

Rolling Rock Club, Ligonier, Pa., on the same host, 15 specimens: on *Mus musculus*, one ♂; on *Peromyscus leucopus*, one ♂.

Cohasset, Boston, Mass., July, on *Blarina brevicauda*, one ♂.

14. *Leptopsylla hesperomys* Baker (1904).

Rolling Rock Club, Ligonier, Pa., 28 June and 2 July, on *Peromyscus leucopus*, 2♂♂ and 4♀♀.

This small series is most welcome, as we have only two specimens in the collection.

15. *Leptopsylla catatina* sp. nov. (text-fig. 10).

♀. Near *L. selenis* Roths. (1906). Two genal spines, of which the upper extends further distad than the lower. Pronotal comb with 27 spines. On metanotum and abdominal tergites I to VI the following spines on the two sides together: 5, 7, 8, 8, 6, 5, 4. Four antepygial bristles. Sternite VII (text-fig. 10) truncate, with a small sinus below the upper angle, the angle projecting as a short lobe, which is more rounded on one side than on the other, as indicated in the figure: the margin below the sinus slightly convex. Stylet as in *L. selenis*. Head of spermatheca (R.s.) less elliptical than in *L. selenis*.

Rolling Rock Club, Ligonier, 28 June, on *Didelphis virginiana*, one ♀.

16. *Myodopsylla insignis* Roths. (1903).

Rolling Rock Club, Ligonier, Pa., end of June, on *Myotis lucifugus*, 18 specimens.

I. MAMMALS.

	No. of Fleas.
1. Didelphis virginiana Kerr (1792).	
<i>Ceratophyllus leucopus</i> Baker (1904)	2
<i>Ceratophyllus arctomys</i> Baker (1904)	1
<i>Ceratophyllus wickhami</i> Baker (1895)	2
<i>Leptopsylla eatatina</i> n.sp.	1
2. Sylvilagus floridanus mallurus Thomas (1898).	
<i>Cediopsylla simplex</i> Baker (1895), in nest	223
<i>Odontopsyllus multispinosus</i> Baker (1898), in nest	1
3. Evotomys gapperi Vigers (1830).	
<i>Ctenophthalmus pseudagyrtis</i> Baker (1904)	1
4. Microtus pennsylvanicus Ord (1815).	
<i>Ctenophthalmus pseudagyrtis</i> Baker (1904)	14
5. Pitymys pinetorum Le Conte (1829).	
<i>Ctenophthalmus pseudagyrtis</i> Baker (1904)	28
6. Neotoma pennsylvannica Stone (1893).	
<i>Ceratophyllus sexdentatus pennsylvanicus</i> n.subsp.	68
<i>Ceratophyllus fasciatus</i> Bosc (1801)	1
<i>Ctenophthalmus pseudagyrtis</i> Baker (1904)	1
7. Peromyscus leucopus Rafin. (1818).	
<i>Ceratophyllus fasciatus</i> Bosc (1801)	1
<i>Ceratophyllus leucopus</i> Baker (1904), also in nests	119
<i>Ctenophthalmus pseudagyrtis</i> Baker (1904)	1
<i>Neopsylla wenmanni</i> Roths. (1904)	2
<i>Doratopsylla blarinae</i> Fox (1914)	1
<i>Leptopsylla hesperomys</i> Baker (1904)	6
8. Mus musculus L. (1758).	
<i>Ctenophthalmus pseudagyrtis</i> Baker (1904)	1
<i>Doratopsylla blarinae</i> Fox (1914)	1
9. Marmota monax L. (1758).	
<i>Ceratophyllus wickhami</i> Baker (1895)	2
10. Tamias striatus L. (1758).	
<i>Ceratophyllus wickhami</i> Baker (1895)	1
11. Sciurus hudsonius loquax Bangs (1896).	
<i>Ceratophyllus wickhami</i> Baker (1895)	12
12. Blarina brevicauda Say (1823).	
<i>Ctenophthalmus pseudagyrtis</i> Baker (1904)	20
<i>Doratopsylla blarinae</i> Fox (1914)	39
13. Scalops aquaticus L. (1758).	
<i>Ctenophthalmus pseudagyrtis</i> Baker (1904)	25
14. Parascalops breweri Bachm. (1842).	
<i>Ctenophthalmus pseudagyrtis</i> Baker (1904)	16
15. Condylura cristata L. (1758).	
No fleas found	

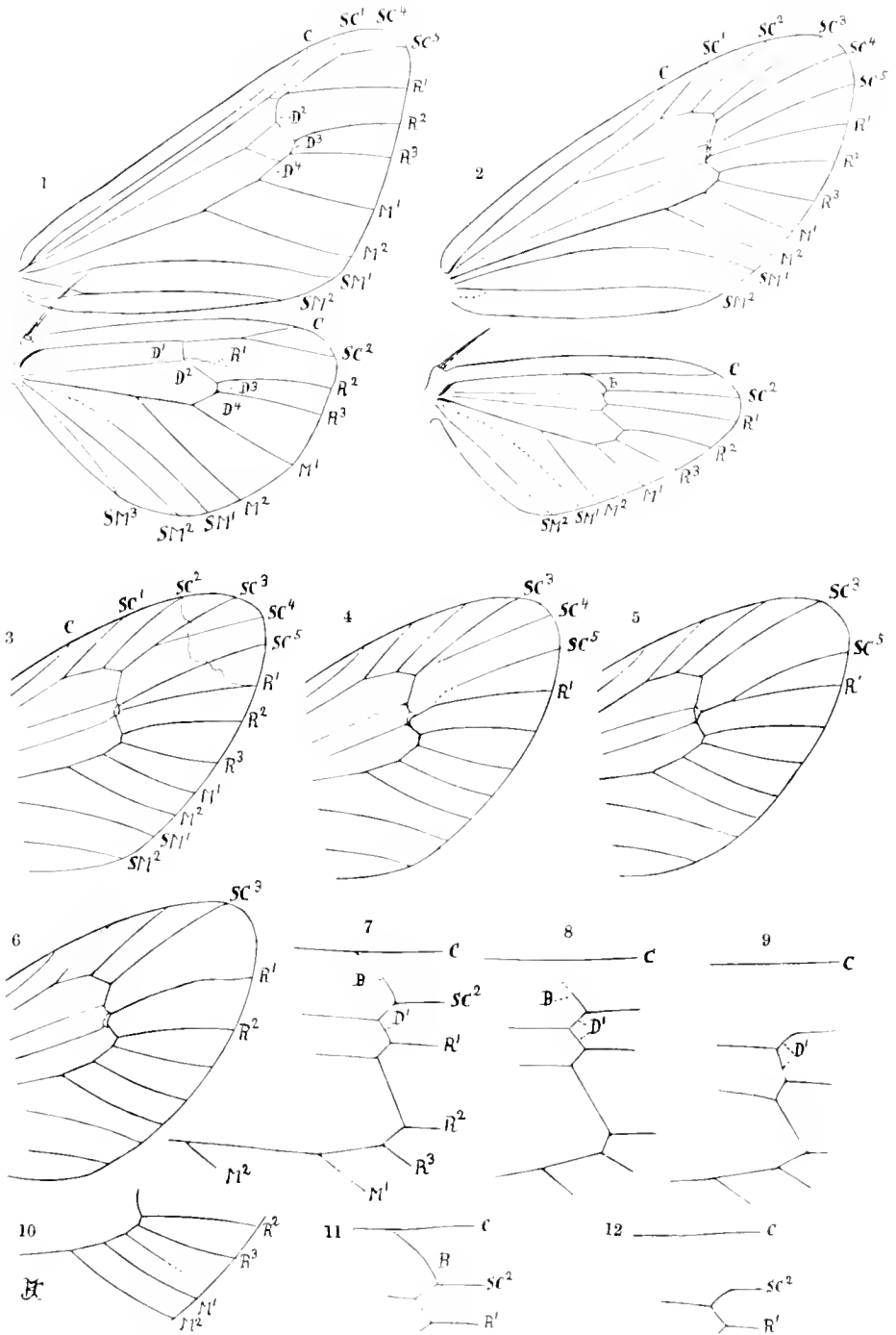
	No. of Fleas.
16. Myotis lucifugus Le Conte (1831). <i>Myodopsylla insignis</i> Roths. (1903)	18
17. Vespertilio fuscus Beauv. (1796). No fleas found	
18. Mephitis putida Cuvier (1798). No fleas found	
19. Procyon lotor L. (1766). <i>Ceratophyllus wickhami</i> Baker (1895)	1
20. Vulpes fulva Desm. (1820). No fleas found	
21. Urocyon cinereoargenteus Mill. (1776). No fleas found	

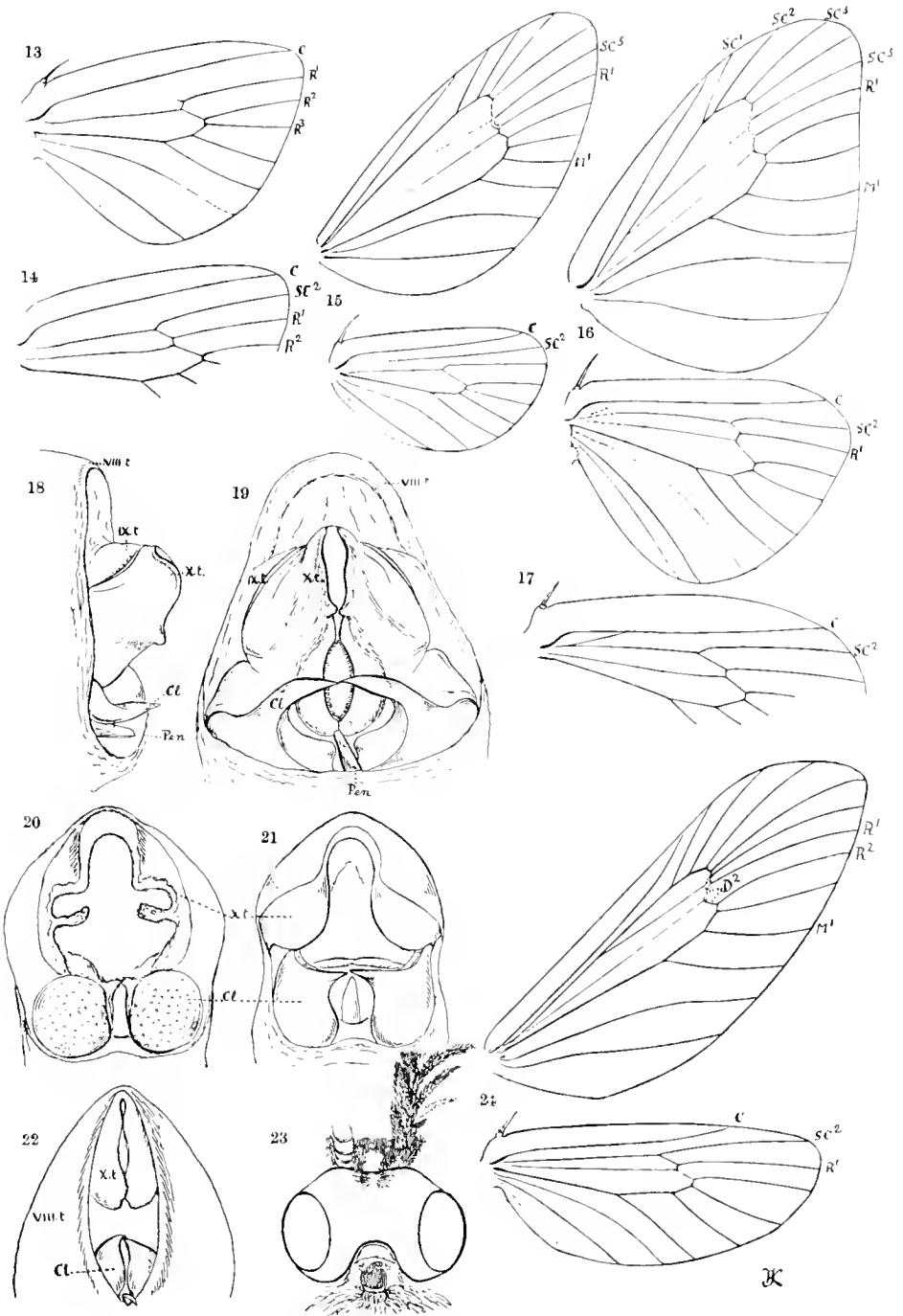
II. BIRDS' NESTS.

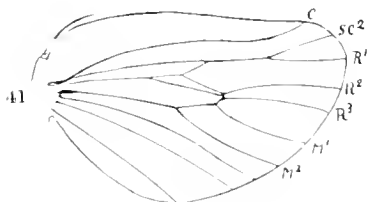
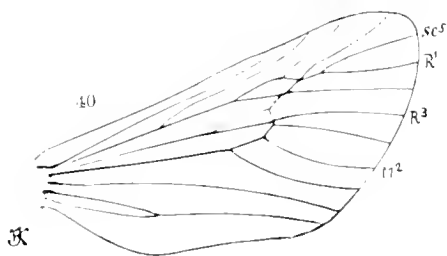
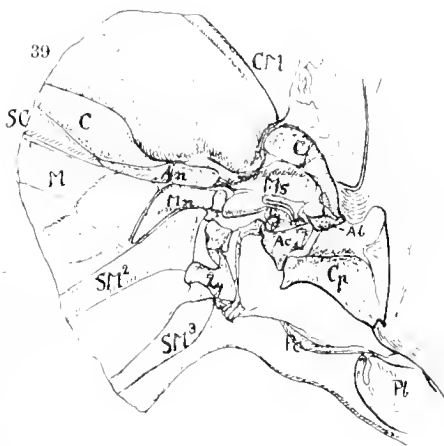
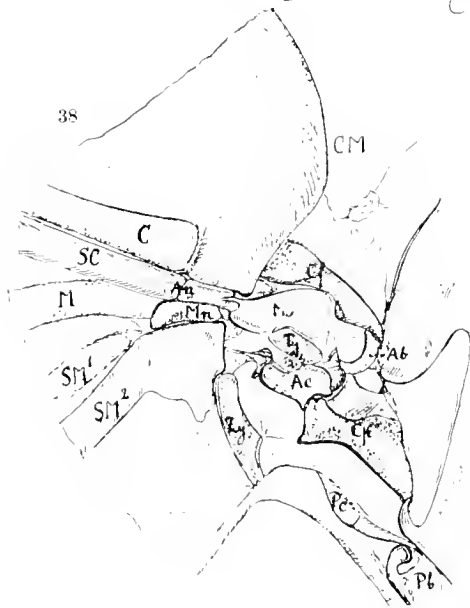
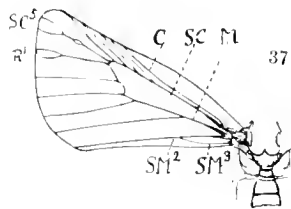
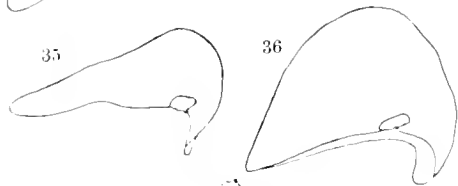
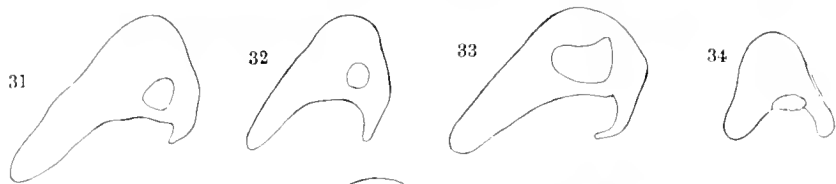
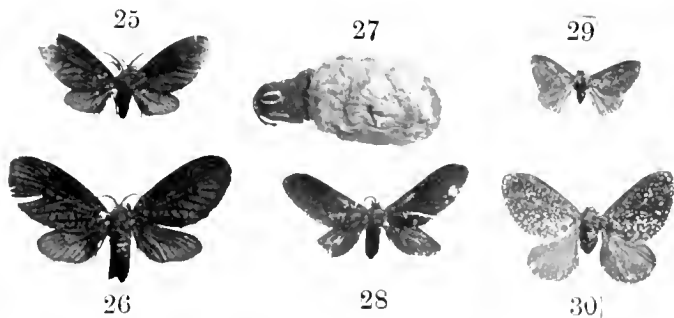
1. Troglodytes aedon aedon Vieill. (1807). <i>Ceratophyllus idius</i> J. & R. (1920)	41
2. Iridoprocne bicolor Vieill. (1807). <i>Ceratophyllus idius</i> J. & R. (1920)	2
<i>Ceratophyllus gallinae</i> Schrank (1803)	2
3. Galeoscoptes carolinensis L. (1766). <i>Ceratophyllus diffinis</i> Jord. (1925)	47
4. Sialia sialis sialis L. (1758). <i>Ceratophyllus gallinae</i> Schrank (1803)	14
<i>Ceratophyllus idius</i> J. & R. (1920)	20
5. Passer domesticus L. (1758). <i>Ceratophyllus gallinae</i> Schrank (1803)	35

EXPLANATION OF PLATES I, II, AND III

Fig. 1.	<i>Perrotia tamatavana</i>	♂, fore- and hindwing	p. 132
.. 2.	<i>Epipomponia multipunctata</i>	♀, fore- and hindwing	p. 138
.. 3.	..	♂, left forewing	p. ..
.. 4.	..	♂, right forewing of the same specimen	p. ..
.. 5.	..	♂, left forewing	p. ..
.. 6.	..	♂, right forewing of the same specimen	p. ..
.. 7.	..	♀, hindwing	p. ..
.. 8.	..	♀, hindwing	p. ..
.. 9.	..	♀, hindwing	p. ..
.. 10.	..	♀, forewing	p. ..
.. 11.	..	♀, left hindwing	p. ..
.. 12.	..	♂, right hindwing of the same specimen	p. ..
.. 13.	<i>Epipyrops doddi</i>	♂, left hindwing	p. ..
.. 14.	.. <i>atra</i>	♂, left hindwing	p. ..
.. 15.	.. <i>malagassica</i>	♂, fore- and hindwing	p. ..
.. 16.	<i>Anopyrops corticina</i>	♂	p. 140
.. 17.	..	♀, left hindwing	p. ..
.. 18.	<i>Epipomponia multipunctata</i> ,	apex of abdomen, lateral aspect	p. 138
.. 19.	..	apex of abdomen, ventral aspect	p. ..
.. 20.	<i>Epipyrops atra</i>	♂, apex of abdomen, ventral aspect	p. ..
.. 21.	.. <i>doddi</i>	♂, apex of abdomen, ventral aspect	p. ..
.. 22.	<i>Anopyrops corticina</i>	♂, apex of abdomen, ventral aspect	p. 140
.. 23.	<i>Epipomponia elongata</i>	♀, head, ventral aspect	p. 139
.. 24.	..	♀, fore- and hindwing	p. ..
.. 25.	.. <i>multipunctata</i>	♂	p. 138
.. 26.	..	♀	p. ..
.. 27.	..	cocoon	p. ..
.. 28.	.. <i>elongata</i>	♀	p. 139
.. 29.	<i>Anopyrops corticina</i>	♀	p. 140
.. 30.	..	♀	p. ..
.. 31.	Tegula of <i>Diphoridas</i> (<i>Hesperiidae</i>)		p. 144
.. 32.	.. <i>Notodonta</i>		p. ..
.. 33.	.. <i>Xanthospilopteryx</i>		p. ..
.. 34.	.. <i>Anthocharis</i>		p. ..
.. 35.	.. <i>Chrysophanus</i>		p. ..
.. 36.	.. <i>Euploea</i>		p. ..
.. 37.	Forewing of <i>Eumesia semiargentea</i>		p. 146
.. 38.	Base of forewing of <i>Chrysophanus dispar</i>		p. 145
.. 39.	..	a Hesperid	p. ..
.. 40.	Forewing of <i>Arctiocossus antargyreus</i> Feld. (1867)		p. 140
.. 41.	Hindwing of <i>Arctiocossus antargyreus</i> Feld. (1867)		p. ..







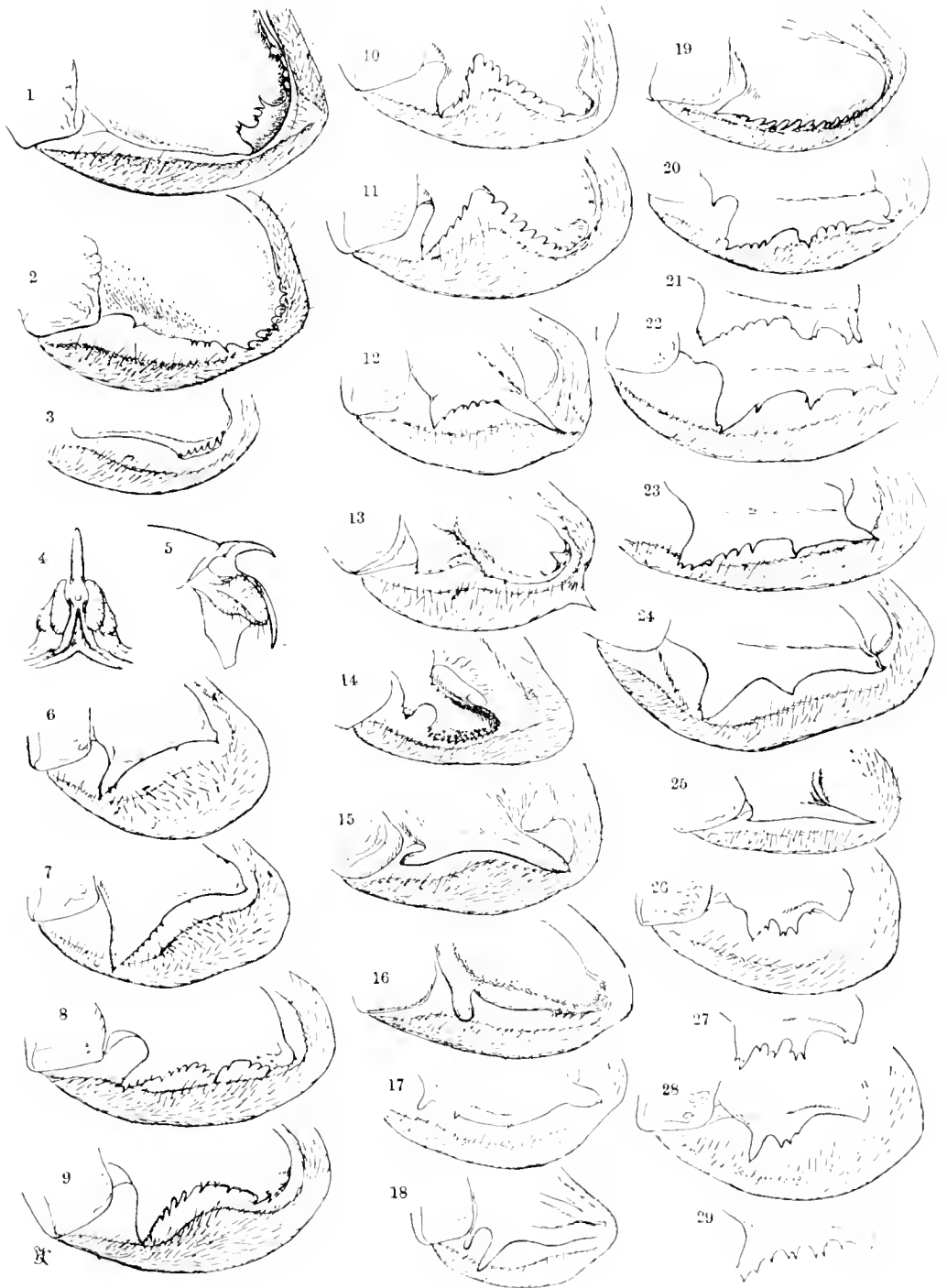


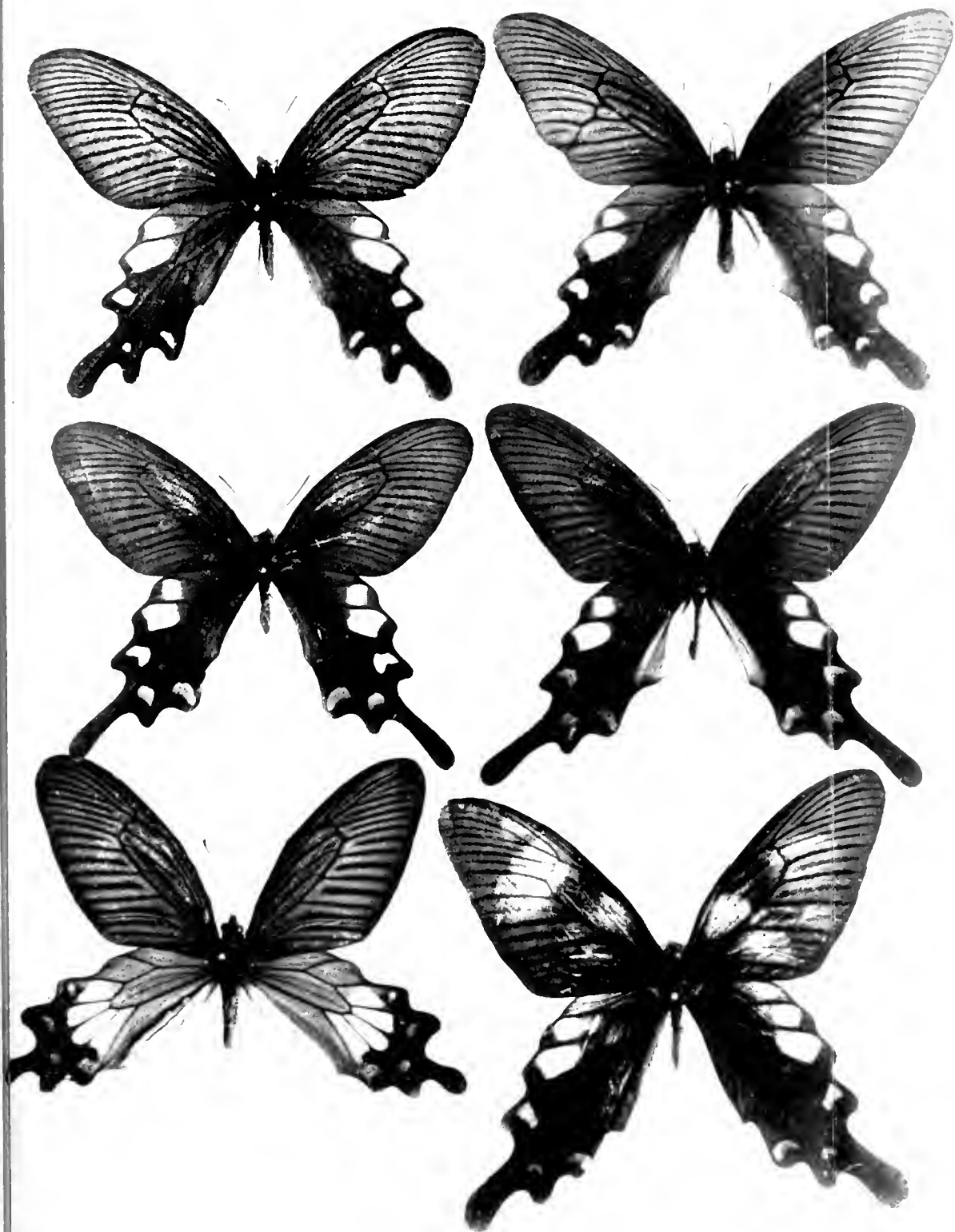
EXPLANATION OF PLATE VI.

Fig. 1.	Clasper of <i>Papilio polla</i>	p. 160
" 2.	" " <i>latreillei genestieri</i>	p. 160
" 3.	" " " <i>robus</i>	p. 161
" 4.	Anal segment of <i>P. philoxenus polyeuctes</i> , dorsal aspect	p. 162
" 5.	The same, lateral aspect	p. "
" 6.	Clasper of <i>P. philoxenus philoxenus</i>	p. 162
" 7.	" " " <i>polyeuctes</i>	p. 162
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NOVITATES ZOOLOGICAE

Vol. XXXIV.

JULY 1928.

No. 3.

TYPES OF BIRDS IN THE TRING MUSEUM.

BY ERNST HARTERT, PH.D.

C. Additional and overlooked Types.

Continued from NOVITATES ZOOLOGICAE vol. xxiv, 1927, p. 38. See also NOVITATES ZOOLOGICAE, 1918, 1919, 1920, 1922, 1924, 1925, 1926.

IX.

SINCE 1918, when I began to catalogue the types of birds in the Tring Museum, Lord Rothschild and I and other authors, chiefly Dr. van Someren, Colonel Meinertzhagen, and others, have described new forms, the types of which are now in this Museum, while I also overlooked a few types. All these I am now trying to enumerate. I am thus bringing the number of type specimens to 2005, excepting the types in the Brehm collection (already catalogued) and those of Australian birds in the Mathews collection.

It is satisfactory to see that other museums are publishing lists of their types, following my plan—for example, the Stockholm Museum, which published a list of their types written by Count Gyldenstolpe.

It is to be hoped that all museums do the same, the most necessary being the Paris Museum, the British Museum, the Leiden Museum, the Senckenberg Museum in Frankfurt, München, Vienna, the American Museum, and others. There is, however, at present very little hope that the bigger museums do this.

CORVIDAE.

† 1746. **Corvus cornix judaeus** Meinertzh. = *Corvus cornix sardonius*.

Corvus cornis judaeus Meinertzhagen, *Bull. B.O. Club*, xxxix, p. 85 (1919—Palestine).

Type: ♂ Bir Salem near Ludd, Palestine, 17.xii.1918. R. Meinertzhagen coll.

(Cf. Meinertzh., *Nov. Zool.*, 1926, p. 108.)

1747. **Corvus cornix minos** Meinertzh. = *Corvus cornix minos*.

Corvus cornis minos, Meinertzhagen, *Bull. B.O. Club*, xli, p. 19 (1920—Crete).

Type: ♂ Candia district, 2,000 feet, 13.vi.1920. R. Meinertzhagen coll. (Upperside much worn.)

1748. *Garrulus glandarius cretorum* Meinertzh. = *Garrulus glandarius cretorum*. *Garrulus glandarius cretorum* Meinertzhagen, *Bull. B.O. Club*, xli, p. 19 (1920—Ilex forests on hills of Crete).

Type: ♂ ad. Mt. Ida, Crete, 4,500 feet, 15. vi. 1920. R. Meinertzhagen coll.

PARADISAEIDAE.

1749. *Paradisaea mixta* R.

Paradisaea mixta Rothschild, *Bull. B.O. Club*, xli, p. 127 (1921—"Habitat? The bird may be a hybrid between *minor* and *novaeguineae*, but is not probable").

Type: ♂ ad., tradeskin that came to London soon after the war, no indication of locality. At that time Birds of Paradise came in lots from various parts of New Guinea, some evidently from the basins of the Digul or Fly River, containing lots of *raggiana*, *novaeguineae*, and hybrids between the two; others apparently from the systems of the Markham and (or) Waria Rivers, in East New Guinea, or further south, containing many *intermedia*, some *granti* and one *maria*. The exact localities of these birds would be very interesting indeed, but those of the second category must have come from somewhere in the hinterland of the great Huon Gulf. The exact locality of *P. maria* was somewhat uncertain, until Stresemann, *Orn. Monatsber.* 1925, p. 128, made it known that it occurred on the southern slopes of the Herzog Mountains. Whether *P. mixta* is a subspecies or a result of hybridization, cannot at present be decided.

† 1750. *Paradisaea apoda subintermedia* R. = *Paradisaea apoda intermedia*.

Paradisaea apoda subintermedia Rothschild, *Bull. B.O. Club*, xli, p. 138 (1921—"Inland from Huon Gulf").

Type: ♂ ad., tradeskin without locality, said to have come from inland of Huon Gulf, but there is no authority for this statement, no collector being known. The skins now known of *intermedia* came from the north-eastern part of the former "British New Guinea," from the Kumusi River (type locality) to Collingwood Bay. The consignment, out of which Lord Rothschild had the type of *subintermedia*, contained specimens with duller nuptial side-plumes, and others as brilliant as in *intermedia*, and intermediates. As there are also specimens to all intents and purposes indistinguishable from the type of *subintermedia*, I regard the latter name as a pure synonym of *intermedia*, and I think they were collected near Holnicote Bay, where the type of *intermedia* was obtained, on the Kumusi River.

1751. *Amblyornis subalaris germanus* R. = *Amblyornis inornatus germanus*.

Amblyornis subalaris germanus Rothschild, *Bull. B.O. Club*, xxvii, p. 13 (1910—"Rawlinson Mts., German New Guinea").

Type: ♀ Rawlinson Mts. Bought from the late Professor Foerster, who had it no doubt from Rev. Keysser.

Since describing this subspecies Lord Rothschild has received an adult male from the Rawlinson Mts. *Amblyornis germanus* is a small and dark very distinct form, not of *subalaris*, but of *inornatus*. Wing of adult male 129 mm.

DICRURIDAE.

1752. **Dicrurus leucophaeus stevensi** Baker = *D. leucophaeus stevensi*.

Dicrurus leucophaeus stevensi Baker, *Nor. Zool.* xxv, p. 295 (not 294!) (1918—Darjiling).

Type: ♀ ad. Rungarum, Darjiling, 5,700 feet, 25. iv. 1900. C. T. Bingham coll.

This group of Drongos is rather complicated, and I could not criticize Baker's treatment without a thorough study of the Drongos, for which the material in the Tring Museum is not sufficient, but it seems to me that the author was justified in naming this form.

1753. **Dicrurus leucophaeus minimus** Baker = *D. leucophaeus minimus*.

Dicrurus leucophaeus minimus Baker, *Nor. Zool.* xxv, p. 296 (1918—Ceylon).

Type: ♂ Trincomali, Ceylon, 22. xii. 1874 (not 23. xii!). Coll. W. V. Legge.

As usual in Ceylon birds, specimens from that island are much smaller than the allied forms.

1754. **Dicrurus modestus ugandensis** van Som. = *Dicrurus modestus ugandensis*.

Dicrurus modestus ugandensis van Someren, *Bull. B.O. Club*, p. 102 (1921—"Bugoma, Budongo, Lugalambo, Mabira, Elgon in Uganda; and Kavirondo in East Africa").

Type: ♂ Budongo, 10. xii. 1918. V. G. L. van Someren coll.

(?) 1755. **Dicrurus elgonensis** van Someren = *Dicrurus ludwigi elgonensis*.

Dicrurus elgonensis van Someren, *Bull. B.O. Club*, xl, p. 95 (1920—"Elgon and North Kavirondo").

Type: Lerundo (Nyarondo of some maps), ♂ ad., 21. iii. 1917. H. J. Allen Turner coll. for Col. Meinertzhagen.

(We have no series to confirm the differences of this form, but in any case they must be very slight.)

1756. **Dicrurus ater harterti** Baker = *Dicrurus macrocerus harterti*.

Dicrurus ater harterti Baker, *Nor. Zool.* xxv, p. 299 (1918—Formosa).

Type: ♂ Tai-peh, Formosa, 6. iv. 1896. Collected by Alan Owston's Japanese hunters.

This form seems to me to be fairly distinct.

ORIOOLIDAE.

1757. **Oriolus luteolus thaiacous** Hart. = *Oriolus xanthornus thaiacous*.

Oriolus luteolus thaiacous Hartert, *Bull. B.O. Club*, xxxviii, p. 63 (1918—Koh Lak in Peninsular Siam).

Type: ♂ ad., Koh Lak, Siamese portion of Malay Peninsula, almost latitude of town of Tenasserim, 17. xi. 1913. W. J. F. Williamson coll.

Meinertzhagen, in his review of the genus *Oriolus*, *Ibis*, 1923, p. 75, keeps this subspecies separate (though misspelling its name *thaiacous*), adding that "some specimens of the typical race from southern India are indistinguishable from this race." Baker, *B. India*, iii, p. 12 (1926), says it is impossible to keep it separate, as "many" birds from India, especially from the "South-West," are indistinguishable. Judging from the material in Tring, however, such

specimens must be exceedingly rare, and can hardly be "many." If single specimens are allowed to upset a subspecies, the Ceylonese *ceylonensis* should also be united, as we have a male from Ceylon with a wing of 135 mm.

STURNIDAE.

1758. **Aplonis fuscus hullianus** Math. = *Aplonis fuscus hullianus*.

Aplonis fuscus hullianus Mathews, *Nor. Zool.* xviii, p. 451 (Lord Howe Island).

Type: An unsexed specimen without date, collected by (or for) Travers on Lord Howe Island.

This form differs from *A. fuscus fuscus* of Norfolk Island by its larger (stouter) bill, and old males are on the upperside more greyish and much less metallic green, especially on the head. Mathews' diagnosis does only partially hold good, but *hullianus* is a very distinct form.

1759. **Amydrus montanus** Som. = *Onychognathus morio montanus*.

Amydrus montanus van Someren, *Bull. B.O. Club*, xl, p. 52 (1919—Mt. Elgon). Cf. *Nor. Zool.* 1922, p. 132.

Type: ♂ ad., Mt. Elgon, 9,000–10,000 feet, 15.iii.1916. Dr. van Someren coll.

† 1760. **Cosmopsarus regius donaldsoni** Som. = *Cosmopsarus regius regius*.

Cosmopsarus regius donaldsoni van Someren, *Bull. B.O. Club*, xl, p. 52 (1919—"Somaliland, S. Ethiopia, and northern frontier district in East Africa").

Type: ♂ ad., Marsabit, A. Blayney Percival coll.

In *Bull. B.O. Club*, xlv, pp. 70, 71, Dr. van Someren has explained that he redescribed the *C. regius regius* again, when he named *donaldsoni*, while the birds which he took for typical *regius* required a name, and he named them *C. regius magnificus*.

1761. **Lamprocolius sycobius pestis** Som. = *Lamprocolius sycobius pestis*.

Lamprocolius sycobius pestis van Someren, *Bull. B.O. Club*, xli, p. 124 (1921—"Mombasa, Samburu, Maungu, N'di"). (Cf. also *Nor. Zool.* 1922, p. 131.)

Type: ♂ ad., Samburu, 18.x.1917. Dr. V. G. L. van Someren coll.

Dr. van Someren's "*pestis*" seems to be a form found in the thorn-bush country from Mombasa northwards. It seems to differ from true *sycobius* merely by its larger bill, and I think it was an error that in 1922 its distribution was extended to "Lake Kivu and Tanganyika."

ICTERIDAE.

1762. **Molothrus occidentalis** Berl. & Stolz. = *Molothrus bonariensis occidentalis*.

Molothrus occidentalis Berlepsch & Stolzmann, *Proc. Zool. Soc. London*, 1892, p. 378 ("Hab. in Peru occ., Lima, etc.").

Types: ♂, Lima, 10.xi.1889, ♀, Lima, 18.x.1889. Jean Kalinowski coll.

Both ♂ and ♀ are marked "typus" by Stolzmann. They are therefore as much types as any other specimens. The female is much more distinct than the male!

PLOCEIDAE.¹

1763. **Erythrura trichroa eichhorni** Hart. = *Erythrura trichroa eichhorni*.
Erythrura trichroa eichhorni Hartert, *Nor. Zool.* 1924, p. 274 (St. Matthias Island, north of New Hanover).

Type: ♂ ad., St. Matthias Island, 5.vii.1923. A. F. Eichhorn coll.

1764. **Amblyospiza albifrons montana** Som. = *Amblyospiza albifrons montana*.²
Amblyospiza albifrons montana van Someren, *Bull. B.O. Club*, xli, p. 122 (1921—"Kenia, Kikuyu, Nairobi, Kisumu, etc.").

Type: ♂, Fort Hall, Kikuyu Mts., 25.iv.1918. Dr. van Someren coll.

In my opinion, the status and distribution requires further investigation.

1765. **Anaplectes jubaensis** Som. = *Anaplectes jubaensis*.
Anaplectes jubaensis van Someren, *Bull. B.O. Club*, xl, p. 94 (1920—"South-west of Juba River").

Type: ♂ ad., "Juba river," December 1912. A. Blayney Percival coll.

1766. **Otyphantes emini budongoensis** Som. = *Ploceus (Otyphantes) emini budongoensis*.

Otyphantes emini budongoensis van Someren, *Bull. B.O. Club*, xli, p. 123 (1921—"Budongo, Masindi, Bugoma").

Type: ♂ ad., Busindi, 7.vi.1919. Collected by Dr. van Someren's collectors.

† 1767. **Heterophantes nigricollis vacillans** Som. = *Ploceus (Heterophantes) nigricollis nigricollis*.

Heterophantes nigricollis vacillans van Someren, *Bull. B.O. Club*, xli, p. 123 (1921—"S. Ankole, Bugoma, Budongo, Mabendi, Mabira, Elgon, Entebbe, N. Kavirondo, Taveta, Bukoba").

Type: ♂ ad., Budongo, 17.xii.1918. Collected by Dr. van Someren's excellently instructed native collectors.

† 1768. **Hyphantornis intermedius littoralis** Som. = *H. intermedius intermedius*.
Hyphantornis intermedius littoralis van Someren, *Bull. B.O. Club*, xli, p. 123 (1921—"Limited to the coast-belt and Taru district, Chagamwe and Malindi").

Type: ♂ ad., Chagamwe, 14.iv.1919. Collected by Dr. van Someren's well-trained collectors.

† 1769. **Hyphantornis intermedius kisumui** Som. = *H. intermedius intermedius*.
Hyphantornis intermedius kisumui van Someren, *Bull. B.O. Club*, xli, p. 122 (1921—"Kisumu, Kano district, Kendu Bay, Simba, Kitui").

Type: ♂ ad., Kisumu, 10.v.1918. Collected by Dr. van Someren's well-trained collectors.

The individual variation of this species, specially as regards size, is great, and larger series from southern Abyssinia seem to prove the instability of these supposed subspecies.

¹ According to recent investigations the genus *Passer* should be included in the *Ploceidae*.

² In the recognition of African *Ploceidae* and some other African *Passeres* I have largely followed W. L. Selater, who allowed me to consult the MS. of his *Syst. Av. Ethiopiarum*.

1770. **Ploceus melanocephalus usumburae** Neum. = *Ploceus (Hyphantornis) melanocephalus usumburae* (?).

Ploceus melanocephalus usumburae Neumann, *Journ. f. Orn.* 1920, p. 82 ("Usumbura, Nordspitze des Tanganyka").

Type: ♂ ad., Usumbura, 17.iv.1908. Rudolf Grauer coll.

No series is to hand, and this form requires further investigation. Two specimens from the same place obviously belong to Hartlaub's *dubosi* and are considered to be a different species by Neumann. I cannot help suggesting that they might possibly be the same as *usumburae*—these birds vary in the length of the wing to some extent, and the development of rufous-brown on the sides of the throat may also vary.

1771. **Sitagra luteola kavirondensis** Som. = *Ploceus (Sitagra) luteolus kavirondensis*.

Sitagra luteola kavirondensis van Someren, *Bull. B.O. Club*, xli, p. 123 (1921—"Soronko River, S. Kerio, Kacheliba, Kisumu, Kibigori, also Entebbe").

Type: ♂ ad., Soronko River, 28.iv.1916. V. G. L. van Someren coll.

1772. **Quelea sanguinirostris centralis** Som. = *Quelea quelea centralis*.

Quelea sanguinirostris centralis van Someren, *Bull. B.O. Club*, xli, p. 122 (1921—"Lake districts of Central Africa, Uganda, Kivu, N. Tanganyika, Toro, Lake Albert Edward, Bukoba"); *Nov. Zool.* 1922, p. 147.

Type: ♀, Lake Albert Edward, 28.xi.1910. V. G. L. van Someren coll.

While this form is usually well marked, some specimens cannot be distinguished, it seems to me.

(?) 1773. **Pyromelana nigroventris rufigula** Som. = *Pyromelana rufigula* (?).

Pyromelana nigroventris rufigula van Someren, *Bull. B.O. Club*, xli, p. 122 (1921—"Bura, Teita Voi, and Kitui in Ukamba").

Type: ♂ ad., Nziu River, 14.xii.1918. G. V. L. van Someren coll.

This bird occurs together with black-throated males and cannot very well be a subspecies. Mr. Selater is inclined to accept it as a species, but I suggest that it may be a mutant of *nigroventris*; the extent of the red throat-patch varies somewhat.

1774. **Penthetria ardens teitensis** Som. = *Penthetria ardens teitensis*.

Penthetria ardens teitensis van Someren, *Bull. B.O. Club*, xli, p. 122 (1921—"East of Kilimanjaro and Teita, Bura Hills"); *Nov. Zool.* 1922, p. 151.

Type: ♂ ad., Bura Hills, 21.iii.1919. Dr. V. G. L. van Someren coll.

1775. **Penthetria laticauda suahelica** Som. = *Penthetria ardens suahelica*.

Penthetria laticauda suahelica van Someren, *Bull. B.O. Club*, xli, p. 121 (1921—"East Africa"); *Nov. Zool.* 1922, p. 151.

Type: ♂ ad., Nairobi, 4.iv.1917. V. G. L. van Someren coll.

Selater (*in litt.*) considers this form to be a subspecies of *ardens*, and I think he is right.

† 1776. **Uraeginthus bengalus littoralis** Som. = *Uraeginthus bengalus ugogensis*. *Uraeginthus bengalus littoralis* van Someren, *Nor. Zool.* xxix, p. 160 (1922—"Coast of South Somaliland to Mombasa").

Type: ♀, Mombasa, 10.v.1918. V. G. L. van Someren coll.

I think Sclater must be right in supposing (*in litt.*) that *littoralis* is the same as *ugogensis* Rehw. (*Mitt. Zool. Mus. Berlin*, v, 2, 1911, p. 228, in the text, as "var." of *U. bengalus*). An undoubted synonym of *littoralis* is *U. bengalus loveni* Granvik (*Journ. f. Orn.*, 1923, Sonderheft, p. 181). Dr. Granvik evidently did not read the original description, but quoted the one in the *Journ. E. Africa and Uganda Nat. Hist. Soc.*, vi, p. 258, which was not published in "1911" but in 1918. The description there is somewhat contradictory to that of 1922, but the latter only is of importance, as it is the diagnosis of the new subspecies.

? † 1777. **Aidemosyne cantans tavetensis** Som. = *Aidemosyne cantans meridionalis* (?).

Aidemosyne cantans tavetensis van Someren, *Bull. B.O. Club*, xli, p. 121 (1921—"South Ukambani to Kilimanjaro (Simba, Tsavo, N'buyumi, Taveta)").

Type: ♀ ad., Simba, 17.x.1917. V. G. L. van Someren coll.

I doubt if it will be possible to maintain the distinctness of the subspecies *tavetensis*, and believe Sclater's suggestion (*in litt.*) that they are not separable from *A. cantans meridionalis* will be found to be correct.

1778. **Ortygospiza atricollis dorsostrciata** Som. = *Ortygospiza atricollis dorsostrciata*. *Ortygospiza atricollis dorsostrciata* van Someren, *Bull. B.O. Club*, xli, p. 115 (1921—"Butiti, Toro, and South Ankole, Western Uganda").

Type: ♂ ad., South Ankole, Uganda, 8.x.1919. Dr. V. G. L. van Someren coll.

1779. **Hypargus monteiri ugandensis** Som. = *Hypargus monteiri ugandensis*.

Hypargus monteiri ugandensis van Someren, *Bull. B.O. Club*, xli, p. 115 (1921—"Masindi, Mubango, Kyetume, Entebbe, Buzileranjoon in Uganda, north to Lado, Langomeri"); *Nor. Zool.* 1922, p. 162.

Type: ♂ ad., Masindi, 15.xii.1918. Collected by Dr. van Someren's trained men.

1780. **Granatina ianthogaster rothschildi** Som. = *Granatina ianthinogaster rothschildi*.

Granatina ianthogaster rothschildi van Someren, *Bull. B.O. Club*, xl, p. 53 (1919—"North and South Kavirondo").

Types: ♂♀, Kisumu, 22. and 23.v.1916. V. G. L. van Someren coll.

This form seems to be distinct but nearest to *roosecelti* Mearns (*Smithson. Misc. Coll.*, lxi, 9, p. 3, 1913), but the spots round the eyes are darker blue and the abdomen is much darker.

? † 1781. **Granatina ianthogaster montana** Som. = *Granatina ianthinogaster ianthinogaster* (?).

Granatina ianthogaster montana van Someren, *Bull. B.O. Club*, xl, p. 53 (1919—"The mountainous plateau in the region of Lakes Naivasha and Nakuru").

Type: ♂, Naivasha, 20.ii.1919. V. G. L. van Someren coll.

I have hardly any doubt that *montana* is the same as typical *ianthinogaster*, but we are in want of a good series of adult females.

1782. *Granatina ianthogaster ugandae* Som. = *Granatina ianthinogaster ugandae* (?).

Granatina ianthogaster ugandae van Someren, *Bull. B.O. Club*, xl, p. 53 (1919—"The desert country in western Uganda south to South Rudolf and Suk"; *Nor. Zool.* 1922, p. 159. "S. Ethiopia to Lake Rudolf and Turkana." The first statement in 1919 was erroneous; it never occurs in western Uganda).

Type: ♂, Mt. Moroto, N.E. Uganda, 30. xi. 1917. V. G. L. van Someren coll. I have no material (no females!) to discuss this form.

(?) 1783. *Pytelia percivali* Som. = *Pytelia melba percivali* (?).

Pytelia percivali van Someren, *Bull. B.O. Club*, xl, p. 56 (1919—"Loita Plains south to Nguruman Hills"); *Nor. Zool.* 1922, p. 161.

Type: ♀, Loita, 9. vii. 1918. A. Blayney Percival coll.

This form—judging from the well-preserved type-specimen, which is all we have—is nearest to *P. m. belli* Ogilvie-Grant, but is darker on neck and neck, has a darker back, and larger white spots on the breast. Mr. Selater, however, tells me that a series from the Loita plains appears to be inseparable from the specimens from Ruwenzori, Lake Albert, etc.

† 1784. *Pytelia melba mosambica* Som. = *Pytelia melba grotei*.

Pytelia melba mosambica van Someren, *Bull. B.O. Club*, xl, p. 55 (1919—"North Mozambique").

Type: ♂ ad., Lumbo, 6. viii. 1918. V. G. L. van Someren coll.

There seems to be no doubt that this is Reichenow's *P. melba grotei* from the coast districts of southern Tanganyika Territory. (Teste Selater *in litt.* and my conclusion.) Reichenow's name was published in April, van Someren's December 31, 1919.

1785. *Lagonosticta jamesoni taruensis* Som. = *Lagonosticta rubricata taruensis*.

Lagonosticta jamesoni taruensis van Someren, *Bull. B.O. Club*, xl, p. 54 (1919—"Coast of British East Africa from Lamu to Mombasa and inland to the Taru and South Ukamba"); *Nor. Zool.* 1922, p. 164.

Type: ♂ ad., Tsavo, 14. iii. 1918. V. G. L. van Someren coll.

1786. *Lagonosticta rhodopareia umbriventer* Som. = *Lagonosticta rubricata umbriventer*.

Lagonosticta rhodopareia umbriventer van Someren, *Bull. B.O. Club*, xl, p. 54 (1919—"East Mt. Kenia and the Northern Guasso N'gyiro"); *Nor. Zool.* 1922, p. 163.

Type: ♂, Embu, Kenia, 9. iv. 1913. V. G. L. van Someren coll.

This form seems to be nearest to *hildebrandti* Neum. but paler.

1787. *Lagonosticta senegalla kikuyensis* Som. = *Lagonosticta rubricata kikuyensis*.

Lagonosticta senegalla kikuyensis van Someren, *Bull. B.O. Club*, xl, p. 55 (1919—"British East Africa from Kavirondo to the coast and East Kilimanjaro"); *Nor. Zool.* 1922, p. 161.

Type: ♀, Nairobi, 17. ii. 1917. V. G. L. van Someren coll.

This form, especially the female, is darker than *brunniceps* and *somaliensis*. It is closest to *ruberrima*, the males of which are hardly distinguishable, while the females of *kikuyensis* are greyer, less rufous on the underside.

1788. **Estrilda charmosyna kivanukae** Som. = *Estrilda charmosyna kivanukae*.
Estrilda charmosyna kivanukae van Someren, *Bull. B.O. Club*, xl, p. 55 (1919—"South Ukamba to
 Loita and the country east of Kilimanjaro"): *Nov. Zool.* 1922, p. 165.

Type: ♂, Mbuyuni, 26.vii.1918. V. G. L. van Someren coll.

FRINGILLIDAE.

† 1789. **Emberiza Forbesi** Hartl. = *Emberiza affinis affinis*.

Emberiza Forbesi Hartlaub, *Journ. f. Orn.* 1882, p. 324 (Langomeri).

Type: ♂ ad., Langomeri, 18.viii.1881. Emin Pasha coll.

E. forbesi is certainly the same as *E. affinis* Heuglin, *Journ. f. Orn.*, 1867.
 (Clearly described as having *no* white bars on the wing, name ex Paul Wilhelm
 von Württemberg's MS., characterization of Heuglin.)

1790. **Emberiza cia omissa** R. = *Emberiza cia omissa*.

Emberiza cia omissa Rothschild, *Nov. Zool.* xxviii, p. 60 (1921—Tsin-ling Mts., China).

Type: ♀ ad., Si, Taipaishang, Tsin-ling Mts. China, 2.xi.1905. Collected
 by Alan Owston's Japanese collectors.

Sushkin splits the Meadow Buntings into two species, *E. cia*, the western
 group, *E. godlewskii*, the eastern group, and therefore calls this form *E. godlewskii*
omissa. He does this apparently, because both the western group with a more
 greyish and black crown, and the eastern group with more rufous or chestnut
 crown, are separable into various races, but not because he finds that they
 inhabit similar areas anywhere. He thus explains by his nomenclature that
 there are two small divisions of Meadow Buntings, while my nomenclature shows
 the relationship and supposed common origin of all these forms, which to me seems
 to be much more important. It is impossible to explain the relationship and
 origin of all forms by our nomenclature, and I am content if I can express whether
 forms are subspecies or not; in entomology we often have seasonal forms, in
 birds of course not, and I do not endeavour to name varieties, aberrations,
 mutations, for which descriptions suffice for me. If Hachisuka, Stresemann,
 and others begin to give names to supposed mutations they will burden nomen-
 clature greatly, while descriptions would advance science equally, but enthusiasts
 of the study of individual variation may think differently.

† 1791. **Pyrrhula erythaca taipaishanensis** R. = *Pyrrhula erythaca wilderi*.

Pyrrhula erythaca taipaishanensis Rothschild, *Nov. Zool.* 1921, p. 63 (Taipaishang, Tsin-ling Mts.).

Type: ♂, Taipaishang, 17.vi.1905. Collected by Alan Owston's Japanese
 collectors.

Cf. Hartert, *Vög. pal. Fauna*, p. 2057; La Touche, *Handb. B. Eastern China*,
 part iv, pp. 307-309.

1792. **Propyrrhula subhimachala intensior** R. = *Prop. subhimachala intensior*.

Propyrrhula subhimachala intensior Rothschild, *Bull. B.O. Club*, xliii, p. 12 (1922—"Lichiang
 Range").

Type: ♂ ad., Lichiang Range, Yunnan. G. Forrest coll.

This race follows the general tendency of developing deeper-coloured forms
 in Yunnan, but the material at hand is rather insufficient, and the series from

Sikkim at hand is poor: this form therefore requires confirmation. The species varies considerably, and one of Forrest's examples hardly differs from a Sikkim skin.

1793. **Carpodacus rubicilloides lapersonnei** Meinertzh. = *Erythrina rubicilloides lapersonnei*.

Carpodacus rubicilloides lapersonnei Meinertzhagen, *Bull. B.O. Club*, xvi, p. 83 (1926—Shushal, Eastern Ladak).

Type: ♂ ad., Shushal, eastern Ladak, 14,500 feet, 11.vi.1925. R. Meinertzhagen coll.

The distribution of the various forms of *E. rubicilloides* (which is better separated specifically from *rubicilla*) is not yet quite clear, and requires confirmation. Meinertzhagen says he examined specimens from Ladak, Gyantse, Kansu, and Koko Nor, while his *C. r. lueifer* is to inhabit southern Tibet north to Mt. Everest and Kansu!

1794. **Sorella emini guasso** Som. = *Sorella emini guasso*.

Sorella emini guasso van Someren, *Bull. B.O. Club*, xliii, p. 38 ("The more open bush and thorn country of the country round the N. Guasso Nyiro River and Northern Frontier").

Type: ♂ ad., N. Guasso Nyiro, N.E. Kenya, April 1919, collected by Dr. van Someren's native collectors.

† 1795. **Passer domesticus halfae** Meinertzh. = *Passer domesticus niloticus*.

Passer domesticus halfae Meinertzhagen, *Bull. B.O. Club*, xli, p. 67 (1920—Wadi Halfa, Egypt).

Type: ♂ ad., Wadi Halfa, 21.ii.1904. Presented by R. Meinertzhagen.

1796. **Passer rutilans intensior** R. = *Passer rutilans intensior*.

Passer rutilans intensior Rothschild, *Bull. B.O. Club*, xliii, p. 11 (1922—"Mekong valley").

Type: ♂ ad., Upper Mekong Valley, N.W. Yunnan, 7,000–9,000 feet. 6.vii.1921. G. Forrest coll.

1797. **Passer griseus mosambicus** Som. = *Passer griseus mosambicus*.

Passer griseus mosambicus van Someren, *Bull. B.O. Club*, xli, p. 114 (1921—"North Mozambique and East Nyassaland").

Type: ♀ Lumbo, Portuguese East Africa, 13.vii.1918. Collected by Dr. van Someren's native collectors.

1798. **Petronia dentata buchanani** Hart. = *Petronia dentata buchanani*.

Petronia dentata buchanani Hartert, *Nor. Zool.* 1921, p. 134 (Zinder, south of Air).

Type: ♂ ad., Zinder, 19.ii.1920, 1,500 feet, Angus Buchanan coll.

A series of this pale semi-desert form is still wanting.

1799. **Passer griseus abyssinicus** Neum. = *Passer griseus abyssinicus*.

Passer griseus abyssinicus Neumann, *Bull. B.O. Club*, xxi, p. 70 (1908—"Abyssinia and the Galla country southwards to Lake Rudolf").

Type: ♂, Ghadi-Saati, Mareb River, Erythrea, 4,675 feet, 10.ii.1903. G. Schrader coll.

Perhaps Neumann's distribution is given too wide, as birds from the southern Galla country seem to be a little paler (?).

1800. **Poliospiza striolata ugandae** Som. = *Serinus striolatus ugandae*.

Poliospiza striolata ugandae van Someren, *Bull. B.O. Club*, xli, p. 114 (1921—"Mt. Elgon up to the heath zone, and South Ankole").

Type: ♀, Mt. Elgon, 18.vii.1916. Coll. by Dr. van Someren's native collector.

(?) 1801. **Serinus maculicollis taruensis** Som. = *Serinus maculicollis taruensis* (?).

Serinus maculicollis taruensis van Someren, *Bull. B.O. Club*, xli, p. 114 (1921—"Mbuyuni, Maungu, Maktau, Tsavo").

Type: ♂ ad., M'buyuni, 27.vi.1918. Collected by Dr. van Someren's collectors.

While this form is quite different from *dorsostriatus*, the description of *harterti* (Zedlitz, *Journ. f. Orn.*, 1916, p. 50, South Somaliland) agrees very well with *taruensis*, nor can I state, for want of material, how it differs from "*interstinctus*."

(?) 1802. **Serinus** (? *flaviventris*) **loveridgei** Som. = *Serinus flaviventris loveridgei* (?).

Serinus (?*flaviventris*) *loveridgei* van Someren, *Bull. B.O. Club*, xli, p. 114 (1921—"Lumbo, North Mozambique").

Type: ♂, Lumbo, 10.vii.1918. Collected by Dr. van Someren's collectors.

This may be a good subspecies, but the differences from *shelleyi* and some southern *flaviventris* require confirmation and have not been stated.

1803. **Serinus buchmanani** Hart. = *Serinus donaldsoni buchmanani*.

Serinus buchmanani Hartert, *Bull. B.O. Club*, xxxix, p. 50 (1919—"Maktau, British East Africa").

Type: ♂ ad., Maktau, east of Kilimanjaro, 18.ix.1915. Angus Buchanan coll.

Differs from *S. donaldsoni donaldsoni* chiefly in entire absence of white on the vent, wider bill, chiefly noticeable at base of lower bill, and entire or almost entire absence of the yellow superciliary line and the whitish spots on the feathers of the back. Dr. van Someren received specimens from Voi, Maungu, Maktau, Campi-ya-bibi. Cf. *Bull. B.O. Club*, xxxix, p. 59; Mayr, *Orn. Monatsber.* xxxv, p. 48, 181, 1927. Sir Geoffrey Archer collected a series in Somaliland of *S. d. donaldsoni*.

1804. **Serinus pseudobarbatus** Som. = *Serinus mozambicus pseudobarbatus*.

Serinus pseudobarbatus van Someren, *Bull. B.O. Club*, xl, p. 56 (1919—"South and North Kavirondo to N.E. Elgon").

Type: ♂, Fort Ferman, 24.viii.1918. Dr. V. G. L. van Someren coll.

1805. **Linurgus elgonensis** Som. = *Linurgus olivaceus elgonensis*.

Linurgus elgonensis van Someren, *Nor. Zool.* xxv, p. 283 (1918—Forests of Elgon, West Elgon, Kakamega Forest, in North Kavirondo).

Type: ♂ ad., Mt. Elgon, 16.xi.1916. Collected by Dr. van Someren's hunters.

(In *Bull. B.O. Club*, xliii, p. 154, 1923, Dr. van Someren described "*Linurgus kenicnsis*" from the Meru forest, Mt. Kenia, but I am afraid this is not separable from *elgonensis*. The specimens we have from the Meru forest, Mt. Kenia, collected by Noel van Someren, are not all darker than some from Mt. Elgon, some of which are even darker than some Kenia examples, nor is the yellow "collar" between the black of the head and the mantle absent (in fact, it is sometimes more prominent). I think, therefore, that *L. o. elgonensis* is distributed from Mt. Elgon to Kenia, while *L. o. kilimensis* from Mt. Kilimanjaro is quite different).

ALAUDIDAE.

1806. **Melanocorypha bimaculata gaza** Meinertzh. = *Melan. calandra gaza*.

Melanocorypha bimaculata gaza Meinertzhagen, *Bull. B.O. Club*, xxxix, p. 84 (1919—From a large flock watering every evening on the Wadi Gaza, at Shellal, near Beersheba, South Palestine).

Type: ♂, Shellal, 10.ix.1917. R. Meinertzhagen coll.

In 1923, Nachtrag I, *Vög. pal. Fauna*, p. 26, and *Ibis*, 1925, p. 309, myself and Meinertzhagen corrected the above name, *gaza* not being a form of *M. bimaculata* but of *calandra*. Its reddish colour alone separates it from *M. c. calandra*. It is true that I have collected strongly reddish *calandra* in Cyrenaica, but they are tainted from the red soil of that country, while Meinertzhagen's *gaza* are freshly moulted autumn birds, which are not at all tainted. Except the specimens described in 1919, also those (at least three now before me, kindly presented to the Tring Museum) collected by the author at Amman in Transjordan in October and end September, belong to this race, and not to *hebraica*, if the latter is distinct.

1807. **Melanocorypha calandra hebraica** Meinertzh. = *Melan. calandra hebraica*.

Melanocorypha calandra hebraica Meinertzhagen, *Bull. B.O. Club*, xli, p. 21 (1920—"Acre, Damascus, and in the Coastal Plain of Palestine south to Ludd from October to May").

Type: ♂, Jenin, N. Palestine, 1.v.1920. R. Meinertzhagen coll.

As originally described, these birds seem to be intermediate between *M. c. calandra* and *psammochroa*, but they are not reddish like *gaza*. I attach no importance at all to the supposed smaller size, as all *calandra* vary strikingly in size, and some *psammochroa* are as large as some *hebraica*. The difference of *hebraica* from *psammochroa* requires further confirmation, but I consider them different from *gaza*. According to Meinertzhagen, *hebraica* breeds in Palestine.

† 1808. **Calendula dunni pallidior** Hart. = *Calendula dunni*.

Calendula dunni pallidior Hartert, *Nor. Zool.* 1921, p. 130 (Damergu).

Type: ♀? ad., Takakut, Damergu, 1,550 feet, 8.iii.1920. Angus Buchanan coll. No. 430.

Cf. *Nov. Zool.*, 1924, p. 42!

1809. **Eremophila alpestris deosai** Meinertzh. = *Eremophila alpestris deosai*.

Eremophila alpestris deosai Meinertzhagen, *Bull. B.O. Club*, xlvi, p. 84 (1926—"Deosai plateau between Baltistan and Kashmir").

Type: ♂ ad., Deosai plateau, 13,200 feet, 24.viii.1925. R. Meinertzhagen coll.

(?) † 1810. **Mirafra fischeri kawirondensis** Som. = *Mirafra fischeri fischeri* (?).
Mirafra fischeri kawirondensis van Someren, *Bull. B.O. Club*, xli, p. 125 (1921—"Kisumu, Karungu, Kendu Bay, Kibigori, also Sovoti and Entebbe").

Type: ♂, Kisumu, 9.xii.1917. Dr. van Someren coll.

The type is a specimen of the blackish variety. I am not sure if one can separate *kawirondensis* from typical *fischeri*.

(?) 1811. **Mirafra longonotensis** Som. = *Mirafra africanooides longonotensis*.

Mirafra longonotensis van Someren, *Bull. B.O. Club*, xl, p. 57 (1919—"Apparently limited to the Loita Plains and the open plateau in Naivasha and Nakuru districts").

Type: ♂ ad., Loita, 10.vii.1918. A. Blayney Percival coll.

The description as a dark form fits the seven *worn* specimens collected by Doherty (cf. *Nov. Zool.* 1922, p. 178), but the bird marked as the type, from Loita, is very much lighter, and agrees with one from Somaliland, collected by Archer. This form requires further study, also its relationship to the very reddish *alopez*!

1812. **Ammomanes deserti geyri** Hart. = *Ammomanes deserti geyri*.

Ammomanes deserti geyri Hartert, *Nov. Zool.* 1924, p. 41 (1924—Damergu).

Type: ♂, Farak, Damergu, 29.vi.1922. Angus Buchanan coll. No. 148.

1813. **Ammomanes deserti payni** Hart. = *Ammomanes deserti payni*.

Ammomanes deserti payni Hartert, *Bull. B.O. Club*, xlv, p. 36 (1924—Figuig, E. Marocco).

Type: ♂ ad., Figuig, 19.iii.1924. W. A. Payn coll.

I have now examined specimens from Aïn-Sefra, Beni-Ounif, Figuig, and Missouri on the Muluya River.

1814. **Ammomanes deserti annae** Meinertzh. = *Ammomanes deserti annae*.

Ammomanes deserti annae Meinertzhagen, *Bull. B.O. Club*, xliii, p. 147 (1923—"North Arabia from about 20 miles west of Azraq to the lava-hills 90 miles east of that place").

Type: ♂ ad., 30 miles east of Azraq in North Arabia, 27.x.1922. R. Meinertzhagen coll.

1815. **Alauda arvensis weigoldi** Hart. = *Alauda arvensis weigoldi*.

Alauda arvensis weigoldi Hartert, *Abh. & Ber. Zool. Mus. Dresden*, xv, 3, p. 20 (1922—Middle China, Yantsekjang and south to Foochow).

Type: ♂ ad., Hankow in China, 18.iii.1912. Admiral Hubert Lynes coll.

1816. **Alauda arvensis hainana** Hart. = *Alauda arvensis hainana*.

Alauda arvensis hainana Hartert, *Abh. & Ber. Zool. Mus. Dresden*, xv, 3, p. 21 (1922—Hainan).

Type: ♂ ad., Kiangchau, Hainan, 24.ii.1902. Katsumata coll.

1817. **Alauda arvensis herberti** Hart. = *Alauda arvensis herberti*.

Alauda arvensis herberti Hartert, *Bull. B.O. Club*, xliii, p. 149 (1923—Round Bangkok in Siam).

Type: ♂ ad., Bangkok, Siam, 31.iii.1915. W. J. F. Williamson coll.

1818. *Galerida cristata zion* Meinertz. = *Galerida cristata zion*.

Galerida cristata zion Meinertzhagen, *Bull. B.O. Club*, xli, p. 21 (1920—"Jerusalem, Beisan, Lake Galilee, Jenin, Damascus, Syrian Desert, Baalbek"; *Ibis*, 1921, p. 637, also Hartert, *Vög. pal. Fauna*, p. 2088).

Type: ♂ ad., Jerusalem, 20.xi.1919. R. Meinertzhagen coll.

1819. *Galerida cristata imami* Meinertz. = *Galerida cristata imami*.

Galerida cristata imami Meinertzhagen, *Bull. B.O. Club*, xliv, p. 16 (1923—"Sok-al-Khamis, Menakha, Sanaa in Yemen, El-Kubar and Gerba in the Amiri country").

Type: ♀, Sôk-al-Khamis, 8,000 feet, in Yemen, 11.viii.1913. G. W. Bury coll.

This subspecies is recognizable, though some specimens are very close to *tardinata*. The bill of *G. c. imami* is (barring exceptional individuals) distinctly larger than that of *tardinata*.

1820. *Galerida cristata halfae* Nicoll = *Galerida cristata halfae*.

Galerida cristata halfae Nicoll, *Bull. B.O. Club*, xlii, p. 7 (1921—Wadi Halfa in Egypt).

Type: Wadi Halfa, 2.ii.1921. S. S. Flower coll.

It seems, indeed, that the Crested Larks from Wadi Halfa are neither *maculata*, which lives north of it, nor *altirostris*, which lives south of it, but a more greyish form, not darker than *maculata*, but more grey. For notes on the distribution of Crested Larks in Egypt, see Meinertzhagen, *Ibis*, 1921, pp. 634–639.

G. cristata caroli is apparently not distinguishable from *brachyura* of southern Palestine.

1821. *Galerida cristata festae* Hart. = *Galerida cristata festae*.

Galerida cristata festae Hartert, *Bull. B.O. Club*, xliii, p. 12 (1922—Cyrenaica): *Nor. Zool.* 1923 p. 10!

Type: ♂ ad., Bengasi, Cyrenaica, 27.iii.1922. Hartert and Hilgert coll.

MOTACILLIDAE.

1822. *Motacilla flava iberiae* Hart. = *Motacilla flava iberiae*.

Motacilla flava iberiae Hartert, *Vög. pal. Fauna*, iii, p. 2097 (1921—"Spanien, Portugal, Balearen Südf frankreich, Nordalgerien, vielleicht auch Marokko nistend").

Type: ♂ ad., Miranda on Ebro, North Spain, 18.vi.1919. Ernst Hartert coll.

1823. *Anthus blaynei* Som. = *Anthus brachyurus blaynei*.

Anthus blaynei van Someren, *Bull. B.O. Club*, xl, p. 56 (1919—"South Ukamba north and west to Loita and Olgerei").

Type: ♂, Olgerei, 1.vii.1917. A. Blayne Pereival coll.

1824. *Anthus sokokensis* Som. = *Anthus sokokensis*.

Anthus sokokensis van Someren, *Bull. B.O. Club*, xli, p. 124 (1921—"Sokoke Forest on coast of B.E. Africa. In forest, keeping to the more open areas of undergrowth").

Type: ♂, Sokoke, 14.i.1921. Coll. by Dr. van Someren's trained natives.

1825. **Anthus leucophrys goodsoni** Meinertzh. = *Anthus leucophrys goodsoni*.

Anthus leucophrys goodsoni Meinertzhagen, *Bull. B.O. Club*, xli, p. 23 (1920—Distribution not indicated, but type from Nakuru in Kenya Colony fixed).

Type: ♀, Nakuru, 2.i.1917. Collected for Colonel Meinertzhagen by Alan Turner.

1826. **Anthus leucophrys neumanni** Meinertzh. = *Anthus leucophrys neumanni*.

Anthus leucophrys neumanni Meinertzhagen, *Bull. B.O. Club*, xli, p. 23 (1920—New name for *A. l. angolensis* Neumann 1906, which is preoccupied by *Anthus angolensis* Bocage 1870).

Type the same as that of Neumann's *angolensis*, i.e. ♂, Ambava, Angola, 13.v.1903. W. J. Ansorge coll. No. 158.

1827. **Anthus campestris griseus** Nicoll = *Anthus campestris griseus*.

Anthus campestris griseus Nicoll, *Bull. B.O. Club*, xli, p. 25 (1920—"Egypt, Turkestan, Persia").

Type: ♂, Tishkan River, Turkestan, 22.v.1900. N. Zarudny coll.

1828. **Anthus richardi lacuum** Meinertzh. = *Anthus richardi lacuum*.

Anthus richardi lacuum Meinertzhagen, *Bull. B.O. Club*, xli, p. 22 (1920—"British East Africa and Uganda").

Type: ♂, Naivasha, 9.xi.1916. R. Meinertzhagen coll. No. 87.

1829. **Anthus gouldi turneri** Meinertzh. = *Anthus gouldi turneri*.

Anthus gouldi turneri Meinertzhagen, *Bull. B.O. Club*, xli, p. 24 (1920—"Kituni in the N.W. part of Kenya Colony").

Type: ♀ ad., Kituni, 19.ii.1917. H. J. Alan Turner coll.

The description of the upperside as "uniformly dark hair-brown" is not quite correct, as dark centres to the feathers are clearly visible.

1830. **Anthus gouldi prunus** Meinertzh. = *Anthus gouldi prunus*.

Anthus gouldi prunus Meinertzhagen, *Bull. B.O. Club*, xli, p. 24 (1920—Benguella).

Type: ♂, Catatu River, Benguella, 29.ix.1904. W. J. Ansorge coll.

1831. **Anthus sordidus asbenaicus** R. = *Anthus sordidus asbenaicus*.

Anthus sordidus asbenaicus Rothschild, *Bull. B.O. Club*, xli, p. 33 (1920—Mt. Baguezan, Asben); see also *Nor. Zool.* 1921, p. 127.

Type: ♂ ad., Mt. Baguezan, Asben, Central Sahara, 5,200 feet, 25.v.1920. Angus Buchanan coll. No. 632.

1832. **Anthus sordidus decaptus** Meinertzh. = *Anthus sordidus decaptus*.

Anthus sordidus decaptus Meinertzhagen, *Bull. B.O. Club*, xli, p. 23 (1920—"East Persia and Baluchistan").

Type: ♀, Rud-i-Taman River, East Persia, 23.viii.1898 (Russian date). N. Zarudny coll.

When I described *A. sordidus captus* from Palestine in 1905 I united with it specimens from Persia and Baluchistan. Meinertzhagen has now collected an instructive series from Palestine, which shows that *captus* is a much smaller subspecies than *decaptus*.

MELIPHAGIDAE.

1833. *Prothemadera novae-seelandiae phoebe* Kemp. = *P. novae-seelandiae phoebe*.

Prothemadera novae-seelandiae phoebe Kemp, *Austral Avian Record*, i, 5, p. 124 (1912—North Island of New Zealand).

Type: ♂, Umawera, Hokianga, North Island, October 1907.

Only two specimens came to the Tring Museum, the type-specimen and one without original label, but marked "North Island, N.Z.," by Mathews. The wings measure ♂ 151 (type), and (unsexed) 142 mm. This is only a very slight difference from South Island specimens, in which the males have wings of 154–160 mm. There is no difference in colour at all, those stated by Kemp do not exist. The subspecies *phoebe* therefore requires confirmation by more material!

(*P. novae-seelandiae kwini* Kemp (l.c.) from the Auckland Islands, which is unknown to me, is perhaps a female, the shorter wing and smaller white throat-frill being characteristic of the females.)

1834. *Prothemadera novaeseelandiae kermadecensis* Math. & Ired. = *P. novae-seelandiae kermadecensis*.

Prothemadera novaeseelandiae kermadecensis Mathews & Iredale, *Austral Avian Rec.* ii, 5, p. 113 (1914—Sunday Island, Kermadec group).

Type: ♂, Sunday Island, 19.vii.1913. (Collector's name not stated.)

Specimens from the Kermadec Islands differ from *P. n. novaeseelandiae* (South Island, New Zealand) in having stronger legs and feet, especially a larger hind-toe and claw. This is not quite so obvious in the type-specimen, as in most other males, but it is remarkable in a series. The differences in colour described by the authors were due to the specimen (they had apparently only that one before them when describing it) being strongly powdered with plaster. Since it has been dusted the colour-differences have disappeared. Generally the bills are larger. We have only males in the collection. The wings are by no means longer, the wings of 154 and 155 of the type being not unusually long for *novaeseelandiae* (see above).

When describing *P. n. kermadecensis* the authors compared it with *P. n. phoebe* Kemp, of which they had only two specimens before them, and which was not represented in most collections anywhere. That, of course, made comparison of the supposed new form almost impossible to everybody else. Such action should be condemned, as the object of separating new forms is to elucidate problems, thus helping fellow-workers, and not to put unsolvable enigmas before the ornithological public.

1835. *Prothemadera novaeseelandiae chathamensis* subsp. nov.

Type: (♂ ad.) (probably Little Mangare) Chatham Islands, east of New Zealand. H. C. Palmer coll.

The form from the Chatham Islands is much larger, having longer wings and tails than New Zealand specimens. The white tufts on the foreneck are considerably larger, those of the female being as large as or larger than in the male of *P. n. novaeseelandiae*. We have eleven specimens collected by H. C.

Palmer; dates and sexes cannot now be found out, as Palmer's diary referring to the Chatham Islands was burnt. The sexes, however, differ so much in size, that we can make them out from the skins before us. The wings of the males measure 160–169, those of the females 142–150 mm.; once 135, if that specimen is from the Chatham group.

This, the most distinct of the subspecies of the *Prosthemadera*, has so far remained unnamed, though Lord Rothschild verbally mentioned its great size long ago.

1836. *Melirrhophetes belfordi joiceyi* R. = *Melidectes (Melirrhophetes) belfordi joiceyi*.

Melirrhophetes belfordi joiceyi Rothschild, *Nov. Zool.* xxviii, p. 285 (1921—Mt. Kunupi, Weyland Mts.).

Type: ♂ ad., Mt. Kunupi, 6,000 feet, November–December 1920. Pratt Bros. coll.

I agree with Stresemann that *Melirrhophetes* must either be suppressed (as he did) or can only be upheld as a subgenus of *Melidectes*. *M. rufocrissalis* somewhat connects the two supposed genera, but is it not a bit keen to treat it as a subspecies of *belfordi*? *M. b. joiceyi* is a very distinct form, being distinguished by its small size and the greenish (not grey) edges to the feathers of the back in the adult birds, while in *M. b. belfordi* only young birds have these edges greenish.

1837. *Philemon eichhorni* R. & H. = *Philemon eichhorni*.

Philemon eichhorni Rothschild & Hartert, *Bull. B.O. Club*, xlv, p. 8 (1924—New Ireland); *Nov. Zool.* 1925, p. 133.

Type: ♂ ad., S.W. New Ireland, 22.i.1924. A. F. Eichhorn coll.

1838. *Ptilotis finschi* R. & H. = *Ptilotis ixoides finschi*.

Ptilotis finschi Rothschild & Hartert, *Nov. Zool.* x, p. 448 (1903—"Mts. of British New Guinea").

Type: Mts. British New Guinea. Weiske coll. (Bought from dealer, but preparation unmistakably of Emil Weiske.)

1839. *Myzomela cineracea rooki* Hart. = *Myzomela cineracea rooki*.

Myzomela cineracea rooki Hartert, *Nov. Zool.* xxxiii, p. 142 (1926—Rook Island).

Type: ♂ ad., Rook (or Rooke) Island, west of New Britain, 24.vii.1913. A. S. Meek coll. No. 5810.

NECTARINIIDAE.

1840. *Cinnyris loveridgei* Hart. = *Cinnyris loveridgei*.

Cinnyris loveridgei Hartert, *Bull. B.O. Club*, xlii, p. 49 (1922—Uluguru Mts., Tanganyka Territory).

Type: ♂ ad., Uluguru Mts., 24.v.1921. Arthur Loveridge coll.

1841. *Cinnyris bifasciatus tsavoensis* Som. = *Cinnyris bifasciatus tsavoensis*.

Cinnyris bifasciatus tsavoensis van Someren, *Nov. Zool.* xxix, p. 196 (1922—"Teita, Sagala, Maungu, Tsavo, Upper Tana, and Simba").

Type: ♂ ad., Tsavo, 3.iv.1918. V. G. L. van Someren coll.

It is interesting that the smaller *tsavoensis* occurs together with the larger *chalconelas* Rehw. (*shephardi* Jacks.).

1842. **Cinnyris angolensis kakamegae** Som. = *Cinnyris angolensis kakamegae*.
Cinnyris angolensis kakamegae van Someren, *Bull. B.O. Club*, xli, p. 113 (1921—"North Kavirondo and Nandi, Yala River, Kaimosi, and Nandi Escarpment").

Type: ♂, Kakamegoes, 15.ii.1917. J. J. Allen Turner coll. for Col. R. Meinertzhagen, No. 1208.

1843. **Cinnyris habessinicus turkanae** Som. = *Cinnyris habessinicus turkanae*.
Cinnyris habessinicus turkanae van Someren, *Bull. B.O. Club*, xl, p. 94 (1920—"East Uganda and W. Rudolf to Suk country").

Type: ♂ ad., Kobua River, Lake Rudolf, March 1918. V. G. L. van Someren coll.

This form is "very close" but just recognizable.

† 1844. **Cinnyris leucogaster lumbo** Som. = *Cinnyris leucogaster leucogaster*.
Cinnyris leucogaster lumbo van Someren, *Bull. B.O. Club*, xli, p. 113 (1921—"Lumbo in North Mozambique").

Type: ♂ ad., Lumbo 12.vii.1918.

1845. **Cinnyris sericeus eichhorni** Hart. = *Cinnyris sericeus eichhorni*.
Cinnyris sericeus eichhorni Hartert, *Nor. Zool.* xxxiii, p. 41 (1926—Feni Island, east of New Ireland).

Type: ♂ ad., Feni Island, 10.v.1924. Albert F. Eichhorn coll.

1846. **Anthreptes longuemarei neglectus** Neum. = *Anthreptes longuemarei neglectus*.

Anthreptes longuemarei neglectus Neumann, *Orn. Monatsber.* 1922, p. 13 ("Rufu und Uhuguru-Gebirge, vielleicht Ukami, Usaromo, Usagara").

Type: ♂, Uluguru Mts., Tanganyika Territory, 19.v.1921. Arthur Loveridge coll.

There is a series of this form in the Berlin Museum.

1847. **Anthreptes yokanae** Som. = *Anthreptes yokanae*.
Anthreptes yokanae van Someren, *Bull. B.O. Club*, xli, p. 63 (1921—"Rabai Hills north of Mombasa").

Type: ♂ ad., Rabai, 10.xi.1920. V. G. L. Someren coll.

There is now in the Tring Museum quite a series from Rabai and Sokoko, collected by Dr. van Someren and his trained collectors.

1848. **Anthreptes collaris ugandae** Som. = *Anthreptes collaris ugandae*.
Anthreptes collaris ugandae van Someren, *Bull. B.O. Club*, xli, p. 113 (1921—"Uganda to Kivu and east to Mt. Elgon, south to highlands of British East Africa"); *Nor. Zool.* 1922, pp. 202, 203.

Type: ♂, Maraquet, 10.x.1918. Collected by Dr. van Someren's trained collectors.

† 1849. **Anthreptes collaris teitensis** Som. = *Anthreptes collaris clachior* Mearns.
Anthreptes collaris teitensis van Someren, *Bull. B.O. Club*, xli, p. 113 (1921—"South Ukambani to Teita and East Kilimanjaro"); *Nor. Zool.* 1922, p. 202.

Type: ♂, Teita, 15.viii.1918. Collected by Dr. van Someren's collectors.

1850. **Anthreptes tephrolaema elgonensis** Som. = *Anthreptes tephrolaema elgonensis*. *Anthreptes tephrolaema elgonensis* van Someren, *Bull. B.O. Club*, xli, p. 112 (1921—"Nandi Escarpment to Mt. Elgon and Mabira in Uganda").

Type: ♂, Kaimosi, 22.i.1917. J. Allen Turner coll. for Colonel Meinertzhagen.

† 1851. **Hedydipna platara karamojoensis** Som. = *Hedydipna platara platara*. *Hedydipna platara karamojoensis* van Someren, *Bull. B.O. Club*, xl, p. 93 (1920—"East Uganda and W. Rudolf to Suk").

Type: ♂ ad., Kamalinga, Karamojo, 23.xi.1917. Dr. van Someren coll.

1852. **Nectarinia pulchella aegra** Hart. = *Nectarinia pulchella aegra*.

Nectarinia pulchella aegra Hartert, *Nor. Zool.* xxviii, p. 122 (1921—Asben, Zinder, and Kano).

Type: ♂, Timia, Asben, 3,800 feet, 21.vi.1920. Angus Buchanan coll. No. 688.

1853. **Nectarinia pulchella lucidipectus** Hart. = *Nectarinia pulchella lucidipectus*. *Nectarinia pulchella lucidipectus* Hartert, *Nor. Zool.* xxviii, p. 123 (1921—N.E. Africa).

Type: ♂, Wad Medani, Blue Nile, 25.vii.1909. Stanley S. Flower coll. No. 856.

DICAEIDAE.

† 1854. **Dicaeum van heysti** Rob. & Kloss = *Dicaeum beccarii*.

Dicaeum beccarii Robinson & Kloss, *Journ. Fed. Malay States Mus.* viii, 2, p. 247, pl. vii, fig. 1 (1918—Korinibi, Sumatra); *Journ. Straits Branch R. As. Soc.* No. 80, 1919, p. 132.

Dicaeum van heysti Robinson & Kloss, *op. cit.* vii, p. 239 (1919—Beras tagi, Laec Goemba, Tengkeh, Upper Deli, Sumatra).

Type: ♂, Brastagi (Beras tagi), Sumatra, 19.vi.1917 (not 10.vi), A. D. van Heyst coll. No. 517.

ZOSTEROPIDAE.

1855. **Zosterops yalensis** Som. = *Zosterops virens yalensis*.

Zosterops yalensis van Someren, *Nor. Zool.* xxix, p. 191 (1922—"Yala Munices, Nyarondo, Kaimosi").

Type: ♂ ad., Kaimosi, 22.i.1917. H. J. Allen Turner coll. for Colonel Meinertzhagen.

Both *Z. v. yalensis* and *elgonensis* are paler on the upperside than *Z. v. kikuyensis*.

1856. **Zosterops elgonensis** Som. = *Zosterops virens elgonensis*.

Zosterops elgonensis van Someren, *Nor. Zool.* xxix, p. 191 (1922—"Limited to Mt. Elgon, particularly on the Bukedi side, and in the Bumasisa forest, up to 10,000 feet").

Type: ♂ ad., Bukedi, Mt. Elgon, 13.i.1916. Collected by Dr. van Someren's admirably trained collectors.

This subspecies is very closely allied.

1857. **Zosterops virens somereni** subsp. nov.

Nearest to *Z. v. kikuyensis* from the Kikuyu Mountains (escarpment), the Aberdare range, Kyambu, and Nairobi, but the bill is larger, throat, forehead, and

abdomen are of a brighter yellow, while there is a darker greenish zone across the chest, the white ring of feathers round the eye is still wider, especially above the eye. Wing 58-63 mm.

Type : ♂ ad., Mt. Kenya, above Chuka, 15.i.1921. Noël van Someren coll.

Named in remembrance of Noël van Someren, who was killed some months later by a buffalo. He sent us twelve skins from Mt. Kenya, and we also have a pair collected there by J. Makinder.

† 1858. *Zosterops massaica* Som. = *Zosterops senegalensis fricki*.

Zosterops senegalensis fricki Mearns, *Smithsonian Miscell. Colls.*, vol. lxi, no. 20, p. 6 (1913—"Upper Thika and Tana rivers, north to Endoto Mountain, British East Africa").

Zosterops massaica van Someren, *Nor. Zool.* xxix, p. 192 (1922—"Sagala, Teita, Tsavo, Loita").

Type : ♂, Sagala, 8.viii.1918. L. G. van Someren coll.

1859. *Zosterops eichhorni* Hart. = *Zosterops (longirostris ?) eichhorni*.

Zosterops eichhorni Hartert, *Nor. Zool.* 1926, vol. xxxiii, p. 48 (Nissan Island, E. of S. New Ireland).

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

Z. eichhorni, *aiguani*, and *pallidipes* are probably subspecies of *longirostris*, but a review of the whole genus is required, before this can be finally settled.

1860. *Zosterops ceylonensis* Holdsw. = *Zosterops ceylonensis*.

Zosterops ceylonensis Holdsworth, *Proc. Zool. Soc. London*, 1872, p. 459, pl. xx (Ceylon).

Type : ♂, N. Eliya, Ceylon, 28.i.1871. E. Holdsworth coll.

† 1861. *Zosterops palpebrosa elwesi* Baker = *Zosterops palpebrosa cacharensis* or *palpebrosa*.

Zosterops palpebrosa elwesi Baker, *Ibis*, 1922, p. 145 (Sikkim).

Type : ♂, Sikkim, 1876, no date. Ex Mus. H. J. Elwes.

Z. p. elwesi is not separable from the Cachar form, called by Baker *cacharensis*. Whether the latter name should be used for this form, or whether this is the typical *palpebrosa*, is difficult to decide. An examination of the type specimen, now mounted over a hundred years, would not help us either !

(?) 1862. *Zosterops palpebrosa cacharensis* Baker = *Zosterops palpebrosa cacharensis* or *palpebrosa*.

Zosterops palpebrosa cacharensis Baker, *Ibis*, 1922, p. 144 (Cachar).

Type : ♂, Gunjong, N. Cachar Hills, 7.xii.1895. E. C. Stuart Baker coll.

According to Ticehurst, the Bengal birds are the same as those from Cachar. If Temminck's plate of *palpebrosa* represents the dark form, this would be the typical *palpebrosa*, but the copy in the Tring Museum seems to us to represent the paler form, and the expression "jaune jonquille" means a bright but not very bright yellow. Though it is probable that Dussumier's birds came from the Bengal plains, this is not absolutely certain.

1863. *Madanga ruficollis* R. & H. = *Madanga ruficollis*.

Madanga ruficollis Rothschild & Hartert, *Bull. B.O. Club*, xliii, p. 118 (1923—Buru); also *Nor. Zool.* 1924, p. 111.

Type : ♂, Wa Fehat in the Fogha or Madang range in N.W. Buru, 2,700 feet, 14.iv.1922. Pratt Bros. coll.

(The systematic position of this bird among the *Zosteropidae* requires confirmation.)

PARIDAE.

1864. **Anthoscopus rothschildi** Neum. = *Anthoscopus rothschildi*.

Anthoscopus rothschildi Neumann, *Journ. f. Orn.* 1907, p. 597 (Simba, British East Africa); *Nov. Zool.* 1922, p. 203.

Type : ♀, Simba, 18.i.1906. F. C. Colburn coll.

1865. **Anthoscopus rocatti taruensis** Som. = *Anthoscopus rocatti taruensis*.

Anthoscopus rocatti taruensis van Someren, *Bull. B.O. Club*, xli, p. 112 (1921—"Coast of British East Africa to Taru desert").

Type : ♀, Samburu, 25.vii.1918. Collected by Dr. van Someren's admirably trained collectors.

1866. **Parus niger purpurascens** Som. = *Parus niger purpurascens*.

Parus niger purpurascens van Someren, *Bull. B.O. Club*, xli, p. 112 (1921—"Entebbe, Bukedi, Mabendi, Soronko, Elgon").

Type : ♂ ad., Entebbe, February 1919. Collected by Dr. van Someren's collectors.

To me there seems to be nothing in the supposed more purplish colour, but this form is larger than *P. n. leucomelas* and *lacuum*.

† 1867. **Parus major longipennis** R. = *Parus major tibetanus*.

Parus major longipennis Rothschild, *Bull. B.O. Club*, xliii, p. 11 (1922—Lichiang Range, N. Yunnan). *Parus major tibetanus* Hartert, *Vög. pal. Fauna*, p. 346 (Tsangpo valley in E. Tibet).

Type : Lichiang range in thickets and forests, 9,000–12,000 feet, 10.xii.1921. G. Forrest coll. No. 921.

1868. **Parus major lynesi** Hart. = *Parus major lynesi*.

Parus major lynesi Hartert, *Bull. Soc. Sciences Natur. Maroc*, v, No. 6, p. 287 (Publ. July 1926—Middle and Great Atlas).

Type : ♂ ad., Oak forest above Azru, Middle Atlas, 22.v.1924. Ernst Hartert coll.

1869. **Parus monticolus lepcharum** Meinertzh. = *Parus monticolus lepcharum*.

Parus monticolus lepcharum Meinertzhagen, *Bull. B.O. Club*, xlvi, p. 97 (1926—"Common throughout Sikkim and Eastern Nepal, between 4,000 and 8,800 feet").

Type : ♂ ad., Gangtok, Sikkim, 5,600 feet, 15.xii.1925. R. Meinertzhagen coll.

† (?) 1870. **Parus spilonotus evanescens** R. = ? *Parus spilonotus subviridis*.

Parus spilonotus evanescens Rothschild, *Nov. Zool.* xxxiii, p. 313 (1926—Shweli Valley and Shweli-Salwin Divide).

Type : ♂ in forest Shweli-Salwin divide, 10,000 feet, August 1925. George Forrest coll. No. 6137.

Lord Rothschild records both *P. spilonotus subviridis* Tick. and *P. s. evanescens* from the same places and time of the year, in fact he has received both

forms also from the Shweli Valley. These two supposed subspecies cannot occur together, and it seems to me that they are only variations of one and the same form. It is, however, possible that they differ in other ways from topotypical *subviridis*, of which there are none in the Tring Museum.

1871. **Parus caeruleus cyrenaicae** Hart. = *Parus caeruleus cyrenaicae*.

Parus caeruleus cyrenaicae Hartert, *Bull. B.O. Club*, xlii, p. 140 (1922—"Woods of the mountains and plateau of north-western Cyrenaica, or Barka"); *Nor. Zool.* 1923, p. 15.

Type: ♂ ad., juniper woods near Merg, Cyrenaica, 4.v.1922. Hartert & Hilgert coll.

PARADOXORNITHIDAE.

1872. **Scaeorhynchus gularis transfluvialis** Hart. = *Psittiparus gularis transfluvialis*.

Scaeorhynchus gularis transfluvialis Hartert, *Nor. Zool.* vii, p. 548 (1900—Khasia Hills); Baker, *B. India*, i, p. 118, 1922.

Type: ♂, Guilang, North Cachar, 21.iv.1895. E. C. Stuart Baker coll.

1873. **Psittiparus gularis hainanus** R. = *Psittiparus gularis hainanus*.

Psittiparus gularis hainanus Rothschild, *Bull. B.O. Club*, xiv, p. 7 (1903—Mt. Wuchi, Hainan); *Nor. Zool.* 1900, p. 241.

Type: ♂, Mt. Wuehi, March 1903. Katsumata coll.

1874. **Scaeorhynchus ruficeps bakeri** Hart. = *Psittiparus ruficeps bakeri*.

Scaeorhynchus ruficeps bakeri Hartert, *Nor. Zool.* vii, p. 548 (1900—"Cachar, Assam, to Karennee and Tenasserim"); Baker, *B. India*, i, p. 117, 1922.

Type: ♂, Hungrum, North Cachar, 3.v.1895. E. C. Stuart Baker coll.

LANIIDAE.

† 1875. **Chlorophoneus elgeyuensis** Som. = variety (mutation) of *Chl. nigrifrons nigrifrons*.

Chlorophoneus elgeyuensis van Someren, *Bull. B.O. Club*, xl, p. 23; *Nor. Zool.* 1922, p. 115 (1919—"Known only from the Elgeyu-Sheringani Hills and Kenya, 8,000-10,000 feet").

Type: ♀, Marakwet, Elgeyu, 5.x.1918. Dr. van Someren coll.

When Dr. van Someren described this most interesting mutation, he had very few specimens only available. We have now in the Tring Museum 42 skins: 21 from Mt. Kenya, collected by the late Noël van Someren, 14 from Kyambu, collected by V. G. L. van Someren and J. P. Cook, 4 from Kilimanjaro, coll. by Noël van Someren, 1 female from Marakwet, 1 female from Morshi, Angus Buchanan coll., 1 male from Fort Smith, Kikuyu, coll. by W. J. Ansonge. While there is some variation in the series from Kyambu, the breast varying from yellow with only an orange tinge, to orange yellow, there are among the Kenya specimens some with the breast and foreneck flame-scarlet or orange scarlet, and intergradations from this to bright yellow with hardly an orange tinge. It is to be expected that the flame-scarlet breasted males also occur in the Kyambu and Kilimanjaro districts, if sufficiently large series were collected.

1876. **Chlorophoneus nigrifrons conceptus** Hart. = *Chlorophoneus nigrifrons conceptus*.

Chlorophoneus nigrifrons conceptus Hartert, *Bull. B.O. Club*, xliii, p. 79 (1923—"Forest west of Lake Tanganyika").

Type: ♂ ad., 120 km. west of Lake Tanganyika, 2,300 m., 22.vii.1908. Rudolf Grauer coll.

Differs from *Chl. nigrifrons nigrifrons* in having the tips of the inner primaries and secondaries yellow, and the tips to the rectrices wider and also—though small—visible on the central pair. We have now two males and one female, all alike, except that the female has no black on the forehead.

(In *Nov. Zool.*, 1922, p. 451, I said that I was convinced that *Chlorophoneus graueri* (Hart.) was the same as *reichenowi*, but this can hardly be the case, as the white line over the forehead and the superciliary line are so much narrower than in Kamerun specimens, which must be *reichenowi*, whether that is separable from *melamprosopus* or not.)

† 1877. **Laniarius ruficeps cooki** Som. = *Laniarius ruficeps rufinuchalis*.

Laniarius ruficeps cooki van Someren, *Bull. B.O. Club*, xl, p. 23 (1919—"Taru desert country and S. Ukambani"); *Nov. Zool.* 1922, p. 118.

Type: ♂, Tsavo, 18.iii.1918. V. G. L. van Someren coll.

L. ruficeps kismayensis Erl., *Orn. Monatsber.*, 1901, p. 182, is not separable from *L. r. rufinuchalis* Sharpe. Cf. Zedlitz, *Journ. f. Orn.*, 1915, p. 60. *L. r. rufinuchalis* is the southern form, ranging from Gardulla (N.E. of Lake Stefanie) to Gurra-Land, Kismayu, and the Tsavo district, Taru and Maungu, etc., in East Africa. *L. r. ruficeps* inhabits N.E. Somaliland (the Haud).

The males have a much longer wing than the females, and more black on the forehead, but *L. r. rufinuchalis* has more black on the forehead and consequently less red on the crown in both sexes, which is easily seen if series of both forms are compared.

1878. **Harpolestes senegalus mozambicus** Som. = *Tchagra*¹ *senegalus mozambicus*.

Harpolestes senegalus mozambicus van Someren, *Bull. B.O. Club*, xli, p. 103 (1921—"Lumbo, Northern Mozambique"); *Nov. Zool.* 1922, p. 112.

Type: ♂ Lumbo, 10.vii.1918. Collected by Dr. van Someren's experienced collectors.

1879. **Harpolestes australis littoralis** Som. = *Tchagra australis littoralis*.

Harpolestes australis littoralis van Someren, *Bull. B.O. Club*, xli, p. 102 (1921—"Coastal scrub region of British and German East Africa: Changanwe, Mombasa"); *Nov. Zool.* 1922, p. 111

Type: ♀ ad., Changanwe, 18.vii.1918. Collected by van Someren's collectors.

? 1880. **Harpolestes senegalus confusus** Som. = *Tchagra senegalus confusus* (?).

Harpolestes senegalus confusus van Someren, *Nov. Zool.* xxix, p. 113 (1922—Zululand).

Type: ♂, Umfalosi, Zululand, 2.viii.1904. C. B. Grant coll.

¹ The oldest correct name for this genus seems after all to be *Tchagra*, as adopted by Sclater in vol. v. of Shelley's unfinished *B. of Africa*!

1881. **Prionops plumatus haussarum** Hart. = *Prionops plumatus haussarum*.
Prionops plumatus haussarum Hartert, *Nov. Zool.* xxviii, p. 126 (1921—Kano); *Nov. Zool.* xxxi,
 p. 37 (1924).

Type: ♂ ad., Farniso near Kano, 1,700 feet, 15.xii.1919. Angus Buchanan coll. No. 44.

1882. **Sigmodus scopifrons keniensis** Som. = *Sigmodus scopifrons keniensis*.
Sigmodus scopifrons keniensis van Someren, *Bull. B.O. Club*, xliii, p. 80 (1923—"The country east and north of Kenia to Marsabit, and west to the Karoli Mts., going east to the upper waters of the Juba River").

Type: ♀ ad., Meru, N.E. Mt. Kenia, 3.i.1921. Noël van Someren coll.

The description of this form is not very enlightening, as Dr. van Someren compared it with the coastal form ranging "from the Tana river south to Vanga," which he took for the typical *scopifrons*. The latter, however, is *S. scopifrons kirki*, Selater, *Bull. B.O. Club*, xliv, p. 92 (1924); neither *kirki* nor *keniensis* are identical with Peters' *S. scopifrons scopifrons* from Mozambique, which is much paler, like *kirki*, but lacks the pale grey patch on the pileum of the latter.

1883. **Pinarolestes megarhynchus superfluus** R. & H. = *Pinarolestes megarh. superfluus*.

Pinarolestes megarhynchus superfluus Rothschild & Hartert, *Nov. Zool.* xix, p. 205 (1912—Kumusi River).

Type: ♂ ad., Kumusi River, north side of Owen Stanley Mts., British New Guinea, 17.v.1907. A. S. Meek coll. No. 2962.

1884. **Pachycephala pectoralis sexuaria** R. & H. = *Pachycephala pectoralis sexuaria*.

Pachycephala pectoralis sexuaria Rothschild & Hartert, *Bull. B.O. Club*, xliv, p. 50 (1924—St. Matthias Island); *Nov. Zool.* xxxi, p. 274 (1924).

Type: ♀, St. Matthias Island, 9.vi.1923. Albert F. Eichhorn coll. No. 8527.

MUSCICAPIDAE.

(Including "Sylviidae," "Timaliidae," "Turdidae"; cf. Vög. pal, Fauna, i, p. 469.)

1885. **Prinia mistacea immutabilis** Som. = *Prinia mistacca immutabilis*.

Prinia mistacca immutabilis van Someren, *Bull. B.O. Club*, xl, p. 93 (1920—"East Africa from Ukambani to Uganda, not including the S. Ankole river district"); *Nov. Zool.* 1922, p. 218!

Type: ♂ ad., Nakuru plains, 15.v.1918. Dr. van Someren coll.

1886. **Prinia gracilis irakensis** Meinertzh. = *Prinia gracilis irakensis*.

Prinia gracilis irakensis Meinertzhagen, *Bull. B.O. Club*, xliii, p. 147 (1923—Mesopotamia).

Type: ♀, Baghdad, 9.i.1923. Colonel R. Meinertzhagen coll.

1887. **Prinia gracilis stevensi** Hart. = *Prinia gracilis stevensi*.

Prinia gracilis stevensi Hartert, *Bull. B.O. Club*, xliii, p. 132 (1923—"Ganges and Brahmaputra regions"); Baker, *B. India*, ii, p. 527.

Type: ♂, Hessamara, North Lakhimpur, Upper Assam, 28.xii.1905. H. Stevens coll. No. 345.

†(?) 1888. *Sylvietta isabellina macrorhyncha* Som. = *Sylvietta isabellina gackwari* (?). *Sylvietta isabellina macrorhyncha* van Someren, *Bull. B.O. Club*, xl, p. 92 (1920—"E. Kilimanjaro thorn-bush country to South Ukambani"); *Nor. Zool.* 1922, p. 226.

Type: ♂, Tsavo, 30.iii.1918. Dr. van Someren coll.

I cannot see that this supposed subspecies differs from a series of birds collected by Sir Geoffrey Archer at Hahi, 3,500 feet, Hargeisa, and Burao, 3,000 feet, in Somaliland, which I think must be *gackwari*, if that is different from *isabellina*.

1889. *Eremomela badiceps turneri* Som. = *Eremomela badiceps turneri*.

Eremomela badiceps turneri van Someren, *Bull. O.B. Club*, xl, p. 92 (1920—"North Kavirondo and South Elgon"); *Nor. Zool.* 1922, p. 224.

Type: ♂, Yala River, 7.xii.1915. H. J. Turner coll.

1890. *Eremomela elegans elgonensis* Som. = *Eremomela elegans elgonensis*.

Eremomela elegans elgonensis van Someren, *Bull. B.O. Club*, xl, p. 92 (1920—"Elgon south to Nandi"); *Nor. Zool.* 1922, p. 223.

Type: ♂ ad., Kibingei River, S. Elgon, 21.iv.1917. Dr. van Someren coll.

1891. *Dryodromus rufifrons turkanae* Som. = *Dryodromus rufifrons turkanae*.

Dryodromus rufifrons turkanae van Someren, *Bull. B.O. Club*, xl, p. 93 (1920—"East Uganda to Lake Rudolf").

Type: ♀ ad., Meuressi, Turkwell River, January 1918. Dr. van Someren coll.

This form seems to be distinguishable from all others, but requires confirmation with a series!

(We have a single specimen from Suakin which seems to differ from all others, but nearest to *D. r. smithi* Sharpe. It requires more specimens to name this form!)

1892. *Eremomela flaviventris tardinata* Hart. = *Eremomela flaviventris tardinata*.

Eremomela flaviventris tardinata Hartert, *Bull. B.O. Club*, xliii, p. 149 (1923—"Sagayo, Mwanza; Tanganyika Territory").

Type: ♀, Sagayo, Mwanza, 2.xi.1922. Arthur Loveridge coll.

This specimen is much darker on the upperside and sides of body, and smaller than *E. f. eraufordi*, of which we have only one skin from Loita, collected by A. Blayney Percival. I doubt that these differences are merely individual, and rather think that *tardinata* is a good subspecies, but it requires further confirmation.

1893. *Eremomela flaviventris saharae* Stoncham = *Eremomela flaviventris saharae*.

Eremomela flaviventris saharae Stoncham, *Bull. B.O. Club*, xlv, p. 77 (1925—"Sahara desert" (sic!)).

Type: Zinder, between Air and Hausaland, 4.ii.1920. Angus Buchanan coll. No. 311.

The eleven skins mentioned by Stoncham are from Air, Damergu, and Zinder. I have called them *alexanderi*, which is hardly separable, but admit that they really are still a bit paler.

1894. **Phylloscopus trivirgatus matthiae** R. & H. = *Phylloscopus trivirgatus matthiae*.

Phylloscopus trivirgatus matthiae Rothschild & Hartert, *Bull. B.O. Club*, xlv, p. 52 (1924—St. Matthias Island); *Nor. Zool.* xxxi, 1924, p. 272.

Type: ♂ ad., St. Matthias Island, north of New Hanover, 15.vi.1923. A. F. Eichhorn coll. No. 8557.

† 1895. **Argya aylmeri loveridgei** Hart. = *Crateropus (Argya) aylmeri keniana*.

Argya keniana Jackson, *Bull. B.O. Club*, xxvii, p. 7 (1910—"Emberre, Kenya district").
Argya aylmeri loveridgei Hartert, *Bull. B.O. Club*, xliii, p. 118 (1923—"Southern part of Kenya Colony and Kilimanjaro district: Tsavo, Campi-ya-bibi, Taveta, Kitui, Moschi").

Type: ♂ ad., Campi-ya-bibi, 27.vi.1918. V. G. L. van Someren coll.

1896. **Crateropus melanops clamosus** Som. = *Crateropus melanops clamosus*.

Crateropus melanops clamosus van Someren, *Bull. B.O. Club*, xl, p. 95 (1920—"Highlands of British East Africa"); *Nor. Zool.* xxix, p. 234 (1922—"Rift valley from Nakuru south to Naivasha and the Kikuyu Mts.").

Type: ♂ ad., Naivasha, 16.ii.1919. Dr. V. G. L. van Someren coll.

1897. **Acrocephalus stentoreus lentecaptus** Hart. = *Acrocephalus stentoreus lentecaptus*.

Acrocephalus stentoreus lentecaptus Hartert, *Treubia*, vi, p. 21 (1925—Lombok).

Type: ♂, Ampernan, North Lombok, June 1896. Alfred Everett coll.

1898. **Acrocephalus stentoreus sumbae** Hart. = *Acrocephalus stentoreus sumbae*.

Acrocephalus stentoreus sumbae Hartert, *Treubia*, vi, p. 21 (1925—Sumba).

Type: ♀, near Waingapo, Sumba, February 1896. William Doherty coll.

1899. **Acanthopneuste trochiloides ogilvie-granti** La Touche = *Phylloscopus trochiloides ogilvie-granti*.

Acanthopneuste trochiloides ogilvie-granti La Touche, *Bull. B.O. Club*, xlii, p. 55 (1922—Kuatun, N.W. Fohkien).

Type: ♂ ad., Kuatun, Fohkien, 11.iv.1897. J. D. La Touche coll.

1900. **Neomixis flavoviridis** Hart. = *Hartertula flavoviridis*.

Neomixis flavoviridis Hartert, *Bull. B.O. Club*, xlv, p. 35 (1924—"Analamazastra, Madagascar").

Type: "♂," Analamazastra, November 1922. Bought from Rosenberg, collected by a French collector.

† 1901. **Acrocephalus albоторquatus** Hartl. = *Acrocephalus baeticatus* aberr.

Acrocephalus albоторquatus Hartlaub, *Journ. f. Orn.*, 1880, p. 212 (Lado).

Type: ♂, Lado, 28.vii.1879. Emin Pasha coll. No. 401.

The white band round the back of the head is obviously aberrant albinism, and not a specific character! Hartlaub had in fact originally put the name *baeticatus* on the label, but when describing the supposed species gave a beautiful Latin description without referring to *baeticatus*.

1902. **Cisticola terrestris mauensis** Som. = *Cisticola ayresii mauensis*.¹

Cisticola terrestris mauensis van Someren, *Nor. Zool.* xxix, p. 207 (1922—"High belt of the Mau and Elgeyo, and again on Kenia and Aberdare Mts.").

Type: ♂, Mau, 18.i.1917. Dr. van Someren coll.

1903. **Cisticola terrestris nakuruensis** Som. = *C. brunnescens nakuruensis*.

Cisticola terrestris nakuruensis van Someren, *Nor. Zool.* xxix, p. 207 (1922—"Escarpment, Naivasha, Nakuru, and South Kavirondo").

Type: ♂, Nakuru plains, 16.v.1918. Dr. van Someren coll.

1904. **Cisticola tinniens oreophila** Som. = *Cisticola tinniens oreophila*.

Cisticola tinniens oreophila van Someren, *Nor. Zool.* xxix, p. 214 (1922—"Mt. Kenia, along the Aberdare Mountains to the Mau and Elgeyo Escarpments, and Elgon").

Type: ♂, Mt. Kenia, 7,000 feet, 12.ii.1919. Dr. van Someren coll.

† 1905. **Cisticola carruthersi kavirondensis** Som. = *C. carruthersi carruthersi*.

Cisticola carruthersi kavirondensis van Someren, *Nor. Zool.* xxix, p. 214 (1922—"East shore of Victoria Nyanza at the Kavirondo Gulf").

Type: ♂, Kisumu Swamp, 2.vii.1912. Dr. van Someren coll.

This bird, Admiral Lynes tells me, inhabits the Papyrus swamps of Uganda.

1906. **Bowdleria punctata vealeae** Kemp = *Bowdleria punctata vealeae*.

Bowdleria punctata vealeae Kemp, *Austral Avian Rec.* i, p. 124 (1912—North Island of New Zealand).

Type: Not sexed adult, Umawera, Hokianga, North Island, August 1907. Robin Kemp coll.

The tail of this form is more disintegrated than in the South Island *B. punctata punctata*.

1907. **Saxicola torquata promiscua** Hart. = *Saxicola torquata promiscua*.

Saxicola torquata promiscua Hartert, *Bull. B.O. Club*, xlii, p. 51 (1924—"Uluguru Mts. to Lake Nyassa").

Type: ♂ ad., Uluguru Mts., Tanganyika Territory, 3.v.1921. Arthur Loveridge coll. No. 16.

1908. **Cercomela turkana** Som. = *Cercomela fuscicaudata turkana*.

Cercomela turkana van Someren, *Bull. B.O. Club*, xl, p. 91 (1920—"Turkana country, west of Lake Rudolf"); cf. *Nor. Zool.* 1922, p. 243.

Type: ♂, in very worn plumage, "Kobua River, Rudolph." February 1918. Ex coll. van Someren.

We have a series collected by the late Noël van Someren on Mt. Kenya and on the banks of the Uaso-Nyiro, which seem to be darker, but being all in worn plumage, and having only the type from the Turkana country, it is not safe to say whether they actually differ from *C. f. turkana*.

¹ I am obliged to Admiral Hubert Lynes for kindly giving me his judgment and nomenclature of the *Cisticolae*, on which I absolutely rely at present.

1909. **Cercomela melanura airensis** Hart. = *Cercomela melanura airensis*.

Cercomela melanura airensis Hartert, *Nor. Zool.* xxviii, p. 114 (1921—Mountains of Air); *Nor. Zool.* xxxi, p. 30, 1924.

Type: ♂ ad., Mt. Baguezan, Asben (Air), 5,200 feet, 14.v.1920. Angus Buchanan coll. No. 594.

1910. **Myrmecocichla buchanani** R. = *Myrmecocichla aethiops buchanani*.

Myrmecocichla buchanani Rothschild, *Bull. B.O. Club*, p. 33 (1920—"Damergu and Zinder south to Kano"); *Nor. Zool.* xxviii, 1921, p. 115; xxxi, 1924, p. 31.

Type: ♂ ad., Takukut, Damergu, 1,550 feet, 13.iii.1920. Angus Buchanan coll. No. 441.

1911. **Oenanthe moesta brooksbanki** Meinertzh. = *Oenanthe moesta brooksbanki*.

Oenanthe moesta brooksbanki Meinertzhagen, *Bull. B.O. Club*, xliii, p. 147 (1923—El Jid, Northern Arabian desert); *Ibis*, 1924, p. 616.

Type: ♂, El Jid, east of Rutbah Wells, N. Arabia, "within political Iraq," 30.x.1922. R. Meinertzhagen coll. Presented by the collector.

This form requires more confirmation! The specimens are in fresh plumage, and the rump is very pale, and, apart from worn breeding specimens, we have a Tunisian example with equally pale rump. We also have a male shot on the road from Biskra to Tolga 16.iii.1909, with the bill exactly as long as that of the type, and the wing is not longer than in a number of Algerian males. A male from "El Buhea, 28.iii.1910"—probably in Eastern Palestine or Transjordan, received from Aharoni, would belong to this form, also a young male from Rheme, Palestine.

[Spring specimens have a browner, less greyish tinge on the dark portions of the plumage.—R.]

1912. **Callene sokokensis** Som. = *Vibrissosylva sokokensis*.

Callene sokokensis van Someren, *Bull. B.O. Club*, xli, p. 125 (1921—"Sokoke Forest, coast of B. E. A.").

Type: ♀, Sokoke Forest, 21.i.1921. Collected by Dr. van Someren's collectors.

I follow W. L. Sclater in placing this species into the genus *Vibrissosylva*.

1913. **Enicurus maculatus omissus** R. = *Enicurus maculatus omissus*.

Enicurus maculatus omissus Rothschild, *Nor. Zool.* xxviii, p. 26 (1921—Fohkien, East China).

Type: Fohkien. Tang Wangwang coll.

1914. **Turdus milanjensis uluguru** Hart. = *Turdus olivaceus uluguru*.

Turdus milanjensis uluguru Hartert, *Bull. B.O. Club*, xlv, p. 6 (1923—Bagito, Uluguru Mts., Tanganyika Territory).

Type: ♂ ad., Bagito, Uluguru Mts., 4.v.1922. Arthur Loveridge coll.

I follow W. L. Sclater in regarding this subspecies as a form of *T. olivaceus*—together with *milanjensis*, *nyikae*.

1915. **Turdus melanarius heinrothi** R. & H. = *Turdus melanarius heinrothi*.

Turdus melanarius heinrothi Rothschild & Hartert, *Bull. B.O. Club*, xlv, p. 53 (1924—St. Matthias Island); *Nor. Zool.* 1924, p. 273.

Type: ♂, St. Matthias Island, 9.vii.1923. A. F. Eiehorn coll. No. 8647.
Still the only known specimen of this subspecies.

1916. **Turdus talasea** R. & H. = *Turdus talasea*.

Turdus talasea Rothschild & Hartert, *Bull. B.O. Club*, xlvi, p. 53 (1926—Talasea, New Britain); *Nor. Zool.* 1926, p. 141.

Type: ♀, Talasea, 12.ii.1925. A. F. Eiehorn coll. No. 9920.
Also still the only known specimen.

1917. **Turdus dauma eichhorni** R. & H. = *Turdus dauma eichhorni*.

Turdus dauma eichhorni Rothschild & Hartert, *Bull. B.O. Club*, xlv, p. 52 (1924—St. Matthias Island); *Nor. Zool.* 1924, p. 273.

Type: ♂ ad., St. Matthias Island, 31.v.1923. A. F. Eiehorn coll. No. 8480.

1918. **Turdus dauma choiseuli** Hart. = *Turdus dauma choiseuli*.

Turdus dauma choiseuli Hartert, *Nor. Zool.* 1924, p. 273 (Choiseul Island, northern Solomon Islands).

Type: ♀, Choiseul, 13.i.1904.

1919. **Turdus joiceyi** R. & H. = *Turdus dumasi joiceyi*.

Turdus joiceyi Rothschild & Hartert, *Bull. B.O. Club*, xli, p. 74 (1921—Ceram).

Type: Adult, Mts. of Ceram. Collected by Pratt brothers.

I have no doubt whatever that *Turdus joiceyi* must be treated as a subspecies of *T. dumasi*, though the upperside is much darker, the tail brownish black instead of chestnut-brown, the legs (in skin) dark brown, and there is only one row of white spots on the upper wing-coverts. In shape, size, and style of coloration the two forms, however, agree entirely.

1920. **Yuhina nigrimentum intermedia** R. = *Yuhina nigrimentum intermedia*.

Yuhina nigrimentum intermedia Rothschild, *Bull. B.O. Club*, xliii, p. 11 (1922—Mekong valley and Mekong-Salwin Divide).

Type: ♂, Mekong-Salwin Divide, lat. 28° 10' N., 10,000–11,000 feet, 27.vii.1921. G. Forrest coll. No. 574.

This subspecies is very close to *Y. n. nigrimentum* from Sikkim; its upperside is not greyer, but darker, more olivaceous.

1921. **Proparus striaticollis yunnanensis** R. = *Fulvetta striaticollis yunnanensis*.

Proparus striaticollis yunnanensis Rothschild, *Bull. B.O. Club*, xliii, p. 11 (1922—Mekong-Salwin Divide, N.W. Yunnan).

Type: ♂, Mekong-Salwin Divide, lat. 28° 55' N., 26.viii.1921, in mixed forest, 10,000 feet. G. Forrest coll.

1922. **Fulvetta chrysotis forresti** R. = *Fulvetta chrysotis forresti*.

Fulvetta chrysotis forresti Rothschild, *Bull. B.O. Club*, xlv, p. 64 (1926—Shweli-Salwin Divide); *Nor. Zool.* 1926, p. 269.

Type: Shweli-Salwin Divide, Yuman, December 1919. George Forrest coll. Seven specimens were sent in all, not seventeen, as stated in *Nov. Zool.* 1926, p. 269.

1923. **Siva strigula omissa** R. = *Siva strigula omissa*.

Siva strigula omissa Rothschild, *Nor. Zool.* xxviii, p. 40 (1921—Perak).

Type: ♀, Gunong Kerbau, Perak, 5,000 feet, 18.iii.1913. Collected by Herbert C. Robinson's trained natives.

In the *Journ. Fed. Malay States Museums*, xiii, 4, p. 216 (1927) Robinson says that *S. s. omissa* R. is indistinguishable from *S. s. malayana* Hart. He points out only that the coloration of the yellow underside fades very much and that therefore the colour of the under surface cannot be made a distinguishing character of a subspecies; he might have added that also the colour of the upperside changes from yellowish brown to grey. Therefore the colour differences described by Lord Rothschild do not really serve to distinguish his *omissa*, but the latter is smaller than *malayana* and has a smaller bill. Wings of our seven *malayana* 67-69, of our two *omissa* about 63-65 mm. *S. s. malayana* is much nearer to *S. s. yunnanensis* in size, but the yellow tips on the lateral rectrices are less wide in *malayana*.

S. s. yunnanensis is very near to *castaneicauda* from the Chin Hills.

1924. **Lioptila robinsoni** R. = *Lioptila desgodinsi robinsoni*.

Lioptila robinsoni Rothschild, *Nor. Zool.* xxviii, p. 38 (1921—South Annam).

Type: ♂, Dalat, South Annam, 5,000 feet, 4.iv.1918. C. Boden Kloss coll.

1925. **Lioptilus stierlingi uluguru** Hart. = *Lioptilus stierlingi uluguru*.

Lioptilus stierlingi uluguru Hartert, *Bull. B.O. Club*, xlii, p. 50 (1921—Uluguru Mts., Tanganyika Territory).

Type: ♀ ad., Uluguru Mts., 3.vi.1921. Arthur Loveridge coll. No. 7284.

1926. **Lioptilus abyssinicus ansorgei** R. = *Lioptilus abyssinicus ansorgei*.

Lioptilus abyssinicus ansorgei Rothschild, *Bull. B.O. Club*, xxxviii, p. 78 (1918—"Mucuo, Cuvali river, Benguela").

Type: ♀, Mucuo, Cuvali River, 14.viii-1904. J. Ansorge coll.

1927. **Crateropus fulvus buchanani** Hart. = *Turdoides (Argya) fulvus buchanani*.

Crateropus fulvus buchanani Hartert, *Nor. Zool.* xxviii, p. 115 (1921—Air).

Type: ♂ ad., Mt. Bagnezan, Air (Asben), 4.vi.1920. Angus Buchanan coll. No. 675.

† 1928. **Crateropus plebejus anomalus** Hart. = *Turdoides plebejus gularis*.

Crateropus plebejus anomalus Hartert, *Nor. Zool.* xxviii, p. 116 (1921—near Kano); *Nor. Zool.* xxxi, 1924, p. 32.

Crateropus plebejus gularis Reichenow, *Orn. Monatsber.* 1910, p. 7 (Mba, southern Adamana).

Type: ♂ ad., Farniso near Kano, 27.xii.1919. Angus Buchanan coll. No. 100.

Originally described from one specimen, afterwards, in 1924, admitted after receiving six more. Lynes, however, thinks that it is not separable from *C. plebejus plebejus*. I follow W. L. Sclater (*in litt.*) in uniting this form with Reichenow's *gularis*, but it is indeed very close to *T. p. plebejus*.

1929. **Turdoides fulvus maroccanus** Lynes = *Turdoides fulvus maroccanus*.

Turdoides fulvus maroccanus Lynes, *Mém. Soc. Sci. Nat. Maroc.*, No. xiii, part 1, p. 49 (1925—Taroudant, Sous).

Type: ♂ ad., near Taroudant, 25.vi.1924. Admiral Hubert Lynes coll. No. 628.

1930. **Ianthocincla caerulata latifrons** R. = *Ianthocincla caerulata latifrons*.

Ianthocincla caerulata latifrons Rothschild, *Nor. Zool.* xxxiii, p. 266 (1926—Shweli-Salwin Divide).

Type: ♂, forests of Shweli-Salwin Divide, 8,000 feet, July 1925. G. Forrest coll. No. 5982.

Only a pair with imperfect tails known, more material therefore desirable.

1931. **Pomatorhinus ruficollis similis** R. = *Pomatorhinus ruficollis similis*.

Pomatorhinus ruficollis similis Rothschild, *Nor. Zool.* xxxiii, p. 261 (1926—N.W. Yunnan: Tengyueh, Lichiang Range, Shweli-Salwin Divide).

Type: ♂, thickets on hills around Tengyueh, 7,000 feet, iii.1922. G. Forrest coll. No. 1391.

This seems to be quite a recognizable subspecies nearest to *bakeri* and perhaps *albipectus* from Szemao in South Yunnan, of which we have no specimens.

1932. **Xiphirhynchus superciliaris forresti** R. = *Xiphorhamphus superciliaris forresti*.

Xiphirhynchus superciliaris forresti Rothschild, *Nor. Zool.* xxxiii, p. 262 (1926—Shweli-Salwin Divide and hills N.W. of Tengyueh).

Type: ♀, Shweli-Salwin Divide, W. Yunnan, vii. 1925, in forest 10,000-11,000 feet. G. Forrest coll.

1933. **Melaenornis lugubris ugandae** Som. = *Melaenornis lugubris ugandae*.

Melaenornis lugubris ugandae van Someren, *Bull. B.O. Club*, xli, p. 104 (1921—Uganda and Kavi-rondo); *Nor. Zool.* 1922, p. 93.

Type: ♂ ad., Sezibwa River, 16.x.1915. Van Someren coll.

The distribution of the *Melaenornis* forms as accepted by Dr. van Someren requires further confirmation.

1934. **Empidornis semipartitus orleansi** R. = *Empidornis semipartitus orleansi*.

Empidornis semipartitus orleansi Rothschild, *Bull. B.O. Club*, xliii, p. 45 (1922—"Upper Nile: Rejaf, Gondokoro, Nimule").

Type: ♂ ad., Rejaf, 20.ii.1922. Duc d'Orleans coll.

This subspecies is obviously smaller than *E. s. semipartitus*, the wing of the type being 94 mm., and that of another Rejaf example (also marked ♂) only 85 mm., while other Upper Nile examples have wings of 88-95 mm. *E. semipartitus semipartitus* have wings of 85-89 mm.—thus not really smaller than

orleansi—but the underside is paler. More material is desirable of *E. s. semi-partitus* to confirm its constancy. We had only four from southern Abyssinia collected by O. Kovacz.

1935. **Bradornis taruensis** Som. = *Bradornis griseus taruensis*.

Bradornis taruensis van Someren, *Bull. B.O. Club*, xli, p. 104 (1921—"The thorn-bush country of the Taru: Maungu, Samburu, Sagala, Taveta, M'buyuni, Campi-ya-bibi").

Type: ♂, Campi-ya-bibi, 3.vii.1918. Van Someren coll.

In *Ibis*, 1918, Selater & Praed summarily dismissed the various races of *B. griseus*, a view to which they will hardly adhere. *B. g. taruensis* has a much smaller bill than the southern *B. g. griseus*, besides having a darker upperside; *B. g. pumilus* of Somaliland is much smaller than even *taruensis* and very pale.

1936. **Bradornis murinus suahelicus** Som. = *Bradornis murinus suahelicus*.

Bradornis murinus suahelicus van Someren, *Bull. B.O. Club*, xli, p. 104 (1921—"Masindi, Entebbe, Kyetume, Elgon, and also Londiani, Kakamegoes, Nairobi, Kitai, and Sagala").

Type: ♀, Londiani, 12.xii.1912. Van Someren coll.

Although very much like *B. m. murinus*, it seems to me that Dr. van Someren's differences hold good.

1937. **Alseonax caeruleus kikuyensis** Som. = *Alseonax caeruleus kikuyensis*.

Alseonax caeruleus kikuyensis van Someren, *Bull. B.O. Club*, xli, p. 102 (1921—"Nairobi, Kyambu, in the Kikuyu Mountains"); *Nov. Zool.* 1922, p. 96.

Type: ♀, Kyambu Forest, 19.iii.1916. Van Someren coll.

1938. **Bias musicus changamwensis** Som. = *Bias musicus changamwensis*.

Bias musicus changamwensis van Someren, *Bull. B.O. Club*, xl, p. 24 (1919—"Coast-lands of British and German East Africa").

Type: ♂♀, Changamwe, near Mombasa, 21.vii.1918. Van Someren coll.

1939. **Bias musicus pallidiventris** Som. = *Bias musicus pallidiventris*.

Bias musicus pallidiventris van Someren, *Bull. B.O. Club*, xli, p. 102 (1921—Angola to Tanganyika).

Type: ♀, Cahoca in Angola, 23.xi.1903. W. J. Ansorge coll.

1940. **Diaphorophya graueri silvae** Hart. & Som. = *Diaphorophya graueri silvae*.

Diaphorophya graueri silvae Hartert & van Someren, *Bull. B.O. Club*, xliii, p. 79 (1923—Silwa, Kaimosi).

Type: ♂ ad., Silwa, Kaimosi, East Africa, 25.v.1922. Collected by Dr. van Someren's native collector.

1941. **Rhipidura dahli antonii** Hart. = *Rhipidura dahli antonii*.

Rhipidura dahli antonii Hartert, *Nov. Zool.* xxxiii, p. 141 (1926—New Ireland).

Type: ♂ ad., New Ireland, 18.1.1924. A. F. Eichhorn coll. No. 8975.

1942. **Rhipidura rufifrons granti** Hart. = *R. rufifrons granti*.

Rhipidura rufifrons granti Hartert, *Bull. B.O. Club*, xxxviii, p. 60 (1918—Rendova, Gizo, Vella Lavella, and Kulambangra Islands, central group of Solomon Islands).

Type: ♂, Rendova, 27.11.1904. No. A 1381, A. S. Meek coll.

1943. **Rhipidura rufifrons commoda** Hart. = *R. rufifrons commoda*.

Rhipidura rufifrons commoda Hartert, *Bull. B.O. Club*, xxxviii, p. 60 (1918—Bougainville I.).

Type: ♂ ad., Bougainville, 26.xii.1907. No. 3669, A. S. Meek coll.

1944. **Rhipidura rufiventris mussau** Hart. = *Rhipidura rufiventris mussau*.

Rhipidura rufiventris mussau Hartert, *Nor. Zool.* xxxi, p. 271 (1924—St. Matthias Island).

Type: ♂ ad., St. Matthias Island, 11.vi.1923. Albert F. Eichhorn coll. No. S540.

† 1945. **Rhipidura rufiventris albertorum** Hart. = *Rh. rufiventris setosa*.

Rhipidura rufiventris albertorum Hartert, *Nor. Zool.* xxxi, p. 271 (1924—New Hanover); cf. Hart., *Nor. Zool.* xxxii, p. 130, 1925 !!

Muscipeta setosa Quoy et Gaimard, *Voy. Astrolabe, Zool.* i, p. 181, pl. iv, fig. 4 (1830—Carteret Harbour, South New Ireland).

Type: ♂ ad., New Hanover, 23.ii.1923. Albert F. Eichhorn coll. No. 8212.

1946. **Rhipidura rufiventris perneglecta** Hart. = *Rh. rufiventris perneglecta*.

Rhipidura rufiventris perneglecta Hartert, *Bull. B.O. Club*, xxxviii, p. 59 (1918—Taam, Kilsocin, and Koer in the Tiandu group).

Type: ♂ ad., Taam Island, 22.vii.1899. Heinr. Kühn coll. No. 1352.

This subspecies was unfortunately described again by myself in *Nov. Zool.*, 1920, p. 497, under No. 817, as *Rhipidura rufiventris tiandu* !!

1947. **Rhipidura rufiventris finitima** Hart. = *Rh. rufiventris finitima*.

Rhipidura rufiventris finitima Hartert, *Bull. B.O. Club*, xxxviii, p. 59 (1918—Tevor and Kisocin in the Watubela group).

Type: ♂ ad., Kisocin, 13.iii.1900. Heinr. Kühn coll. No. 2084.

1948. **Rhipidura squamata henrici** Hart. = *Rh. squamata henrici*.

Rhipidura squamata henrici Hartert, *Bull. B.O. Club*, xxxviii, p. 59 (1918—Outlying small islands of the Key group).

Type: ♀, Kilsocin in the Koer group, 2.vii.1899 (not 1892!). Heinr. Kühn coll. No. 1287.

1949. **Monarcha hebetior** Hart. = *Monarcha hebetior hebetior*.

Monarcha hebetior Hartert, *Nor. Zool.* xxxi, pp. 270, 271 (1924—St. Matthias Island).

Type: ♂ ad., St. Matthias Island, 30.v.1923. Albert F. Eichhorn coll. No. 8479.

1950. **Monarcha hebetior eichhorni** Hart. = *Monarcha hebetior eichhorni*.

Monarcha hebetior eichhorni Hartert, *Nor. Zool.* xxxi, p. 271 (1924—New Hanover).

Type: ♂ ad., New Hanover, 3.iii.1923. A. F. Eichhorn coll. No. 8256.

Monarcha hebetior is one of the most interesting birds I had the opportunity to describe. While its males must resemble those of *M. alecto chalybeocephalus* from a distance, the females are quite different. They were collected many years ago by Th. Kleinschmidt and Kubary in New Britain, but were thought to be a stage of plumage of *chalybeocephalus*, which was, of course, impossible,

as these birds moult direct from the juvenile to the adult plumage. While in St. Matthias only *M. hebetior* is known so far, on New Britain and New Ireland both species are found. Cf. *Nov. Zool.*, 1925, p. 129; 1926, p. 139!

1951. **Batis soror pallidigula** Som. = *Batis soror pallidigula*.

Batis soror pallidigula van Someren, *Bull. B.O. Club*, xli, p. 103 (1921—Lumbo in North Mozambique); *Nov. Zool.*, 1922, p. 101.

Type: ♀, Lumbo, 17.vii.1918. Collected by Dr. van Someren's collectors.

Requires further confirmation, I think, but other specimens from northern Mozambique, collected by H. C. Müller, are like van Someren's *pallidigula*.

1952. **Batis molitor taruensis** Som. = *Batis molitor taruensis*.

Batis molitor taruensis van Someren, *Bull. B.O. Club*, xli, p. 103 (1921—Taru desert, Samburu, Maungu, and Changamwe); *Nov. Zool.*, 1922, p. 100.

Type: ♂ ad., Maungu, 4.viii.1918. Collected by Dr. van Someren's collectors.

The crown of the head of the type is almost pure black, merging into grey on the nape.

1953. **Tchitrea viridis harterti** Meinertzh. = *Tchitrea viridis harterti*.

Tchitrea viridis harterti Meinertzhagen, *Bull. B.O. Club*, xliii, p. 158 (1923—Aden and Lahej, Yemen) Cf. also *Nov. Zool.* 1917, p. 462.

Type: ♂ ad., Wasil, Yemen, 4,000 feet. G. W. Bury coll.

CAMPEPHAGIDAE.

1954. **Lalage conjuncta** R. & H. = *Lalage conjuncta*.

Lalage conjuncta Rothschild & Hartert, *Bull. B.O. Club*, xliv, p. 51 (1924—St. Matthias Island). *Nov. Zool.*, xxxi, p. 272, 1924.

Type: ♂ ad., St. Matthias Island, 30.vii.1923. A. F. Eichhorn coll. No. 8691.

1955. **Lalage karu falsa** Hart. = *Lalage karu falsa*.

Lalage karu falsa Hartert, *Nov. Zool.*, xxxii, p. 131 (1925—"New Britain, Duke of York Islands, Rook Island").

Type: ♂ ad., Duke of York Is., 4.xi.1880. Th. Kleinschmidt coll., No. 9857 of the Godeffroy Museum in Hamburg.

1956. **Lalage karu albidior** Hart. = *Lalage karu albidior*.

Lalage karu albidior Hartert, *Nov. Zool.*, xxxi, p. 208 (1924—New Hanover).

Type: ♂ ad., New Hanover, 21.ii.1923. A. F. Eichhorn coll. No. 8203.

PYCNONOTIDAE.

† 1957. **Pycnonotus dodsoni teitensis** Som. = *Pycnonotus dodsoni dodsoni*.

Pycnonotus dodsoni teitensis van Someren, *Nov. Zool.*, xxix, p. 190 (1922—"South Ukamba to Kilimanjaro").

Type: ♂, Tsavo, 26.iii.1918. Dr. van Someren coll.

Mr. Sclater kindly tells me that he considers *teitensis* not to be separable from *dodsoni*, nor would he separate *peasei* of Mearns and *littoralis* van Someren.

1958. **Pycnonotus barbatus nigeriae** Hart. = *Pycnonotus barbatus nigeriae*.
Pycnonotus barbatus nigeriae Hartert, *Bull. B.O. Club*, xli, p. 126 (1921—"Southern Nigeria").

Type: ♀ ad. (not ♂), Degama, 23. v. 1902. W. J. Ansorge coll. No. 478.

1959. **Arizelocichla neumanni** Hart. = *Arizelocichla nigriceps neumanni*.
Arizelocichla neumanni Hartert, *Bull. B.O. Club*, xlii, p. 50 (1922—"Uluguru Mts. in western part of Tanganyika Territory").

Type: ♂, Uluguru Mts., 18. v. 1921. Arthur Loveridge coll.
W. L. Selater (*in litt.*) says this is a subspecies of *A. nigriceps*.

1960. **Arizelocichla nigriceps percivali** Hart. = *A. nigriceps percivali*.
Arizelocichla nigriceps percivali Hartert, *Bull. B.O. Club*, xlii, p. 50 (1922—"Usambara Mts., Tanganyika Territory").

Type: Ad., Usambara Mts. A. Blainey Percival coll.

1961. **Eurillas virens holochlorus** Som. = *Eurillas virens holochlorus*.
Eurillas virens holochlorus van Someren, *Nov. Zool.* xxix, p. 189 (1922—"Budongo, Bugoma, Lugalamba, Sezibwa, Kyetume, Elgon").

Type: ♂, Sezibwa R., Chagwe, Uganda, November 1914.

This form is, according to our material, much larger in both sexes, the females being in these forms very much smaller than the males.

1962. **Phyllastrephus rabai** Hart. & Som. = *Phyllastrephus debilis rabai*.
Phyllastrephus rabai Hartert & van Someren, *Bull. B.O. Club*, xli, p. 64 (1921—"Rabai Hills north of Mombasa").

Type: ♂ ad., Rabai, 18. x. 1920. V. G. L. van Someren coll.

Mr. Selater (*in litt.*) thinks that *rabai* is a subspecies of *debilis* from Inhambane in South Mozambique.

† 1963. **Phyllastrephus placidus sokokensis** Som. = *Phyllastrephus fischeri fischeri*.
Phyllastrephus placidus sokokensis van Someren, *Bull. B.O. Club*, xliv, p. 7 (1923—"The forests along the coast of Kenya Colony, from north of the Tana River, south to Shimoni and Gazi").

Type: ♂ ad., Sokoke Forest, 16. i. 1921. From Dr. van Someren's collectors.
According to Mr. Selater, this is the same as *Ph. fischeri fischeri*.

TROGLODYTIDAE.

1964. **Troglodytes troglodytes juniperi** Hart. = *T. troglodytes juniperi*.
Troglodytes troglodytes juniperi Hartert, *Bull. B.O. Club*, xlii, p. 140 (1922—"Juniper woods on mountains and plateau of north-western Cyrenaica, or Barka"); *Nov. Zool.* xxx, p. 21, 1923.

Type: ♂ ad., juniper woods near Merg, 9. v. 1922. Hartert and Hilgert coll.

(?) 1965. **Pnoepyga squamata magnirostris** R. = ? *P. squamata magnirostris*.
Pnoepyga squamata magnirostris Rothschild, *Nov. Zool.* xxxii, p. 297 (1925—Shweli Valley).

Type: ♀, shot 7,000 feet high in dense thicket in the Shweli valley, N.W. Yunnan, November 1923. George Forrest coll. No. 5819.

It is impossible, from comparison with two males of *P. s. mutica*, to say whether the single specimen, which has—as stated by Lord Rothschild—the bill

longer (but only a tiny bit), and the upperside a little more olivaceous, is really a different subspecies.

HIRUNDINIDAE.

1966. *Hirundo senegalensis hybrida* Som. = *Hirundo senegalensis hybrida*.

Hirundo senegalensis hybrida van Someren, *Bull. B.O. Club*, xli, p. 104 (1921—"East Africa: Mom-basa, Changamwe, Tsavo, M'buyuni, Samburu, Nairobi"); *Nor. Zool.* xxix, p. 91, 1922.

Type: ♂, Tsavo, 29.iii.1918. V. G. L. van Someren coll.

EURYLAEEMIDAE.

1967. *Smithornis capensis meinertzhageni* Som. = *Smithornis capensis meinertzhageni*.

Smithornis capensis meinertzhageni van Someren, *Bull. B.O. Club*, xl, p. 24 (1919—"Foothills of Elgon and North Kavirondo, and probably Nandi").

Type: ♂ ad., Lerundo, Nyarondo, 11.iii.1917. H. J. Allen Turner coll. for R. Meinertzhagen.

1968. *Smithornis rufolateralis budongoensis* Som. = *Smithornis rufolateralis budongoensis*.

Smithornis rufolateralis budongoensis van Someren, *Bull. B.O. Club*, xli, p. 103 (1921—"Budongo Forest and Bugoma").

Type: ♀, Budongo Forest, 17.ii.1907. L. M. Seth-Smith coll.

CYPSELI.

1969. *Collocalia francica eichhorni* Hart. = *Collocalia francica eichhorni*.

Collocalia francica eichhorni Hartert, *Nor. Zool.* xxxi, p. 269 (1924—St. Matthias Island).

Type: ♂, St. Matthias Island, 10.vi.1923. A. F. Eichhorn coll. No. 8532.

CAPRIMULGI.

1970. *Chordeiles virginianus aserriensis* Cherrie = *Chordeiles virginianus aserriensis*.

Chordeiles virginianus aserriensis Cherrie, *Auk*, xiii, p. 136 (1896—Valley of River Aserri, San José, Costa Rica, 2.xi.1893).

Geo. K. Cherrie coll. No. 4261.

1971. *Nannochordeiles pusillus septentrionalis* Hellm. = *Nannochordeiles pusillus septentrionalis*.

Nannochordeiles pusillus septentrionalis Hellmayr, *Nor. Zool.* xv, p. 78 (1908—"Northern Brazil, British Guiana, Venezuela").

Type: ♂ ad., Maipures, on the Orinoco, 22.i.1889. Geo. K. & Stella M. Cherrie coll. No. 11714.

BUCEROTES.

1972. *Rhyticeros plicatus mendanae* Hart. = *Rhyticeros plicatus mendanae*.

Rhyticeros plicatus mendanae Hartert, *Bull. B.O. Club*, xlv, p. 46 (1924—Solomon Islands).

Type: ♂ ad., Guadalcanar, Solomon Islands, 1.v.1901. A. S. Meek coll. No. 3065.

PSITTACI.

1973. **Micropsitta bruijnii necopinata** Hart. = *Micropsitta bruijnii necopinata*.
Micropsitta bruijnii necopinata Hartert, *Nov. Zool.* xxxii, p. 124 (1925—S.W. New Ireland).

Type: ♂ ad., S.W. New Ireland, 19.xii.1923. A. F. Eichhorn coll. No. 8885.

1974. **Micropsitta pusio stresemanni** Hart. = *Micropsitta pusio stresemanni*.
Micropsitta pusio stresemanni Hartert, *Nov. Zool.* xxxiii, p. 130 (1926—Sudest and St. Aignan Islands, Louisiade group).

Type: ♂ ad., Mt. Riu or Rattlesnake, Sudest Island, 8.iv.1916. A. S. Meek coll. No. 7343.

1975. **Micropsitta meeki proxima** R. & H. = *Micropsitta meeki proxima*.
Micropsitta meeki proxima Rothschild & Hartert, *Bull. B.O. Club*, xlv, p. 50 (1924—St. Matthias and Squally Islands).

Type: ♂ ad., St. Matthias Island, 30.v.1923. A. F. Eichhorn coll. No. 8475.

1976. **Domicella albidinucha** R. & H. = *Domicella albidinucha*.
Domicella albidinucha Rothschild & Hartert, *Bull. B.O. Club*, xlv, p. 7 (1924—New Ireland); *Nov. Zool.* xxxii, 1925, p. 121, pl. i.

Type: ♂ ad., S.W. New Ireland, 16.xi.1923. A. F. Eichhorn coll. No. 8777.

HALCYONES.

1977. **Halcyon tristrami novaehiberniae** Hart. = *Halcyon chloris novaehiberniae*.
Halcyon tristrami novaehiberniae Hartert, *Nov. Zool.* xxxii, p. 125 (1925—S.W. New Ireland); cf. *Nov. Zool.* xxxiii, pp. 132, 133, 1926.

Type: ♂ ad., S.W. New Ireland, 24.xii.1923. A. F. Eichhorn coll. No. 8906.

CAPITONIDAE.

1978. **Cyanops monticola** Sharpe = *Cholorhea monticola*.
Cyanops monticola Sharpe, *Ann. & Mag. Nat. Hist.* ser. 6, vol. iii, p. 424 (1889—Kina Balu, Borneo).

Type: ♂, Kina Balu, 3,000 feet, 6.iii.1887. John Whitehead coll. No. 1071.

1979. **Cyanops henrici brachyrhynchus** Neum. = *C. henrici brachyrhynchus*.
Cyanops henrici brachyrhynchus Neumann, *Bull. B.O. Club*, xxii, p. 000 (1908—North Borneo).

Type: ♂ ad., Batu Song, 2,000 feet, January 1892. Charles Hose coll.

† 1980. **Capito Shelleyi** Dalmas = *Capito bourcierii aequatorialis*.
Capito Shelleyi Dalmas, *Bull. Soc. zool. France*, xxv, p. 179 (November 1900—Rio Napo—errone !); cf. Hellmayr, *Proc. Zool. Soc. London*, 1911, p. 1200.
Capito aequatorialis Salvadori & Festa, *Boll. Mus. Zool. Torino*, xv, No. 368, p. 22 (February 1900—Intai, W. Ecuador).

Type: ♂ ad., Ecuador, of the well-known Quito form and make, without exact locality, certainly not from Rio Napo (ex coll. Dalmas).

PICI.

1981. **Dryobates catpharius tenebrosus** R. = *Dryobates catpharius tenebrosus*.

Dryobates catpharius tenebrosus Rothschild, *Nov. Zool.* xxxiii, p. 240 (1926—Shwei-Salwin Divide).

Type: ♂ juv. ! shot in forest on the Shwei-Salwin Divide, vii.1925, 7,000 feet high, by G. Forrest, No. 6121.

This peculiar Woodpecker seems to replace *D. catpharius* in Yunnan, but unfortunately no adult specimen has been obtained. The bill is described as black with bluish base. The throat is dull brownish buff.

1982. **Dendrocopus cabanisi hainanus** Hart. & Hesse = *Dryobates major hainanus*.

Dendrocopus cabanisi hainanus Hartert & Hesse, *Orn. Monatsber.* 1911, p. 192 (Hainan).

Type: ♂ ad., Cheteriang, Hainan, 5.i.1894. Katsumata coll.

1983. **Iyngipicus grandis excelsior** Hart. = *Dryobates grandis excelsior*.

Iyngipicus grandis excelsior Hartert, *Nov. Zool.* v, p. 461 (1898—Alor Island).

Type: ♂ ad., Alor, March 1897. Alfred Everett coll.

? † 1984. **Dendromus niger** Neum. = *Campethera nubica nubica* (?).

Dendromus niger Neumann, *Orn. Monatsber.* 1902, p. 9 (Buka Mts. southern Kaffa, and Anderatscha, the capital of Kaffa).

Type: ♂ juv., Buka Mts., 4.iii.1901. Oscar Neumann coll. No. 974.

Arthur Goodson called my attention to the underside of the birds from southern Abyssinia being heavier spotted than in the specimens from the Sudan and North Abyssinia. I find, however, that our Sudan (Witherby) and North Abyssinian (Sehrader) specimens have the underside beautifully prepared, while in those from southern Abyssinia (Neumann, Sapphiro, Kovacz, Trofimoff) the underside is not well prepared, roughly cut open and not nicely closed, sometimes dirty and defective, so that the differences require confirmation. It may be, however, that all the South Abyssinian birds should be called *nigra*, and thus differentiated from the typical *nubica* of Nubia and Erythrea.

CUCULI.

† 1985. **Eudynamis scolopaceus enigmaticus** R. = *E. scolopaceus chinensis*.

Eudynamis scolopaceus enigmaticus Rothschild, *Nov. Zool.* xxxiii, p. 235 (1926—W. Yunnan).

Eudynamis chinensis Cabanis & Heine, *Mus. Hein.* iv, p. 52 (1862—Canton, China).

Type: ♂ ad., shot in forests on hills N.W. of Tengyueh, W. Yunnan, 7,000 feet high, April 1925. G. Forrest coll. No. 6201.

Cf. Rothschild, *Nov. Zool.* xxxiii, p. 398, 1927!

† 1986. **Urodynamis taitensis belli** Math. = *Urodynamis taitensis taitensis*.

Urodynamis taitensis belli Mathews, *Bull. Brit. Orn. Club*, xxix, p. 24 (1918—Norfolk Island).

It is true that the type specimen is rather dark (not lighter!), but the series does not confirm this, and Mathews, in 1927, admitted *belli* to be a synonym.

Cf. *Systema Av. Australas.* i, p. 419.

1987. **Chalcites malayanus salvadorii** Hart. & Stres. = *Chalcites malayanus salvadorii*.

Chalcites malayanus salvadorii Hartert & Stresemann, *Nov. Zool.* xxxii, p. 162 (1925—Babber).

Type: ♂, Teapa, Babber, 15.ix.1905. Heinr. Kühn coll. No. 6939.

† 1988. **Cuculus optatus belli** Math. = *Cuculus optatus*.

Cuculus optatus belli Mathews, *Bull. B.O. Club*, xxxvi, p. 83 (1916—Lord Howe Island).

Type: ♂ ad., Lord Howe Island, 17.ii.1915. Roy Bell coll. No. 37.

Already recognized as synonym by Mathews.

STRIGES.

1989. **Ninox variegata superior** Hart. = *Ninox variegata superior*.

Ninox variegata superior Hartert, *Nov. Zool.* xxxii, p. 121 (1925—New Hanover).

Type: Ad. New Hanover, 21.ii.1897. Cayley Webster coll. No. 435.

ACCIPITRES.

1990. **Accipiter fasciatus tjendanae** Stres. = *Accipiter fasciatus tjendanae*.

Accipiter fasciatus tjendanae Stresemann, *Journ. f. Orn.* 1925, p. 323 (Sumba).

Type: ♀ ad., Sumba, Waingapo, September 1896. A. Everett coll.

So far only this female and two adult males are recorded!

1991. **Accipiter eichhorni** Hart. = *Accipiter eichhorni eichhorni*.

Accipiter eichhorni Hartert, *Nov. Zool.* xxxiii, p. 36 (1926—Feni Island, east of South New Ireland).

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

1992. **Accipiter eichhorni imitator** Hart. = *Accipiter eichhorni imitator*.

Accipiter eichhorni imitator Hartert—*Nov. Zool.* xxxiii, p. 37 (1926—Choiseul, northern Solomon Islands).

Type: ♀ ad., Choiseul, 6.i.1904. A. S. Meek coll. No. A 1105.

1993. **Accipiter luteoschistaceus** R. & H. = *Accipiter luteoschistaceus*.

Accipiter luteoschistaceus Rothschild & Hartert, *Bull. B.O. Club*, xlvi, p. 53 (1926—New Britain); *Nov. Zool.* 1926, p. 127.

Type: ♂, Talasea, New Britain, 21.iv.1925. A. F. Eichhorn coll. No. 10129.

† 1994. **Circus approximans drummondi** Math. = *Circus juxta* (or *approximans*) *gouldi*.

Circus approximans drummondi Mathews & Iredale, *Ibis*, 1913, p. 419 (New Zealand).

Type: An unsexed bird without original label, said by Mathews to come from North Island, New Zealand.

I cannot recognize this subspecies, which is merely said to be darker and smaller, wing less than 398 mm. These statements I cannot endorse, as in *C. a. gouldi* from Australia many specimens are as dark or darker than New Zealand ones, and many of the latter have wings longer than 398 mm. and so had the type, as its wings are strongly worn off!

The distribution in the *Syst. Av. Australasian*, pp. 237, 238, is rather generalized, Norfolk Island, Chatham and New Hebrides Islands, Kermadecs, and the two occurrences in New Guinea not being given.

The treatment of this group in Swann's *Monograph of Birds of Prey* is regrettably bad. The description of the plumages is not good, no notice being taken of the usual variations in both old and young. The subspecies have apparently not been studied, but mentioned from short preliminary notes by Mathews and Iredale. No judgment has been attempted, for example, in the case of *C. a. drummondi*, though a series was available at Tring. Swann only repeated Mathews and Iredale's statement in other words: "Rather smaller and darker than *C. a. gouldi*; wing ♂ 398 mm." But the two authors did not say this, but that the wing was "less than 398 mm.," and the sex of the type is not stated. Nor does this *one* measurement refer to the subspecies, but merely to the type, as I have said above.

† 1995. *Gymnogenys typicus graueri* Swann = *Gymnogenys radiatus typicus*.

Gymnogenys typicus graueri Swann, *Synops. Accip.* p. 17 (1922—"E. Africa"); *Monogr. B. Prey*, part ii, p. 101, 1925.

Type: "♀," not quite adult, Kissenyi, shore of Lake Kivu, 26.xii.1907. Rudolf Grauer coll. No. 1746.

I am sorry to say that I cannot confirm the supposed differences of this subspecies. The width of the black and white bars on the abdomen varies much, and there are specimens from N.E. Africa that have them as in the type of "*graueri*." Some adult specimens of *typicus* have the under surface uniform grey, with only some bars on the vent and under tail-coverts, or even without any. We have such specimens not only from the Lake Kivu region (Grauer coll.), but also from Senegambia and from Farniso near Kano (Buchanan coll.). The extraordinary variations of the young birds of *typicus*—one from South Nigeria, collected by Ansorge, has the greater part of the upperside black!—are not described in Swann's *Monograph*. So far I can only distinguish three subspecies:

G. radiatus radiatus (Scopoli) from Madagascar.

G. radiatus typicus (Smith) from South Africa through East and Central Africa to Abyssinia and White Nile.

G. radiatus pectoralis (Sharpe) from West Africa. The most typical specimen I saw from Benguela. To this form seems also to belong the one from Hausaland which I have from Zaria and Kano.

ARDEAE.

1996. *Hydranassa tricolor rufimentum* Hellm. = *Hydranassa tricolor rufimentum*.

Hydranassa tricolor rufimentum Hellmayr, *Nor. Zool.* xiii, p. 50 (1906—Trinidad).

Type: ♂ ad., Caroni Swamp, Trinidad, 22.iii.1902. E. André coll.

This appears to be a very distinct subspecies, but as far as I know is still unique. More material from Trinidad should therefore be obtained and examined.

TUBINARES.

1997. **Cymochorea owstoni** Math. = *Oceanodroma owstoni*.

Cymochorea owstoni Mathews & Iredale, *Ibis*, 1915, p. 581 (sea near Japan). Cf. Hartert, *Vög. pal. Fauna*, p. 1416!

Type: ♂ ad., Okinose, Sagami Sea, Hondo, 1.v.1902. From Alan Owston's collectors, ex coll. Mathews.

(*O. markhami* and *owstoni* must be subspecies, but a final grouping of these birds remains to be done.)

COLUMBAE.

1998. **Phlegoenas crinigera leytensis** Hart. = *Gallicolumba crinigera leytensis*.

Phlegoenas crinigera leytensis Hartert, *Nov. Zool.* 1918, p. 434 (Leyte, Philippine Is.).

Type: ♂ ad., Mts. of northern Leyte or Leite, 3.viii.1896. John Whitehead coll. No. B 834.

1999. **Phlegoenas crinigera basilanica** Hart. = *Gallicolumba crinigera basilanica*.

Phlegoenas crinigera basilanica Hartert, *Nov. Zool.* xxv, p. 434 (1918—Basilan).

Type: ♂ ad., Basilan, February 1898. William Doherty coll.

PYGOPODES.

2000. **Podiceps ruficollis japonicus** Hart. = *Podiceps ruficollis japonicus*.

Podiceps ruficollis japonicus Hartert, *Vög. pal. Fauna*, ii, p. 1455 (1920—Japan).

Type: ♂ ad., near Tokio, Japan, 13.iv.1894. Apparently collected by a Mr. Kaitsumwic.

LIMICOLAE.

2001. **Pluvianus aegyptius angolae** Meinertzh. = *Pluvianus aegyptius angolae*.

Pluvianus aegyptius angolae Annie C. Meinertzhagen, *Bull. B.O. Club*, xlvii, p. 100 (1927—"Angola and Belgian Congo").

Type: ♂ ad., Cunga, Quanza River, Angola, 19.v.1901. C. Hubert Pemberton coll.

RALLI.

2002. **Gallinula olivacea nigrifrons** Hart. = *Gallinula (Amaurornis) olivacea nigrifrons*.

Gallinula (Amaurornis) olivacea nigrifrons Hartert, *Nov. Zool.* xxxiii, p. 172 (1926—"Witu Islands, New Britain, Duke of York Islands, New Hanover, and probably also New Ireland, and also Solomon Islands").

Type: ♂ ad., Witu (French) Islands, 24.vi.1925. A. F. Eichhorn coll. No. 10328.

SPHENISCIDAE.

? 2003. **Eudyptula minor iredalei** Math. = *Eudyptula minor iredalei* (?).

Eudyptula minor iredalei Mathews, *B. Austr.* i, p. 286, pl. 67 (1911—Chatham Islands).

Type: ♂. An unsexed bird somewhere from the New Zealand seas, but not from the Chatham Islands! Received by Mathews in exchange from the Tring Museum.

Mathews said that the Chatham Islands form had a "shorter, thicker bill" and a darker coloration. The specimen marked by the author as the "type" and erroneously supposed to have come from the Chatham Islands, is not separable from other New Zealand examples, while most Chatham birds have a *longer* (not shorter!) and higher bill. The coloration is the same.

Two more recent types are to be added:

2004. **Microscelis madagascariensis albiventris** Neum. = *Microscelis madagascariensis albiventris*.

Microscelis madagascariensis albiventris Neumann, *Orn. Monatsber.* 1926, p. 110 (Joanna Island = Anjouan).

Type: Ad. Anjouan, 23. ix. 1906. Krishnasamy Naidoo coll.

† (?) 2005. **Milvus milvus harterti** Bédé = *Milvus milvus milvus*.

Milvus milvus harterti Bédé, *Mém. Soc. Sci. Nat. Maroc*, No. xvi, p. 36, dated on cover 31. xii. 1926, but not distributed before July 1927 (on p. 150 it says "Achévé d'imprimer le 25. Mai 1927").

Type: ♀, nearly ad., Aïn-Leuh, Middle Atlas, Marocco, 20. iv. 1925. Paul Bédé coll. Presented by the author.

This bird seemed not to be breeding; the tail is very much, the wings are much, worn. The wing measures 443 mm., but being worn must be at least 450 mm., if in fresh and unworn plumage. There is obviously no sound reason for naming this form! It is just *possible* that North African Red Kites are somewhat smaller, but it is not a scientific proceeding to name them from the insufficient material so far available; we require more evidence for creating new subspecies.

NOTES ON THE GENUS *CYORNIS*, BLYTH.

BY HERBERT C. ROBINSON AND NORMAN B. KINNEAR.

IT may be well to explain at the outset that in the main we have followed the late Dr. R. B. Sharpe (*Handl. Birds*, iii, 1901, pp. 214-17) in his conception of the species that should be included in this extensive genus, except that we have excluded therefrom *Cyornis rufigula* and *C. bonthaina*, which belong to *Dendrobiastes*, *C. erythaca* whose position is doubtful, and *C. clopurensis*, which is almost certainly an immature bird of the genus *Erythromyias* Sharpe, or more properly *Oreicola* Bp.

On the other hand, we have reinstated in the genus, *poliogenys* Brooks, and its allied races which many authors have included in *Anthipes*, Blyth, from which genus it is in our opinion widely divorced.

Even with these emendations the genus is an extremely composite one and presents many difficulties. If colour pattern is to be regarded as important there are at least three distinct sections which are as markedly different from each other as many avian genera. In so-called structural characters there is also marked divergence in the species, especially in the bill and the relative length of the tail. Many species, too, inoscuate with other accepted genera, such as *Niltava* and *Cyanoptila*, in some of their characters. Were it not for considerations of convenience there are very many arguments for the course adopted by Dr. Hartert in including the majority of these nomenclatorial genera in the comprehensive genus *Muscicapa* Linn. To do so, however, makes that genus inordinately large, and involves numerous changes in the accepted nomenclature. We have, therefore, for the present retained all the species currently accepted as *Cyornis* under that heading, which is, we admit, illogical, as unless they are all placed under *Muscicapa* they are by no means strictly congeneric in other than the broadest sense.

The series of birds on which these remarks are based is very considerable; it includes all those in the British Museum and in the Tring Museum, and selected specimens from the collections in Washington, Cambridge, Mass., U.S.A., Berlin, Stockholm, and Paris. In addition, we have had before us at one time and another the whole of the series in the Federated Malay States, Singapore, and Sarawak Museums, and many from Sumatra collected by Mr. E. Jacobson, and now in Leyden, as well as from Siam in the private collection of Sir W. F. Williamson. To the authorities of all these museums, and more especially to Lord Rothschild for the loan of his unrivalled collection of the genus, and for the hospitality of NOVITATES ZOOLOGICAE for the publication of these remarks, our most cordial thanks are tendered.

Of recent literature on the genus we must make special reference to the article by Dr. Stresemann (*Ornith. Monatsb.* xxxiii, 1925, pp. 45-53), with which we are in substantial agreement, differing only in matters of detail.

Measurements given in millimetres are those of the wing, pressed flat against the rule.

GENUS **CYORNIS** Blyth 1843.

Journ. Asiat. Soc. Bengal, xii, pt. 2, 1843, p. 949.

Type : *Phoenicura rubeculoides* Vig.

SECTION I.

In this, the typical section of the genus, the sexes are different, but sometimes not markedly so; the *males* are shining bright blue above, lighter on the forehead, superciliaries, and rump, but without a specially noticeable bright patch on the angle of the wing; sides of the head and throat blue or blackish blue; breast rufous; belly and under tail-coverts white or nearly so. *Females* either blue or brown above.

Species 1.

Males bright blue above with blue chin and throat; females brown, breast rufous buff, lores whitish.

Cyornis rubeculoides rubeculoides (Vig.).

Phoenicura rubeculoides Vigors, *P.Z.S.* 1831, p. 25 (North-West Himalayas).

Muscicapa rubecola Swains., *Jard. Nat. Library*, x, 1838, p. 221, tab. xxvii (♀) (Pondicherry).

Niltara brevipes Hodgson, *Indian Review*, i, 1839, p. 650 (type in British Museum examined).

Male : The blue of the throat separated from the rusty red of the breast by an even line; belly and under tail-coverts pure white, flanks rarely much infuscated.—*Female* : Pale clay brown above, greyer on the head, more rusty on the rump, the edges of the primaries and the tail feathers; lores whitish. Beneath rufous buff, more yellowish on the throat; middle of belly and under tail-coverts white.

Range : From the N.W. Himalayas to the Eastern Assam Hill tracts. Continental India and Ceylon (winter). Manipur, the Chin Hills, and the Chindwin; not apparently far east of the Irawadi.

N.W. Himalayas (Simla, Mussorie, etc.)	9 ♂ : 71–73; mean 72.1 mm. 1 ♀ : 71
Kashmir	1 ♂ : 72; 1 ♀ : 71
Nepal	5 ♂ : 69–72; mean 70.8 mm. 3 ♀ : 67–70
Sikkim and Darjeeling	27 ♂ : 68–73; mean 71.3 mm. 12 ♀ : 67–69; mean 68 mm.
Northern India (plains and Central Provinces)	7 ♂ : 70–74; mean 71.4 mm. 4 ♀ : 68–70; mean 69 mm.
Southern India (Kandesh, Coorg, Belgaum, Madras)	6 ♂ : 70–73; mean 72.0 mm. 2 ♀ : 69, 71
Ceylon	2 ♂ : 70, 71
North Cachar	8 ♂ : 69–72; mean 70.4 mm. 1 ♀ : 68
Assam Hill Tracts, Garo, Naga, and Miri Hills	14 ♂ : 68–73; mean 69.6 mm. 2 ♀ : 66, 67
Manipur	11 ♂ : 68–72; mean 70.5 mm. 2 ♀ : 68, 68
Ruby Mines, Upper Burma	♂ : 71
North Chin Hills	♀ : 66

Mt. Victoria, S. Chin Hills	♂ : 71
Upper Chindwin	♂ : 71
Lower Chindwin	♀, ♂ : 72, 66
Kauri Kachin Traets	♂ : 69

The whole of the series detailed above must, we think, be regarded as sub-specifically identical, though, as is always the case, there is a small decrease in size and increase in brightness in the more southern birds. The subspecific characters are not absolutely constant, but only a very small proportion have the rusty red of the breast intruding on the blue of the throat. Cases that do occur are sporadic and often in birds remote from the range of *dialilaema* from such localities as Dharmasala.

Cyornis rubeculoides rogersi, subsp. nov.

Male : Not separable with any certainty from Pegu and North Tenasserim birds.—*Female* : Differs from all others examined in the rich cinnamon chestnut tint and the brighter earthy brown tint of the whole of the upper surface. Breast richer ferruginous than others of the group, this colour extending on to the flanks. Middle of belly and under tail-coverts pure white, under wing-coverts tinged with buff.

Type : Adult female. Aracan. Lat. 18°–19° N. Long. 95° E. Rogers coll. in Tring Museum.

Range : Apparently localized in the Aracan Yomas.

Aracan Yomas, lat. 18°–19°. Altitude, 500–1,000 feet. September, 2 ♂ : 68, 71

October, November 1906. Rogers coll. (Tring Mus.) . 3 ♀ : 67, 68, 69

Segyi, Lower Chindwin. December 1905. Mears [C.] (Brit.

Mus.) 1 ♀ : 68 [♂]

This last specimen appears to be referable to this race, though others from the Upper Chindwin are nearer true *rubeculoides*.

Cyornis rubeculoides dialilaema Salvad.

Cyornis dialilaema Salvad., *Ann. Mus. Civ. Gen.* (2a), vii, 1889, p. 387 (Taho Plateau, North Tenasserim: type in Genoa Museum).

Cyornis rubeculoides chersonites Oberholser, *Proc. Biol. Soc. Washington*, xxxiii, 1920, p. 85 (Trang, Peninsular Siam: type in United States National Museum).

Very close to *C. rubeculoides rubeculoides* and only separable in series, but perhaps slightly smaller. *Male* : Rather brighter above than the typical race, rufous of breast deeper and encroaching on the blue of the throat in a Λ-shaped line. Blue of throat also darker and sides of the head blacker; flanks more infuscated and under tail-coverts often tinged with buff.—*Female* : Browner above, the rump and edges of tail-feathers more chestnut, beneath, with the throat and breast, darker yellowish rufous.

Range : From the Southern Shan States to central and southern Burma and east to northern and western Siam and ranging far south into Tenasserim, and possibly to Peninsular Siam.

South Shan States. May ♂ : 69

Thyetmyo, Central Burma. February, April, 2 ♀ juv. : 67, 68

August, October (breeding) ♂ : 69

Tonghoo Hills. October, March, May	7 ♂ : 67-73 ; mean 69.3 mm. 1 ♀ : 66
Karen Hills and Karen-ni. January-March	5 ♂ : 67-73 ; mean 69.0 mm. 3 ♀ : 67, 68, 71
Koon Tan, N. Siam. April, May, September	14 ♂ : 66-71 ; mean 68.8 mm. 8 ♀ : 64-69 ; mean 66.9 mm.
Lower Pegu. September, October, November, February	8 ♂ : 66-70 ; mean 67.4 mm. 5 ♀ : 66-70 ; mean 67.0 mm.
Rangoon. October, December	3 ♂ : 68, 68, 68 2 ♀ : 68
Kollidoo, N. Tenasserim. January	1 ♀ : 68
Pahpoon, N. Tenasserim. December, January	2 ♂ : 68, 70 5 ♀ : 65-68 ; mean 66.0 mm.
Lower Salwin. November-February, August (breeding)	8 ♂ : 67-72 ; mean 69.3 mm. 6 ♀ :
Moulmein	♂ : 68 ; ♀ : 66
Ye, Tenasserim. March (breeding).	♂ : 69
Muleyit and Taho Plateau (topotypes). February, April	2 ♂ : 68, 69 ♀ : 65
Neding, Tenasserim. December	3 ♂ : 69, 70, 70

The very considerable series detailed above is on the whole very uniform, though the birds from Koon Tan, northern Siam, collected by Count Gyldenstolpe, which, through the kindness of Prof. Lönnberg, we have been enabled to examine, appear rather brighter. As regards the distribution of the race, we do not think that it occurs farther east than western Siam. Birds recorded as such from French Indo-China belong in part to *C. whitei* and in part to forms of *C. tickelliae*. Those from Yunman are largely the bird described from Hupeh as *C. tickelli glaucicomans* (q.v.).

***Cyornis rubeculoides klossi* Robinson.**

Cyornis rubeculoides klossi Robinson, *Bull. Brit. Orn. Club*, xlii, 1921, p. 12 (South Annam: type examined).

About the same size as the three preceding races. *Male*: Above distinctly darker and blue, beneath with the breast a much paler rufous.—*Female*: Also paler below and less brown above; with difficulty separated from the female of *C. pallipes hainana*.

Range: South China to South Annam.

Kuantung, South China	4 ♀ : 67, 67, 68, 69
South Annam	5 ♂ : 70-72 ; mean 71 mm. 3 ♀ : 66, 67, 69

***Cyornis rubeculoides glaucicomans* Thayer & Bangs.**

Cyornis tickelliae glaucicomans Thayer & Bangs, *Bull. Mus. Comp. Zool*, lii, 1909, p. 141 (Tanshuiya, Hupeh: type in Museum Comp. Zool. Harvard examined).

Cyornis anak Robinson & Kloss, *Journ. Fed. Mal. States Mus*, x, 1922, p. 261 (Trang, Peninsular Siam: type examined).

Muscicapa banyumas whitei, Rothschild, loc. cit. infra, p. 292 (partim).

Muscicapa rubeculoides dialilaema Rothschild, *Nov. Zool*, xxxiii, 1926, p. 293 (Yunnan).

Size large, viz. not less than 75 mm. on wing. *Males*: Not quite so shining above as *dialilaema*, breast as in that species, the rufous spreading far up the

throat.—*Females* : Rather paler both above and below than *dialilaema* ; the throat white ; tail and upper tail-coverts with less rufous ; belly broadly white ; under tail-coverts pure white.

Range : Hupeh, Szechuan, and Yunnan in China, apparently wintering in Peninsular Siam.

Tsitunshuya, Hupeh. July (type)	. . . . .	1 ♂ : 80.5
Hsin Shen, Hupeh. April	. . . . .	1 ♂ imm. : 76
Mt. Omei, Szechuan. May	. . . . .	3 ♂ : 76, 76, 78
Ta-tsien lu ling, Szechuan	. . . . .	♂ : 78
Hu-pa-chun. May	. . . . .	♂ : 78
Yangtze Valley. September	. . . . .	3 ♂ : 75, 76, 78
Lotukow, Yunnan. May	. . . . .	2 ♂ : 76 (worn), 79
Milate, Yunnan. March	. . . . .	1 ♂ : 78
Tsi tsoen, Yunnan. September	. . . . .	1 ♂ : 78
Mengtz, Yunnan. March, October, September, June	. . . . .	5 ♂ : 76, 76, 77, 77, 77 2 ♀ : 70, 72
Lichiang Ranges, Yunnan, 9,000–11,000 feet. June,		
July, September, October	. . . . .	4 ♂ : 75, 76, 77, 78
Ponsee, Kakhyeu, Upper Burma. March	. . . . .	♂ : 75
Ayuthia, Central Siam. February	. . . . .	♂ : 78
Koh Lak, Peninsular Siam	. . . . .	♂ : 76
Trang, Peninsular Siam. November, January, February	2 ♂ : 77, 78 ♀ : 77	
Malewun, South Tenasserim. February, December	. . . . .	2 ♂ : 77, 78

It is perhaps rather problematical whether these series represent one species in summer and winter quarters respectively; but allowing for the known variation, we can find no character whatever to separate them.

As the above list shows, we have examined very considerable series of this form from Yunnan, where it appears to occur together with *C. whitei whitei*. The two forms are somewhat difficult to separate, but the present bird is larger with a more shining upper surface and always with more or less black on the chin and upper throat. Females, as always in this group, are variable in tint above, and are only separable from those of allied forms with great difficulty and some uncertainty, but we have seen very few females of this race.

As in other species, there is great variation, as the brightness of the superciliary stripe which in one bird from Mengtz is extremely pale and conspicuous with the bases of the feathers white (*Mus. Comp. Zool. Harvard*, No. 61, 912). Other birds have the dark blue-black patches on the sides of the breast highly developed, in one bird, also from Mengtz, almost meeting.

Species 2.

Male brighter blue above and on throat ; female *blue*, not brown, above.

Cyornis turcosa Brügg.

Muscicapa elegans Temm., *Pl. Col.* 1836, pl. 596, fig. 2 (Sumatra), nec *M. elegans* Less., *Traité Orn.* 1831, p. 391 (type in Leyden Museum).

Muscicapa turcosa Brügg., *Abhandl. Nat. Ver. Bremen*, v, 1877, p. 457 (Borneo: type in Bremen Museum).

Cyornis elegans rupatensis Oberholser, *Proc. Biol. Soc. Washington*, xxxiii, 1920, p. 87 (Rupat Strait, South-East Sumatra; type in United States National Museum: topotype examined).

Cyornis elegans antelia Oberholser, loc. cit. (Long Iram, North-East Borneo: type in United States National Museum: topotype examined).

Male: Much like that of *C. rubeculoides*, but blue of upper surface and throat much brighter, breast less orange, more buffy.—*Female*: Bright blue above; throat and breast rufous buff with no blue. Very different from the female of *rubeculoides*.

Range: The southern part of the Malay Peninsula. Sumatra, generally distributed. Borneo, the whole island.

West Sumatra	3 ♂: 72, 73, 76 1 ♀: 73
South Sumatra	1 ♂: 76
East Sumatra	3 ♂: 73, 75, 75
Malay Peninsula	4 ♂: 72, 73, 76, 77 3 ♀: 68.5, 70, 71
North-West Borneo	3 ♂: 73, 75, 75 2 ♀: 69, 69.5
North-East Borneo	1 ♂: 75 3 ♀: 70, 72, 73
Eastern Borneo, including precise topotypes of	2 ♂: 73, 75
<i>C. e. antelia</i>	4 ♀: 69, 69.5, 70
Sarawak	6 ♂: 73-78; mean 75.3 mm. 8 ♀: 70-74; mean 71.7 mm.
Central Borneo (Niewenhuis and Mjöberg)	4 ♂: 74, 75, 76, 77 2 ♀: 73, 73
South Central Borneo (precise topotypes of <i>C.</i>	1 ♂: 77
<i>turcosa</i> Brügg).	1 ♀: 69

With this considerable series before us, which includes exact topotypes of all the named forms, we find it quite impossible to maintain any subspecies. The characters relied on by Dr. Oberholser to separate East Sumatran and Bornean birds from West Sumatran ones can be found in birds from all the areas. In any event, *C. turcosa* Brügg. is the name for the Bornean bird, those from North, North-East, North-West, South-West, and South Borneo being quite inseparable.

Stone (*Proc. Philad Acad.* 54, 1902, p. 681) considers that the "♂" figure of *Muscicapa cantatrix* (Temm., *Pl. Col.* pl. 226, 1823 (Java)) represented the ♀ of this species, in which case that name would have priority. The female bird figured is certainly that of *C. banyumas* (Horsf.), but the male, though unlike that species, is equally unlike the present bird, and pending the examination of the type, may be left in the synonymy of *C. banyumas*. Moreover, *C. elegans* (*turcosa*) is not known to occur in Java, whence *C. cantatrix* is stated to come.

The name *Muscicapa elegans* Temminck, 1836, is antedated by *Muscicapa*

elegans Lesson, 1831, which is a crested species of the South American family *Tyrannidae*. Brüggeman's *C. turcosa*, 1877, founded on a Bornean bird, is therefore the earliest available name for this species.

Were it not for the fact that the female of this species is blue and not brown we should regard *C. turcosa* as the Malaysian representative of *C. rubeculoides*, the more so as the ranges of the two forms do not overlap.

SECTION II.

The birds which we have assigned to this group appear to be all subspecifically related, while the section as a whole is not very clearly defined from the "*rufigaster*" forms. The species as a whole, however, differs in having the females *all* with more or less bluish upper surface with little or no tinge of brown; with the lores whitish, but not so conspicuously as in the *rufigaster* (*beccariana* section), and the breast paler rusty than in the males. The size is moderate, the maximum wing length being 77 mm.

A single species only.

Species 3.

(a) *Cyornis tickelliae tickelliae* Blyth.

Cyornis tickelliae Blyth, *Journ. Asiat. Soc. Bengal.* xii, 1843, p. 941 (Borabhum, Central India: type in Indian Museum, Calcutta).

Male: Blue of the upper surface somewhat tinged with green, sides of the face, malar region, and extreme point of chin blackish; belly and flanks often suffused with the rufous of the breast, but under tail-coverts always white.—*Female*: Very distinctly blue above, but of a greyer or more glaucous tint than in the male. Lores and region of the eye whitish, often tinged with pale rusty; rufous rusty of the throat and breast paler than in the male with no black point at the chin.

Range: Practically the whole of India west of Calcutta, but not in Sind, and rare in the sub-Himalayan tracts.

As is usual, southern birds tend to be slightly smaller than those from the north; those from Madras and the Malabar coast show an approach to the bluer and darker bird from Ceylon, but can always be distinguished from these.

The differences in size are not sufficient to make it necessary to particularize the birds from all localities.

50 ♂: 71–77; mean 74.2

39 ♀: 69–74; mean 70.2

(b) *Cyornis tickelliae jerdoni* Holdsworth.

Cyornis jerdoni Blyth, *Ibis*, 1866, p. 371 (nomen nudum); Holdsworth, *P.Z.S.* 1872, p. 442 (South Ceylon: type in British Museum examined).

Cyornis tickelliae nesaea, Oberholser, *Proc. Biol. Soc. Washington*, xxxiii, 1920, p. 86 (Ceylon).

Male: Somewhat darker, more ultramarine blue above, with the forehead and superciliaries more purplish than in the typical race. Beneath with the rusty rufous of the breast, throat, and flanks deeper, more sharply defined from the white of the belly.—*Female*: Brighter than the corresponding sex of *C. t. tickelliae*.

Range : The whole of Ceylon from the low country to the higher hills.

16 ♂ : 69-76 ; mean 73.0 mm.

17 ♀ : 67-71 ; mean 69.4 mm.

A pair from Newara ELLIYA are rather larger and distinctly richer coloured than the rest of the series examined ; possibly they represent a montane race.

The correct naming of this form presents certain difficulties. As originally proposed by Blyth, *jerdoni* is a nomen nudum, but a description by Holdsworth, *loc. cit.*, albeit very inadequate and non-differential, appears to validate it for the Ceylon form. *C. t. nesaea* Oberholser must, therefore, be replaced by *C. tickelliae jerdoni* Holdsworth.

The race on average is quite recognizable, though, as noted above, some birds from Madras and the Malabar coast approach it very closely.

(c) **Cyornis tickelliae sumatrensis** (Sharpe).

Siphia sumatrensis Sharpe, *Cat. Birds Brit. Mus.* iv, 1879, p. 451 (Sumatra : but Malacca make : type in British Museum examined).

? *Cyornis rufigastra indochina*, Chasen & Kloss, *Bull. Brit. Orn. Club*, xlviii, 1928, p. 000 (Daban, South Annam).

Rather smaller than *C. t. tickelliae*.

Male : Darker blue above, with forehead and superciliaries brighter deeper blue ; belly pure white, sharply defined from the breast ; sides not at all or only very slightly infuscated, under tail-coverts white.—*Female* : a much greyer blue than the typical female, the blue tint almost absent in very worn specimens, but still quite perceptible.

Range : The greater part of Siam and Southern French Laos. Cambodia, Cochin-China, and South Annam, north of which it grades into a larger, paler form. The Malay Peninsula, south to Malacca. Sumatra.

French Laos	1 ♂ : 70
	1 ♂ : 68
North Siam	3 ♂ : 67, 68, 68
	1 ♀ : 63
East Siam	7 ♂ : 64 (worn), 65, 66, 68, 69, 70, 70
	2 ♀ : 65, 66
Koh Rang Island ¹ (off Cambodian coast)	1 ♂ : 72
	1 ♀ : 68
Cochin-China	1 ♂ : 68
Southern and Central Annam	3 ♂ : 66, 66, 68
	2 ♀ : 65, 65 ²
Peninsular Siam (Koh Lak to Trang)	11 ♂ : 67-71 ; mean 68.8 mm.
	5 ♀ : 65-67 ; mean 65.8 mm.
Koh Samui and Koh Pennan	3 ♂ : 68, 69, 70
	5 ♀ : 66, 66, 67, 67, 67
Perlis	1 ♀ : 69

¹ Paratype of *C. rufigastra indochina* Chasen & Kloss.

² These birds are large and possibly represent an insular race ; at one time we referred them to *C. tickelliae* (*Ibis*, 1915, p. 743), but they are not that form.

Pulan Terutau	3 ♂ : 68, 69, 70
	2 ♀ : 69, 70
Kelantan	1 ♂ : 69
Patani	1 ♂ : 68
Pahang	1 ♀ : 64
Perak	1 ♂ : 69
	1 ♀ : 66
Selangor	2 ♂ : 68, 66
[Sumatra] Malacca ? Type.	1 ♂ : 68

This race has been recorded by Messrs. Beaufort and de Bussy from the east coast of Sumatra. We have examined their specimen, and there is no doubt as to the identification, so that there is a possibility that the locality ascribed to the type is after all correct, the more so as the form has not otherwise been obtained in the settlement of Malacca.

It is curious that though this form is very common on the east side of Peninsular Siam (Koh Lak and Hat Sanuk) we can find no specimens in the British Museum from any part of Tenasserim that can be referred to it. Those from "Southern and Central Burma to Toung-hoo and Karenni" referred to by Baker (*Faun. Brit. Ind. Birds* (2nd ed.), ii, 1924, p. 236) belong to *C. whitei* or other species.

This subspecies, and the manner in which it has been dealt with by ourselves and by Messrs. Chasen and Kloss, affords an admirable illustration of the difficulties in which the continuous sub-division of species of wide range, however well justified by the facts, is involving the systematist and the science of Ornithology in general. The material worked on in both cases has been very extensive, both in quantity and in geographical range, so that errors due to these causes may be considered as eliminated, the only factors remaining being the personal equation, which in birds like the present species is small, and the inherent difficulties now to be mentioned.

C. sumatrensis, as originally described from the extreme south of its range, is a quite clearly defined race, which by many would be accorded full specific rank, the more so as any direct physical connection with *C. tickelliae* does not appear to exist.

The form from Tonkin, at the extreme north-east of the range of *C. sumatrensis*, which we have indicated later, is likewise equally far removed from typical *C. sumatrensis* and is showing evidence of a return towards *C. tickelliae* so far as the male is concerned, but is very different when females are compared. It is the extreme form of the race described by Chasen and Kloss from Daban in South Annam, some hundreds of miles further south, and though deserving of a name when compared with *C. tickelliae* and true *C. sumatrensis*, does not merit still further subdivision if *C. r. indochina* is admitted.

At the same time, as shown in our lists, we do not consider the birds from the specified type locality of *C. r. indochina* sufficiently distinct to be separated from Malayan *C. sumatrensis*, but are logically unable to name the Tonkin race, which possesses no greater distinctive characters from the Annam birds than they do from the Malayan ones;—that is to say, expressed in symbols, the amounts A - B and B - C are not sufficient to constitute two subspecies, though (A - B) + (B - C) would be sufficient for one.

The difficulty is one of perpetual occurrence, which is bound to increase largely in the future with more intensive investigation of wide-ranging species. At present it is largely burked, either by the creation of an excessive number of poor subspecies or by the ignoring of ones that are quite justified. How the dilemma may be avoided is hard to see, unless by mathematical treatment and the specification of a standard deviation, though many of the factors concerned in bird variation do not admit of quantitative expression.

In species of wide range, especially those existing under natural conditions that do not vary greatly, if we postulate a geographical centre, it is usual to find that both as regards area and numbers a very large proportion of the species can be enclosed within the ring fence of one of the subspecies, within which the individuals composing it are very constant to one type. On the other hand, there is great variation in several directions on the periphery, though this variation affects but a small proportion of the whole species.

The tendencies of the various subspecies may be compared to that of bodies on the surface of a revolving wheel; those near the hub possess little kinetic energy, which increases regularly towards the circumference; i.e. in order to maintain existence at all, members of a species residing in an area where the conditions of life are departing from the optimum must possess for that species continuously greater powers of variability, those not possessing those powers or varying in an unfavourable direction being rapidly eliminated. This theory perhaps explains the undoubted fact that forms far removed in space from the centre of the species and from each other may nevertheless so closely resemble each other as to be practically indistinguishable. Further, let some cause remove the central connecting links and we have the phenomenon of discontinuous distribution, a stumbling-block to many, simply accounted for.

(d) **Cyornis tickelliae lampra** Oberholser.

Cyornis lanyumas lampra, Oberholser, *Bull. U.S. Nat. Mus.* xxviii, 1917, p. 35 (Anamba Islands: type in United States National Museum).

Male: Resembling *C. t. sumatrensis*, but larger, with more black on the chin.—*Female*: Rather lighter on the breast.

Range: Anamba Islands, South China Sea, where it is apparently very common.

4 ♂: 73, 74, 75, 79

3 ♀: 69, 71, 72

From the characters of the female, this race must certainly be regarded as a development of the continental form *C. tickelliae*. It does not, in our opinion, belong to the *rufigastra* "formen kreis" with which Dr. Stresemann has associated it and the parent form, nor for the same reason do we consider it at all closely related to *C. philippinensis* with which it has been compared by its describer.

We owe the opportunity of examining the above birds, a part of the topotypical series, to the kindness of the authorities of the United States National Museum. One of us has also seen a small series collected by Mr. F. N. Chasen of the Raffles Museum, Singapore, in the same islands.

(e) Cyornis tickelliae subsp.

Male : Dull blue above, beneath with the throat and breast very pale rusty buff, paler than in the typical race or in the southern form, *t. sumatrensis* Sharpe. Line of division between the buff of the breast and white of the belly less defined than in the latter race. Size perhaps rather larger than *sumatrensis*, smaller than *tickelliae*.—*Female* : Much as in *sumatrensis*, but breast very much paler ; less blue above than *tickelliae*.

Specimens examined : Seven, 4 ♂, 3 ♀ from Kon-tan and Dak-to, Tonkin, and Lao Bao, North Annam.

4 ♂ : 70, 70, 69, 66

3 ♀ : 66, 66, 68

There is not the slightest doubt that these birds represent a race of *tickelliae*, quite distinct from the more southern form *sumatrensis*, but closer to the continental Indian bird *C. t. tickelliae* Blyth. The ♂ bird from Lao Bao in Annam is, as might be expected, sometimes intermediate between this form and *C. t. sumatrensis*, it is also the smallest (wing 66 mm.). For the reasons given above, it is, however, inadvisable to name the race. Should this, however, be done, the Tonkin birds will have to be regarded as an extreme form of *C. r. indochina* Chasen. & Kloss, which will have to be reinstated and whose range will cover the whole of Indo-China and the Malay Peninsula north of about 9° N.

SECTION III.

Small birds, with the wing under 76 mm., sexes alike without any blue and closely resembling the females of *C. rubeculoides*. Plumage unusually soft and silky.

*Species 4.**(a) Cyornis poliogenys poliogenys* Brooks.

Cyornis poliogenys Brooks, *Stray Feath.* viii, 1879, p. 469 (Sikhim Terai: type missing).

Siphia cachariensis, Madarasz, *Zeitsch. für Gesamt. Orn.* i, 1884, p. 51 (pl. i, fig. 2) (Dilkousha, Cachar).

Sexes alike : With the head greyer than the back, which is duller olive brown ; rump and edges of the tail feathers brighter ; throat whitish, distinct from the rusty buff breast ; lores and patch in front of eye whitish.

Range : Along the base of the Himalayas from Nepal eastwards, at low elevations. Khasis, Cachar, Tipperah, and Manipur.

There are few reliably sexed specimens available, but the large series examined have a wing of from 70–76 mm., the largest being males and the smallest females.

The bird described by Madarasz, from Cachar, of which there are exact topotypes in the British Museum, shows an approach to the next subspecies, but is very much closer to the typical form with which we have retained it. Madarasz' figure, as noted by Sharpe, is quite unrecognizable (*P.Z.S.* 1886, p. 354).

(b) Cyornis poliogenys saturator Rob. & Kinnear.

Bull. Brit. Orn. Club, xlviii, 1928, p. 43 (Dibrugarh, Upper Assam: type in British Museum).

Sexes alike : Darker than the typical race and differing in having the orange buff of the breast carried up almost to the chin so that there is no perceptible

pale throat. Colour above browner, less greyish, the cap not differentiated from the rest of the upper parts. Edges of the tail feathers and the greater upper tail-coverts rather more chestnut.

Range : Miri and Naga Hills. Dibrugarh and Sibsaghar, Upper Assam.

1 ♂ : 74
4 ♀ : 68-73
unsexed 6 : 66-72 mm.

Cyornis olivaceus Hume (*Stray Feath.* v. 1877, p. 333), from South Tenasserim, which occurs also in the Northern Malay Peninsula, Sumatra, Borneo, East and West Java, appears to us certainly to be specifically and possibly generically different from *C. poliogenys*. It has been placed in the genus *Anthipes*, both by Oates and by Baker, the latter of whom regards it as a subspecies of the present bird. We do not discuss it here.

SECTION IV.

Small birds with wing never exceeding 75 mm. Bill rather large. Sexes markedly different. *Male* : With shining blue band across forehead ; chin with no or very little black ; middle of belly and under tail-coverts white.—*Female* : Brownish above, lores dusky white, upper tail-coverts and base of tail-feathers edged with rufous chestnut. Throat and breast rufous, more so than in the corresponding sex of *rubeculoides* races.

A single species only.

Species 5.

(a) *Cyornis whitei whitei* Harington.

Cyornis whitei Harington, *Ann. Mag. Nat. Hist.* (8), ii, 1908, p. 245 (Watau, Bhamo district : type in British Museum examined).

Muscicapa banyumas whitei Rothschild, *Nov. Zool.* xxxiii, 1926, p. 292.

Male : Very bright above, but not shining blue ; sides not much infuscated.—*Female* : Rather greyish brown above ; throat and breast paler rufous buff.

Range : Upper Assam, Upper Burmah to French Laos, Yunnan, and Tonkin, and through the Shan States south to Karen-nee and North Tenasserim.

Vicinity of Bhamo. February and April	2 ♂ : 72, 72 (type) 4 ♀ : 68, 69, 71
Ponsee, Kahkien Hills, and Upper Burma (Anderson coll.). January and April	1 ♂ : 72 1 ♀ : 69
Margherita, Upper Assam. December	2 ♂ : 72, 73
Kauri Kachin Districts. June	1 ♂ : 73
Hokow, Yunnan. March	2 ♂ : 71, 72
Tengyueh, West Central Yunnan. April, July, November	5 ♂ : 71, 71, 73, 73, 73 2 ♀ : 70, 72
Loukauchai, Yunnan. April, March, April, July	1 ♂ : 73 1 ♀ : 71
Mengtsh, South Yunnan. September, October	11 ♂ : 70-74 ; mean 72.2 mm. 11 ♀ : 69-71 ; mean 70.0 mm.
Tche Tsouen, Yunnan. September	3 ♂ : 71, 72, 74 ♀ : 71

French Laos. January, February	2 ♂ : 72, 70
Tonkin. March, May	2 ♂ : 71, 70
South Shan States. April, May, July	4 ♂ : 71, 73, 73, 73
	6 ♂ : 68, 69, 69, 69, 71, 72
Karen-nee. January, March	3 ♂ : 71, 72, 72
Taho Plateau, North Tenasserim. January	2 ♂ : 72, 72

The type is in rather worn plumage, and the pale bright forehead is therefore in more striking contrast to the rest of the plumage, but the whole series listed above must, we think, be considered to belong to a single subspecies, though there is variation in the amount of white on the under-surface and the tint of blue above.

Many authors have considered birds from Karen-nee and the South Shan States to be referable to *C. tickelliae*, an identification that is negated by the colour of the female, which does not resemble the male. In our view the typical *C. tickelliae* does not occur east of the Irawadi, though it is replaced in Malaya and southern Siam and Indo-China by the allied *S. t. sumatrensis*, and *S. t.* subsp., so that the range is discontinuous, though there is a connecting insular link in *S. t. lumpra* from the Anambas.

(b) ***Cyornis whitei caeruleifrons* Baker.**

Cyornis magnirostris caeruleifrons Baker, *Bull. Brit. Orn. Club*, xxxix, 1918, p. 8 (Peninsular Siam : type in British Museum examined).

Male : Much as in *C. w. whitei*, but the back darker, sides as a rule much infuscated and rusty colour of breast deeper.—*Female* : More brownish above and deeper coloured beneath than in the typical race.

Range : Tenasserim, south through Peninsular Siam to the mountains of the Malay Peninsula.

Tounghya, Tenasserim	4 ♂ : ? 75, 74, 72, 72
Weppitan, Tenasserim	1 ♀ : 70
Choringthanung, South Tenasserim	1 ♀ : 67
Pakehan, Peninsular Siam	1 ♂ : 71
Klong Ban Lai, Peninsular Siam	3 ♂ : 72 (type), 68, 69
	1 ♀ : 70
Khao Luang, Peninsular Siam, 3,300 feet	1 ♂ : 71
Batang Padang, South Perak, 1,500 feet	2 ♂ : 70, 71
	3 ♀ : 68, 69, 70
Semangko Pass, Selangor, 2,700 feet	1 ♂ : 70
	2 ♀ : 69.5, 69
Ginting Bidei, Selangor, 2,300 feet	5 ♂ : 70-72
	5 ♀ : 67-70

After much consideration and comparison of the large series indicated above we are forced to consider that both this form and that from Borneo described below stand merely in subspecific relation to *C. whitei*, and that there is no other older species to which the group can be attached. They cannot, we think, be referred to *C. banyumas*, which has a totally different female.

(c) **Cyornis whitei montana** subsp. nov.

Siphia caeruleata Büttikofer (nec Bp.), *Notes Leyden Mus.*, xxi, 1900, p. 000 (Liang Koebang Mountains, Central Borneo).

Male: Much darker blue above than *C. w. caeruleifrons*, Baker, the bright forehead and superciliaries not so conspicuous. Rump not brighter than back. Below almost uniform ferruginous, including the under tail-coverts.—*Female*: Distinctly darker above, with less rusty chestnut on the rump and base of tail-feathers.

Type: Adult male. Mt. Liang Koebang, 2,000 feet, Central Borneo. Büttikofer coll. In Tring Museum.

Range: Mountains of Borneo at moderate elevations.

Dulit	1 ♂ : 73
Kinabalu	1 ♀ : 67, 70
Liang Koebang (Central Borneo)	1 ♂ : 72 (type in Tring Mus.)
	1 ♀ : 69

The Bornean race is evidently closely allied to that from the Malay Peninsula. It is apparently a submontane form, widely distributed in the island, but not common.

SECTION V.

Rather small birds, wing never exceeding 80 mm., rarely so much. Sexes nearly alike. Dark blue above, bright forehead and superciliaries not conspicuous; beneath rusty, belly sometimes whitish. *Male* with the extreme point of chin black.—*Female* with the rufous of the under surface rather paler, reaching the point of the chin, with a clear or rusty white loreal spot.

A single species with many local races.

Cyornis rufigaster (Raffles).

? *Muscicapa rufigaster* Raffles, *Trans. Linn. Soc.* xiii, 1822, p. 312 (Sumatra).

This name, which is the oldest available for the section, rests solely on Raffles' brief description and on his coloured drawing preserved in the India Office Library which we have examined. As Hartert has pointed out (but cf. *postea*, p. 250), no actual specimens from Sumatra, referable with certainty to the group, is extant in any museum, nor do we think it probable that on the west coast of Sumatra, Sir Stamford Raffles would have been likely to have obtained examples of this group which, over the whole of its very extensive range, is an inhabitant of mangrove swamps and the banks of tidal rivers. Raffles' figure, though good, does not enable us to identify the bird so exactly as to differentiate it from the somewhat similar male of *C. caeruleata*, a form that we know to exist in Sumatra and to occur at low elevations on the west coast.

We have, therefore, pending the receipt of actual specimens from Sumatra,¹ abandoned the use of Raffles' name and adopted that of Salvadori, which Stresemann has shown to be applicable to the Bornean form of this bird.

¹ Since the above was written we owe to the kindness of the authorities of the United States National Museum the loan of an adult male specimen of a *Cyornis* collected by Dr. W. L. Abbott on the Yoteman River, South-East Sumatra. This locality is in the immediate vicinity of the Rhio Archipelago and far removed from the presumed locality of Raffles' bird. We think it best to regard it as belonging to *C. r. calocephala* with which, allowing for the known variation in blue tint of specimens of the genus within the subspecies, it sufficiently agrees. We, therefore, continue to abandon the use of the name *rufigaster* for any form of this species.

We have, as the attached list shows, examined very considerable series of this bird from the Malay Peninsula, Borneo, and neighbouring islands, and with the exception of those inhabiting a small enclave in the neighbourhood of the Rhio Archipelago are unable to recognize with certainty any local races. Birds from the North-East of Borneo and from Palawan show, it is true, an approach to *C. philippensis*, itself by no means a strongly marked form, but unless confirmed by very much larger material than is at present available, we do not think it advisable to maintain either *C. b. litoralis* or *C. b. rhizophorae*.

Species 6.

(a) **Cyornis beccariana beccariana** (Salvad.).

- Siphia beccariana* Salvad. (nec auct.), *Atti R. Acad. Torino*, iii, 1868, p. 533 (Sarawak: type in Turin).
Cyornis frenatus Hume, *Stray Feath.*, ix, 1880, p. 114 (Jeram, Selangor: type in British Museum examined).
Cyornis hosei Finsch, *Notes Leyden Mus.*, 23, 1901, p. 48 (Borneo).
Cyornis litoralis Stresemann, *Ornith. Monatsb.*, xxxiii, 1925, p. 50 (Palawan: type in British Museum examined).
Cyornis rhizophorae Stresemann, loc. cit. supra (North-West Java coast: type in coll. Bartels Amsterdam).

Range: From Penang to the South of Malay Peninsula: Singapore Island, Labuan. The whole of Borneo, Palawan, western Java.

Penang Island	1 ♂: 72
Perak coast	3 ♂: 71, 71, 72 1 ♀: 72
Selangor coast	2 ♂: 72, 73 4 ♀: 68, 68, 69, 70
Singapore Island	1 ♂: 73
Java (ex Leiden Mus.)	1 ♀: 69
Labuan	12 ♂: 72-77; mean 74.2 mm. 6 ♀: 68-73; mean 70.0 mm.
North-West Borneo	4 ♂: 73, 73, 75, 76 1 ♀: 70
North-East Borneo	1 ♀: 67
Sarawak	4 ♂: 71, 71, 75, 75 1 ♀: 70
Southern Borneo	4 ♂: 72, 73, 74, 74
Palawan	3 ♂: 71, 72, 73

In this very considerable series it is seen that Malay Peninsula birds are, on the whole, rather smaller. Mainland Bornean birds are rather more rufous beneath. The majority of Labuan birds are whiter on the middle of the belly and have a tendency to a lighter throat. The single bird from Sandakan is very pale below both on throat and belly. The three specimens from Palawan (*litoralis*, Stresemann) are certainly paler above with a brighter front and superciliaries. Possibly they are distinct, and may not even belong to the group, but the point cannot be decided, until a larger series, including females, is available.

(b) **Cyornis beccariana karimatensis** Oberholser.

Cyornis banyumas karimatensis Oberholser, *Proc. U.S. Nat. Mus.* 64, 1924, Art. 22, p. 3 (Karimata Islands, South Borneo: type in United States National Museum).

Described from a single male specimen of a very deep colour below with a wing of 78 mm., which measured by Mr. Oberholser's method is probably equivalent to 80 mm. by ours, which is larger than any specimen of the group that we have seen.

Range : Karimata Islands (off S.W. Bornean coast).

(c) **Cyornis beccariana calocephala** Oberholser.

Cyornis banyumas calocephala Oberholser, *Proc. Biol. Soc. Washington*, 33, 1920, p. 86 (Banka: type in United States National Museum).

A very saturate form, deeper coloured below than any other race, except perhaps the above *C. b. karimatensis*. *Female* rather darker above than in the allied races.

Range : Banka, Rhio-Lingga Archipelago, and the adjacent coast of Sumatra.

Lingga Island	1 ♂ : 75 mm.
Bintang Island	1 ♂ : 74.5 mm.
Kateman River, South-East Sumatra.	1 ♂ : 74 mm.
Tanjong Bakong, Banka	1 ♀ : 68 mm. (U.S. Nat. Mus. 180607).

Though more or less surrounded by *beccariana* this form, if we have correctly associated the Rhio-Lingga birds with the Banka race described by Mr. Oberholser, seems sufficiently distinct. The differences have long been noted by Dr. Hartert and others. Dr. Oberholser does not mention the female in his description of *calocephala*. The above bird, compared with the type of *C. frenatus* Hume, is very slightly darker above with the bill a little shorter.

(d) **Cyornis beccariana simplex** Blyth.

Cyornis simplex Blyth, *Ibis*, 1870, p. 165 (Borneo errore: substitute Luzon, Philippines: type in Leyden Museum).

Muscicapa blythi Giebel (nec Rothschild), *Thesaurus Orn.* ii, 1875, p. 631.

Cyornis philippinensis, auct. (partim).

Distinctly paler blue above in both sexes, generally with the forehead and superciliaries brighter blue than in *C. b. philippinensis* from the southern islands. Beneath with practically no indication of white on the chin and upper throat in the male. Amount of white on belly variable; under tail-coverts nearly always pure white.

Range : Northern Philippine Islands; Luzon and Marinduque.

Luzon	16 ♂ : 72-77; mean 74.8 mm.
	13 ♀ : 69-72; mean 70.7 mm.
Marinduque	3 ♂ : 73, 74, 78
	2 ♀ : 72, 73

This form which, as in all the other races, varies much in the intensity of the blue colour of the upper parts, has a very wide range in Luzon and shows considerable general variation. A pair from the Taal Volcano in the United States National Museum, collected by Dr. Paul Bartsch, are very richly coloured

below, with the rufous of the breast, extending strongly over the flanks; the male is also extremely bright blue above. They are, however, nearly matched by other specimens. The Marinduque birds are deeper coloured below and show, as might be expected, gradation towards *C. b. mindorensis*. On the whole, however, they are best placed with this form.

(e) ***Cyornis beccariana philippinensis* Sharpe.**

Cyornis philippinensis Sharpe, *Trans. Linn. Soc.* (new series), i, 1877, p. 325 (Panay: type in the British Museum examined).

Rather darker above in both sexes, with only slight indications of bright forehead and superciliaries. Rusty rufous of under surface usually rather pale. Throat below the chin with a distinct whitish area; middle of abdomen and under tail-coverts white.

Range: The whole of the Philippine group, except Mindoro, Luzon, and Marinduque.

Panay 1 ♂: 74 mm.
 1 ♀: 73 mm.

The female collected by Prof. J. B. Steere is one of the types of the species.

Leyte	1 ♂: 78
Negros	1 ♂: 76
	1 ♀: 75
Samar	1 ♂: 76
	2 ♀: 68 (moult), 73
Siquijor	1 ♂: 77
Dinagat	1 ♂: 78
Mindanao	8 ♂: 71-76 mm.; mean 74.0
	6 ♀: 70-74; mean 72.1
Basilan	3 ♂: 76, 72, 76
	2 ♀: 70, 72
Sulu Islands, Sibutu, Siassi, Sulu, Bongao	2 ♂: 77, 73
	5 ♀: 70, 71, 71, 72, 73

Though in the aggregate this series is considerable, there are not very many specimens available from any one island, with the exception of Mindanao. At first sight a series from Davao, in the south of that island, collected by Mr. Walter Goodfellow, would appear separable by their rather paler colour below, the greater extent of the white on the belly, the more distinct whitish area on the upper throat in both sexes. In some specimens from this island, however, this is reduced in extent, and is matched by birds from the other islands. On the whole, therefore, we consider it safer to maintain the whole of the birds from the southern and central Philippines under *C. b. philippinensis* Sharpe.

It should be observed that Finsch (*Notis Leyden Mus.* xxiii) states that the type of *C. simplex* Blyth (*Ibis*, 1870, p. 165), which is in Leyden, can be exactly matched by a bird from Iolo, Sulu Islands, from which locality we have specimens before us. Blyth's bird was erroneously ascribed to Borneo, and if the name is to be used at all for a Philippine bird, we think that it is better attached to the northern Philippine bird which has no name. Luzon is a much

more likely island, for Frank the dealer, from whom the Leyden Museum purchased the bird, to have obtained specimens from in the sixties, than any of the southern or central Philippines.

(f) **Cyornis beccariana mindorensis** Mearns.

Cyornis mindorensis Mearns, *Philipp. Journ. Sci.* ii, A, 1907, p. 356 (Mindoro: type in Philippine Acad. Sci. Manila).

Above, without marked pale forehead or superciliaries, dark blue, somewhat brighter on the rump and the angle of the wing. Beneath, without white below the black of the throat, flanks strongly infuscated with the colour of the breast, under tail-coverts generally, but not always tinged with pale buff.—*Female* as the male, but rather paler above, lores rusty white.

Range: Mindoro Island.

5 ♂: 74, 73, 73, 73, 73
4 ♀: 69, 70, 71, 72

This form, which seems distinct from the other Philippine races, is an extension northwards of the Bornean race, from which, however, it can be regarded as distinct. It is certainly different from that inhabiting either Luzon or Mindanao.

SECTION VI.

With large coarse bills. Males blue above, beneath throat and breast rufous, belly and under tail-coverts white; black chin spot absent or very inconspicuous. Females brownish above with pale lores and a more or less conspicuous eye-ring; beneath much as in the male, but duller.

Species 7.

Male: Dark blue above with paler forehead and superciliaries, shoulder patch and rump not conspicuously brighter. Beneath with no or hardly any black on chin; throat and breast rusty, not paler in the former, a patch of dark blue on each side of the breast, flanks distinctly infuscated. Middle of the belly and under tail-coverts white.—*Female*: Greyish brown above, more ferruginous on the wing-coverts; rump, edges of primaries and tail-feathers dark chestnut. An indistinct ferruginous ring round the eye, pale lores, not very noticeable; beneath as in the male.

Cyornis magnirostris Blyth.

Cyornis magnirostris Blyth, *Journ. Asiat. Soc. Bengal*, xviii, 1849, p. 814 (Darjeeling: type in Indian Museum, Calcutta).

Range: Nepal, Sikhim, and along the base of the Himalayas to Eastern Assam. The Taho Plateau in North Tenasserim, the extreme south of that province, Peninsular Siam, and the island of Junk Zeylon in northern Malaya.

? Nepal ¹	. . . . .	2 ♂:
Sikhim	. . . . .	10 ♂: 79-82; mean 80.3
		3 ♀: 77-80; mean 78.0
Cachar, Assam, etc.	. . . . .	3 ♂: 79, 81, 82
		3 ♀: 77, 78, 78

¹ These specimens are in the Brian Hodgson collection in the British Museum in extremely bad condition and possibly not from Nepal.

Tahol Plateau, North Tenasserim	1 ♀ : 75
Extreme South Tenasserim	4 ♂ : 78, 79, 80, 80
	3 ♀ : 76, 76, 77
Trang, Peninsular Siam	1 ♂ : 76
Junk Zeylon	1 ♂ : 78

A bird from Laynah, Central Tenasserim, not quite adult, and in poor condition appears to be this species, but is exceptionally small. Wing 70 mm.

This species, which appears to be very constant over the whole of its range and not divisible into local races, can generally be recognized by the pale patch on the lower surface of the mandible in both sexes. The specimens from South Tenasserim and Peninsular Siam were all taken between December and March, and are possibly winter visitors only.

Species 8.

Bill like that of *C. magnirostris*, but rather more compressed. *Male* : Above rather vivid blue, but not shining ; pale forehead and superciliary stripes well marked. Below with little or no black on chin, which is slightly paler than the throat and breast. Belly pure white, sharply defined from the breast, under tail-coverts also white.—*Female* : Very different from the male. Head greyish, lores dark, a narrow rusty white stripe on forehead, running over the lores and expanding into a broad whitish ring round the eye, incomplete in front and behind. Upper surface greyish brown, upper tail-coverts and edges of the tail feathers cinnamon chestnut. Throat and breast deep rusty rufous, rather brighter than in the male. Rest of under parts pure white, sharply defined.

Cyornis lemprieri (Sharpe).

Siphia lemprieri Sharpe, *Ibis*, 1884, p. 319 (Palawan: type in British Museum examined).

Cyornis ramsayi, Blas, *Ornis*, iv, 1888, p. 308 (Palawan: type in Brunswick Museum).

Range : South Philippine Islands (Palawan, Balabac, and Calamianes).

Palawan	17 ♂ : 73-79 ; mean 76.1
	10 ♀ : 71-74 ; mean 72.2
Balabac	7 ♂ : 76-80 ; mean 77.9
	4 ♀ : 72-73 ; mean 72.5
Calamianes	1 ♂ : 76

Balabac birds, as the measurements show, are slightly larger, are a little paler above, with the angle of the wing brighter blue ; the throat also is slightly paler, but the differences are not sufficient to merit a name.

The species has no near allies, and for the present must be recorded under a binomial appellation. It is not really related to *C. magnirostris*, nor is it at all allied to *C. philippinensis*, as surmised by Dr. Sharpe.

SECTION VII.

Moderate-sized species with the wing not exceeding 80 mm. Bill rather broad and depressed, slightly hooked. Feet rather strong for the genus. Females variable, on some forms approaching the males in coloration, but always with rather pale lores and perioocular ring.

Species 9.

We consider that on account of the characters of the females it is best to keep the Javan birds as a distinct species, separate both from the birds inhabiting Borneo and the Asiatic mainland on the one hand, and from the Celebesian forms on the other.

The species varies over the whole length of the island birds from the extreme east and extreme west, being certainly subspecifically distinct. Unfortunately the province of Banyumas, from which Horsfield obtained his type, harbours birds which are somewhat intermediate.

It would, of course, be feasible to regard the birds from the greater part of the island west from Banyumas, to the east of the Preanger Regencies as belonging to the typical form, those west thereof being separated as *C. banyumas cantatrix* (Temm.), while we have recently named the extreme eastern bird, *C. banyumas limitans*. The figures and descriptions of *C. b. cantatrix* are so bad and have been the cause of so much ambiguity that for the present at any rate we prefer to recognize only two forms as occurring in Java.

(a) Cyornis banyumas banyumas (Horsf.).

Muscicapa banyumas Horsf., *Trans. Linn. Soc.* xiii, 1821, p. 106 (Province of Banyumas: type in British Museum examined); fig. id. *Zool. Res. Java*.

Siphia banyumas banyumas Hartert, *Nov. Zool.* viii, 1901, p. 53, pl. vi, fig. 3.

Male: Bright blue above, with a shining pale blue forehead, and superciliaries; chin and fore-throat black, rest of under surface deep rufous, only slightly paler on the middle of the belly; under tail-coverts rusty.—*Female*: Lores and periorcular region pale buffy white, the feathers of the lores with darker tips. Upper surface greyish brown, the wings more fulvous brown with pale edges to the primaries. Tail dull rusty brown; under surface deep rufous.

Range: Java, from Banyumas, westwards to the shores of the Sunda Straits, usually on the hills at moderate elevations up to 5,000 feet. Among the mangroves of the flat north-west coast, replaced by a form of *C. beccariana* (q.v.).

West Java :

Tjiomas	1 ♂ : 74
Wynkoops Bay	1 ♂ : 78
Buitenzorg	2 ♂ : 78, 76
	1 ♀ : 74
Gedeh Volcano	2 ♂ : 74, 75
	2 ♀ : 70, 73
Near Garoet	3 ♂ : 72, 74, 77

Central Java :

Karang Boelang	4 ♂ : 73, 73, 75, 75
	2 ♀ : 72, 72

East Java :

Banyumas (type of species)	1 ♂ : 75
"Java"	4 ♂ : 75, 76, 77, 79
	2 ♀ : 72, 72

(b) **Cyornis banyumas limitans** Rob.

Robinson, *Bull. Brit. Orn. Club*, xlviii, 1927, p. 44 (Tamansari, East Java).

Male : With the light tint on the forehead and superciliaries far less pronounced than in the typical form, rufous of the under surface paler, the middle of the belly white, under tail-coverts also pure white.—*Female* : Above paler and greyer than the typical female. Below lighter and more rufous, less rusty red. Middle of the abdomen and under tail-coverts white.

Range : Extreme Eastern Java.

Ardjoeno Voleano, 3,000 feet	1 ♀ : 71
Tamansari, 1,400 feet	2 ♂ : 75 (type), 74
	1 ♀ : 71
Badjoelmati	1 ♀ : 72

It is extremely probable that this form will also be found to occur in Bali. The Bali Straits do not in very many cases appear to be a faunal barrier.

Species 10.

Cyornis omissa.

In view of the fact that the females of the two forms are so widely different, we do not think it desirable to regard this Celebes bird as a subspecies of the Javan *C. banyumas*, though admittedly the males are very similar.

(a) **Cyornis omissa omissa** (Hartert).

Siphia omissa Hartert, *Nov. Zool.* iii, 1896, p. 171 (Indrulaman, South Celebes: type in Tring Museum examined).

Siphia banyumas Meyer & Wiglesw. (nec Horsf.), *B. Celebes*, i, 1898, p. 368, pl. xiv, fig. 1.

Male : Darker and duller above than *C. banyumas*, especially on the crown. Beneath deep rusty rufous, richer on the breast, under tail-coverts rufous buff.—*Female* : Very different from that of *C. banyumas*, somewhat pale blue above; loreal streak pale rusty white; beneath paler than in the male.

Range : Throughout Celebes, almost entirely on the hills. South Celebes.

Indrulaman (including the type)	3 ♂ : 75, 77, 79
	♀ : 72, 73
Bonthain Peak, 4,000–6,000 feet	3 ♂ : 77, 78, 81
Central Celebes	1 ♂ : 75
	♀ : 72, 74
North Celebes	4 ♂ : 72, 73, 73, 75
	2 ♀ : 71, 71

There seems to be much variation in size in this species, those from high elevations in the south of the island having a longer wing, but we cannot discern any other differences.

(b) **Cyornis omissa peromissa** Hartert.

Cyornis banyumas peromissa Hartert, *Nov. Zool.* xxviii, 1920, p. 491 (Saleyer Island: type in Tring Museum examined).

Like *C. o. omissa*, but slightly smaller and distinctly paler, above and below in both sexes. Loreal streak in the female rather more rufous and carried further back over the eye.

Range : Saleyer Island, south of Celebes.

3 ♂ : 72, 72, 73

♀ : 68, 69

(c) **Cyornis omissa djampeana** (Hartert).

Siphia djampeana Hartert, *Nor. Zool.* iii, 1896, p. 172 (Djampea Island: type in Tring Museum examined); Meyer & Wiglesw., *B. Celebes*, i, 1898, p. 371, pl. xiv, fig. 3.

Male : Like that of *C. o. omissa*, but with the sides of the head and neck very black, this colour much developed on chin, which is bordered below by white, broader on the middle of the throat.—*Female* : Like the male, but the rufous colour beneath apparently rather deeper, the *black on the chin present*, but not bordered by white.

Range : Djampea Island, south and east of Celebes.

6 ♂ : 77–81 ; mean 79·3

4 ♀ : 74–75 ; mean 74·5

One male has the white on the throat rather more extensive than in the rest of the series. Immature birds are paler beneath with black edges to the feathers, above mottled with buffy spots ; lores pale ; wings and tail blue.

(d) **Cyornis omissa kalaoensis** (Hartert).

Siphia kalaoensis Hartert, *Nor. Zool.* iii, 1896, p. 172 (Kalao Island: type in Tring Museum examined); Meyer & Wiglesw., *B. Celebes*, i, 1898, p. 371, pl. xiv, fig. 3.

Male : Like that of *C. o. djampeana*, but with the rufous beneath very much paler and the white on the throat very much more extensive, spreading well over the breast.—*Female* : With the black on chin bordered by white, almost exactly resembling the *male* of *C. o. djampeana*.

Range : Kalao Island, south-east of Celebes, between that island and Flores.

6 ♂ : 76–78 ; mean 76·7

2 ♀ : 71, 72

The last two forms would by many ornithologists be accorded full specific rank, but they are obviously derived from *C. o. omissa*, though variation from the parent form has been in the opposite direction from that in the Saleyer bird. The fact that the females have the chin markedly black like the male is unique in the genus. The first primary is longer than in most forms.

SECTION VIII

Sexes very different. *Males* : Shining blue above with or without much black on throat.—*Females* : Mostly rich brown, rufous chestnut in parts.

The two species of this group, which is confined to Borneo, seem quite distinct from each other and show no signs of intergradation.

Species 11.

Cyornis superba Stresemann.

Cyornis superba Stresemann, *Ornith. Monatsb.* xxxiii, 1925, p. 52 (Penrisen, Sarawak; type in Dresden Museum).

Cyornis beccariana auct. (nec Salvadori).

Male : Upper surface shining cobalt blue, middle of the crown and sides of the head black ; primaries and outer tail-feathers black, the outer webs edged

with blue. Beneath rufous up to the extreme point of chin.—*Female* : Above brown, slightly greyer on the head ; rump, tail-coverts and tail rich rufous chestnut. Beneath rufous buff, middle of the belly whitish.

Range : Borneo, except apparently the eastern side, generally at moderate elevations (2,000–5,000 feet).

Lawas River, North-West Borneo	1 ♂ : 72
“ Borneo ”	1 ♂ : 71
Sarawak	1 ♂ : 73
	1 ♀ : 70
Tagora, Sarawak	2 ♂ : 73·5, 74
Batu Song, Baram, Sarawak	2 ♂ : 72, 75
	2 ♀ : 68, 70
Mt. Dulit, Baram, Sarawak	3 ♂ : 71, 72, 76
	2 ♀ : 69, 72
Gunung Trahu, Sarawak	1 ♂ : 70
Penrisen, Sarawak	2 ♂ : 72, 72
	2 ♀ : 69, 74
Mt. Kalulong, Sarawak	1 ♂ : 73
	1 ♀ : 70
Beyalong, Sarawak	1 ♂ : 72

15 males : 71–76 ; mean 72·6 mm. 8 females : 68–74 ; mean 70·3 mm.

The series is very uniform, but the blue of the head and rump in the males varies somewhat, some being almost turquoise.

It is curious, as Stresemann points out, that all authors have referred this handsome species to *C. beccariana* Salvad., whose description clearly refers to a form of what has hitherto been known as *C. rufigaster*.

Species 12.

***Cyornis caerulata* (Bp.).**

Schwancia caerulea Bp., *Rev. et Mag. de Zool.* (2), ix, 1857, p. 54 (Sambarajan, South Borneo: type in Leyden Museum).

Cyornis rufifrons Wallace, *P.Z.S.* 1865, p. 476 (Sarawak: type (vix ad.) in British Museum examined).

Cyornis nigrigularis Everett, *Ibis*, 1891, p. 45 (Penrisen, Sarawak: type in British Museum examined).

Male : Rather duller and darker above than *C. superba* ; the forehead and superciliary stripes not so bright ; below with the chin and upper throat broadly black ; black or bluish black patches on the sides of the breast.—*Female* : Like that of *C. superba*, but the upper tail-coverts and the tail *blue*, rusty rufous colour below, distinctly deeper.

Range : Low country of Borneo and ? Sumatra.

Sungei Rotan and Sungei Segar, North-East Borneo	3 ♂ : 73·5, 74·5, 75
Lawas River, North-West Borneo	1 ♀ : 69·5
Tutong River, North-West Borneo	1 ♀ : 72
Sepitang, North-West Borneo	1 ♂ : 72
Sapargaya River, Borneo	1 ♂ : 74
Mt. Mulu, Sarawak	1 ♀ : 68

Batu Song, Sarawak	1 ♀ : 70
Baram, Sarawak	2 ♂ : 76, 78
Kalulong, Sarawak	1 ♂ : 76
Penrisen, Sarawak	1 ♂ : 75
Balingean, Sarawak	1 ♂, ♀ : 74, 69
"Sarawak"	4 ♂ : 76, 75, 74, 74
	2 ♀ : 69, 77

Males.

14 ♂ : 72-78 ; mean 74.8.

Palembang, South-East Sumatra

Females.

7 ♀ : 68-72 ; mean 69.1.

1 ♂ : 72

We have seen three specimens in all from Sumatra, all males, which certainly belong to this species, though whether strictly identical, subspecifically, the material is not sufficient to state. As noted above, it is quite possible that this is the bird described by Raffles as *Muscicapa rufigaster*.

The birds from North-East Borneo collected by H. C. Raven and now in the United States National Museum are rather less black on the throat, while the patches on the sides of the breast are not so black. The rufous on the lower throat and belly is deeper than in the type. They can, however, be matched in this respect by other birds from North-West Borneo and Sarawak. The type of *C. nigrigularis* is not altogether normal, and possibly was selected on this account.

SECTION IX.

Large birds, wing over 80 mm. Sexes very different. *Males* : Blue and white with no rufous.—*Females* : Somewhat variable, ferruginous brown, or greyish brown, often with a white patch on breast.

Species 13.

Males : Dark blue above, greyish white on belly.—*Females* : With a white patch on breast, tail-feathers always with a white base.

(a) *Cyornis concreta concreta* (S. Muell.).

Muscicapa concreta Sal. Muell., *Nat. Gesch. und Phys.* ii, 1835, p. 351 (mountains of West Sumatra)

Male : Blue, brighter above, belly, flanks, and under tail-coverts, whitish ; inner margin of tail feathers broadly white, almost to the tips.—*Female* : Blue replaced by ferruginous ; a large triangular white gorget.

Range : The mountains of Sumatra. Malay Peninsula from Kedah to Negri Sembilan, occasionally as low as 500 feet.

Sumatra 1 ♂ : 89 mm.

1 ♀ : 87

Malay Peninsula 11 ♂ : 88-93 ; mean 89.8 mm.

3 ♀ : 86, 88, 89

(b) *Cyornis concreta everetti* (Sharpe).

Siphia everetti Sharpe, *Ibis*, 1890, p. 360 (Mt. Penrisen, Sarawak, Borneo : type in British Museum examined).

Male : Smaller than *C. c. concreta* and with no white on the tail-feathers.

—*Female* : Rather duller ferruginous than the female of *C. c. concreta* and

with the white margins to the inner webs of the tail-feathers narrower and restricted to the base.

Range : Probably throughout Borneo at moderate elevations, but sometimes at quite low levels.

North-West Borneo	1 ♂ : 86
Sarawak	10 ♂ : 80-84 (type S1) ; mean 81.9.
	3 ♀ : 79, 82, 83
South Central Borneo (Liang Koebang)	1 ♂ : 84

(c) **Cyornis concreta cyanea** (Hume).

Muscitra cyanea Hume, *Stray Feath.* v, 1877, p. 101 (Meetan, Muleyit, North Tenasserim : type in British Museum examined).

Niltara leucura Tweedd., *Ann. & Mag. Nat. Hist.* xx, 1877, p. 95 (Taho Plateau, North Tenasserim : type in British Museum examined).

Trichostoma leucoproctum Tweedd., *P.Z.S.* 1877, p. 366 (base of Muleyit : type in British Museum examined).

Male : Head brighter blue than in the other two races.—*Female* : Very much less ferruginous both above and below ; head with a greyish tinge forming a distinct cap. Lores much more whitish and point of chin also white.

Range : Hills of Upper Assam and North Tenasserim ; French Indo-China (Tonkin).

Margharita, Upper Assam	5 ♂ : 89-91 ; mean 90.0 mm.
	7 ♀ : 86-90 ; mean 87.7 mm.
Tenasserim	6 ♂ : 90-92 ; mean 91.5 mm.
	1 ♀ : 90

In this species the bill is more hooked and less flat than in other species of the genus. It has been placed in various genera, but the plumage of the young, which is striped or spotted, show that it is a typical Flycatcher and certainly not a *Pachycephala*, with which genus it was associated by Gadow.

Species 14.

Male : Uniform, pale blue above and below.—*Female* : Dull brown above and below, not parti-coloured below.

(a) **Cyornis unicolor unicolor** Blyth.

Cyornis unicolor Blyth, *Journ. Asiat. Soc. Bengal*, xii, 1843, p. 1007 (Darjeeling : type in Indian Museum).

Range : From Darjeeling along the Himalayas to Eastern Assam. Manipur and South Shan States. We have not seen specimens from the Chin Hills.

Darjeeling	2 ♂ : 83, 83 mm.
	1 ♀ : 79
Sikhim	17 ♂ : 80-85 ; mean 82.0 mm.
	13 ♀ : 79-83 ; mean 80.5 mm.
Assam (Naga Hills)	14 ♂ : 81-84 ; mean 81.9 mm.
	1 ♀ : 82
Manipur	1 ♂ : 81
	1 ♀ : 79.5-82
South Shan States	1 ♀ : 82

(b) *Cyornis unicolor harterti* NOM. NOV.

Cyornis unicolor infusata Hartert (nec Blyth), *Nor. Zool.* ix, 1902, p. 550 (type locality fixed Java)

Rather smaller than the typical race. *Male*: Rather brighter blue above, the under wing-coverts and under tail-coverts darker grey with a tinge of fuscous brown.—*Female*: With a greyish cap, tail and upper tail-coverts much brighter rufous brown than in the typical race; below rather darker, flanks and under tail-coverts buffy.

Range: Peninsular Siam, Malay Peninsula, chiefly in the mountains, Sumatra, Borneo, and Java.

Peninsular Siam	1 ♀: 75 mm.
Malay Peninsula	7 ♂: 76–80; mean 77.6 mm.
	2 ♀: 76, 77
Borneo	3 ♂: 78, 78, 79
	2 ♀: 74, 79
Sumatra	2 ♂: 77, 80
	2 ♀: 75, 76
East Java	1 ♂: 77

The fact that, as stated by Finsch (*Notes Leyden Mus.* 22, 1901, p. 202; op. cit. 23, 1902, p. 50), the types of *Muscicapa infusata* Blyth described *Ibis*, 1870, p. 165. are really what has hitherto been known as *Rhinomyias pectoralis* Salvad., render it necessary to provide this Flycatcher with a new name.

In the British Museum, moreover, there is a specimen collected by Horner about 1834 in West Sumatra and labelled *Muscicapa infusata*, which was obtained from the Leyden Museum in exchange in 1877, and which is certainly one of the typical series of *M. infusata* Blyth. It proves to be a specimen of a form of *Cyornis olivacea* Hume.

Species 15.

Male: Deep azure blue, brighter on the rump, greyer on the belly and under-tail coverts, lores to eye black.—*Female*: Chestnut brown above rump and tail bright rufous chestnut; beneath rusty buff; paler on the throat; whitish on the middle of the belly.

***Cyornis ruecki* Oust.**

Cyornis ruecki Oustalet, *Bull. Soc. Philomath.* (7), v, 1881, p. 78 (Malacca: type in Paris Museum examined).

Cyornis vanheysti, Robinson & Kloss, *Journ. Straits Branch Roy. Asiat. Soc.* No. 80, 1919, p. 104 (North-East Sumatra: type examined): id. *Journ. Fed. Mal. States Mus.* xi, 1924, p. 269, pl. ix.

Range: Territory of Malacca, Malay Peninsula, and low country of North-East Sumatra.

Malacca	1 ♂: 81
	1 ♀: 78
North-East Sumatra	1 ♂: 78
	1 ♀: 79 (juv.)

We owe to the kindness of M. Berlioz the opportunity of examining the unique types of this species with which, as we suspected, *C. vanheysti* proves to be identical, though the Malaccan bird is perhaps a slightly darker blue, above and below.

The type has the appearance of a Malacca trade skin, though the female

has not. Both are stated to have come from Kessang on the coast of Malacca, from which locality the same dealer forwarded specimens of *Cyornis unicolor harterti*. Though very carefully searched for, the species has never been recovered in the Malay Peninsula, and the four specimens recorded above are the only ones known. Were it not for the very different female and the rather robust bill, we should consider the species as an aberration of *C. unicolor*. As it is, we must regard it as a distinct species with a restricted or peculiar habitat, such as dense mangroves to which the Malayan form of *C. beccariana* (*C. frenatus* Hume) is confined.

SECTION X.

A single species only.

With no rufous on the breast of the males and no white on the tail, blue above and on breast; belly and under tail-coverts white, sharply divided from the blue of the breast. Female brownish above, tail and rump more or less chestnut, beneath with the breast rufous or orange; belly white.

Species 16.

(a) *Cyornis pallipes pallipes* (Jerd.).

Muscicapa pallipes Jerd., *Madras Journ. Lit. & Sci.* xi, 1840, p. 39 (Coonoor; type not in existence).

Male: Rather dull blue above and on the breast, the flanks not infuscated.

—*Female*: With the loreal spot very white, the throat and chest deep rust red; the base of the tail and the upper tail-coverts rusty chestnut like the breast.

Range: South-Western and Southern India specimens in the British Museum from Kanara, Coorg, Wynaad, Kotagiri, Coonoor, Goodalore, and Travancore.

17 ♂: 74–79; mean 75·7 mm.

5 ♀: 71–74; mean 72·6 mm.

(b) *Cyornis pallipes hainana* (Ogilvie-Grant).

Siphia hainana O.-Grant, *Bull. Brit. Orn. Club*, x, 1899, p. 000; id. *P.Z.S.* 1900, p. 480 (Hainan: type in British Museum examined).

Siphia pallidipes hainana Hartert, *Nov. Zool.* xvii, 1910, p. 225.

Cyornis pallipes bannermani Delacour & Jabouille, *Bull. Brit. Orn. Club*, xlv, 1924, p. 32; id. *Ibis*, 1925, p. 243; id. *Arch. & Hist. Nat. Res. Ornith.* i, 1925, p. 109, pl. xxii (Khesang, Annam: type in Paris Museum examined).

Male: Rather brighter blue above than the typical form, throat and breast darker, flanks with a tendency to a brownish olive infuscation.—*Female*: With the lores less clear than in *p. pallipes*, throat and breast very much paler, yellowish buff with hardly any rusty tinge.

Range: South China: Kuantung and Kuangsi, January and April (breeding), Hainan breeding. Tonkin and Laos. Cambodia. Siam, north, east, and south-east. Northern Tenasserim (Thoungyeen Valley, April).

Hainan	. . . . .	12 ♂: 68–72; mean 69·7
		16 ♀: 64–68; mean 67·3
South China	. . . . .	6 ♀: 68–72
		3 ♀: 67, 67, 68
Tonkin	. . . . .	2 ♀: 68
Siam and Laos	. . . . .	5 ♂: 68, 68, 69·5, 70, 70
		3 ♀: 67, 70, 70
Tenasserim	. . . . .	1 ♂: 71

The Siamese females seem to have larger bills, and can only doubtfully be referred to this species, but we are unable to separate continental birds from those from Hainan. The females are very variable, some birds, especially from Hainan, having the throat and breast much deeper coloured, with the belly clearer white, but both forms occur in the same localities and on the same dates. Chinese males show a tendency for the white of the lower chest to invade the blue of the throat in a V-shaped wedge, but this character also occurs in a lesser degree in some Hainan birds.

The type of *C. p. bannermanni* exhibits this to an extreme degree, but seeing that it is more or less surrounded by the normal form we can only regard it as an individual aberration.

It is perhaps somewhat open to question whether this form should be regarded as a subspecies of *pallipes* or a distinct species in view of the very marked differences between the females, and the widely discontinuous distribution.

Cyornis pallipes herioti Wardl. Rams.

Cyornis herioti Wardl. Rams., *Ibis*, 1886, p. 159 (Manila, Luzon, Philippine Islands: type in British Museum examined).

Siphia enganensis, Ogilvie-Grant, *Bull. Brit. Orn. Club*, iv, 1895, p. ii (Cape Engano, North Luzon: type in British Museum examined).

As large as, or slightly larger than, *C. p. pallipes*. *Male*: With the blue tints darker and duller and the flanks strongly infuscated with brownish.—*Female*: With the breast deeper coloured than *C. p. hainana*, less rusty than *C. p. pallipes*; tail darker and less chestnut than in that race.

Range: The island of Luzon, Philippine Islands, where it seems to be extremely rare.

Luzon	3 ♂: 78, 78, 79
	2 ♀: 72, 73 mm.

The allocation of the female type of *C. herioti* to the male of *C. enganensis* as made by the late Dr. Sharpe, though probably correct, has not been absolutely proved. The specimen from Manilla is in indifferent condition and by no means fully adult; the bill has been distorted and flattened in preparation.

The bird described by Grant as the female of *enganensis* has a considerably darker chest and tail than *herioti*. The blue on the head and also on the base of the tail-feathers is probably not normal, but evidence of senility as has been suggested by Lord Rothschild. Such cases are by no means rare in other species of the genus.

SECTION XI.

Large birds, wing always over 80 mm. Sexes very different. Males with no white on plumage, more or less brilliant blue above, ochreous below, with a black or blue throat. Females ochreous or greyish below, brownish above.

Species 18.

Male: Above brilliant blue; below rich orange.—*Female*: With a pale throat spot.

Cyornis vivida vivida Swinh.

Cyornis vivida Swinhoe, *Ibis*, 1864, p. 363 (Formosa: type in British Museum examined).

Male: With the orange rufous of the breast always more or less intruding on the blue black of the throat.—*Female*: With the crown tinged with dull blue, forming an ill-defined cap. Below yellowish brown; throat spot pale creamy yellow; under tail-coverts with large greyish brown centres and buffy edges.

Range: Formosa only, usually at high elevations.

18 ♂: 87–91; mean 88.8 mm.

12 ♀: 84–88; mean 86.2 mm.

Males seem to moult direct from the very juvenile plumage into the brilliant garb of the adult. One specimen, dated November 1866, collected by R. Swinhoe, still has a few dull black feathers with guttate white spots on the tips, on the crown.

Cyornis vivida oatesi (Salvad.).

Niltara oatesi Salvad., *Ann. Mus. Civ. Gen.* (2), v, 1887, p. 514 (Muleyit, North Tenasserim: type in Genoa Museum).

Much larger than *C. v. vivida*. *Male*: With the orange of the breast in the larger majority of specimens carried far up the median line of the throat.—*Female*: Averaging slightly paler than that sex in *C. v. vivida*. Cap and tinge of blue on the crown almost imperceptible.

Range: Assam, Manipur; the Chin Hills (Mt. Victoria). Southern Shan States, Tonghoo, and North Tenasserim. Yunnan (the Mekong Salwin and Mekong Yangtze Divides and Mengtsz (?)).

Manipur	1 ♂: 96
	1 ♀: 94
Mt. Victoria, Chin Hills	2 ♂: 100, 103
	3 ♀: 94, 97, 99
Southern Shan States	2 ♂: 98, 102
	3 ♀: 94, 95, 97
Tonghoo	1 ♂: 97
Muleyit, North Tenasserim	7 ♂: 94–102; mean 99.6 mm.
	2 ♀: 94, 98
Mekong Salwin Divide	1 ♂: 101
	1 ♀: 97
Mekong Yangtze Divide	2 ♂: 98, 99
Mengtsz, Yunnan	1 ♀: 92
Szechuan	1 ♂ (imm.): 95

The Yunnan female is browner above and has the pale spot on the throat rather yellowish. It is also rather small, and as De la Touche has already noted, is rather doubtfully assignable to this form.

Cyornis vivida sumatrana (Salvad.).

Niltara sumatrana Salvad., *Ann. Mus. Civ. Gen.* (1), xiv, 1879, p. 201 (Mt. Singalan, West Sumatra: type in Genoa Museum).

Cyornis malayensis Robinson, *Journ. Fed. Malay States Museum*, ii, 1909, p. 164 (Telôm, Perak, Malay Peninsula: types examined).

Very much smaller than the other forms. *Male*: Throat darker, the black more restricted and with the rufous of the chest not invading it, the line of

division being straight.—*Female* : Very different. Back and tail richer brown, throat brownish, the spot in the middle white ; rest of the under surface greyish, except the under tail-coverts, which are rich ochreous brown.

Range : West Sumatra at high elevations. Mountains of Perak, Malay Peninsula.

Sumatra	5 ♂ : 81-83 ; mean 81.6 mm.
	4 ♀ : 78-82 ; mean 80.5 mm.
Malay Peninsula	2 ♂ : 79-82
	1 ♀ : 75

This species presents an extremely close resemblance to *Niltava sundara*, from which it can be distinguished by the character of the frontal plumes, which are longer and more developed in *Niltava*, and by the absence of the bright bluish-mauve patches on the sides of the neck in the female.

It is a question whether the specific title *sumatrana* is or is not invalidated by *sumatrensis*, Sharpe, which has slight priority.

Species 19.

Wing over 85 mm.

Male : Dull blue above, brighter on forehead and superciliaries ; throat blackish blue, rest of under surface orange.—*Female* : Above olivaceous brown, rump and tail tinged with blue, beneath orange rufous.

(a) *Cyornis hyacinthina hyacinthina* (Temm.).

Muscicapa hyacinthina Temm., *Pl. Col.* 30 (1824—Timor: type in Leyden Museum).

Range : Timor only.

Timor	9 ♂ : 87-92 ; mean 89.9 mm.
	8 ♀ : 86-87 ; mean 86.4 mm.

(b) *Cyornis hyacinthina kühni* Hartert.

Cyornis hyacinthina kühni Hartert, *Nor. Zool.* xi, 1904, p. 204 (Wetter Islands: type in Tring Museum examined).

Male : Much brighter blue than the typical form with a marked pale blue frontal band and superciliary stripe. Below with the blue on the breast more extensive and the ochreous rufous of the belly, etc., richer.—*Female* : Ochreous of the lower surface richer, a frontal band of the same colour, and the upper surface with a distinct bluish glaze, absent in the typical form.

Range : Wetter Island (Lesser Sunda Group only).

	7 ♂ : 88-94 ; mean 90.3 mm.
	6 ♀ : 87-88 ; mean 87.9 mm.

Species 20.

Male : Beneath as in *C. hyacinthina kühni*, but the blue restricted to the throat, above head only blue, the remaining parts fuscous brown. The tail and upper tail-coverts dark rusty chestnut.—*Female* : Above as in the male, but the blue cap barely distinct. Below as in the other forms of the group, but the throat greyish brown, distinct from the rusty rufous of the chest and abdomen.

Cyornis hoevelli (Meyer).

Siphia hoevelli Meyer, *Notes Leyden Museum*, xxiii, 1903, p. 186 (Tahala Mountains, Central Celebes : type in Leyden Museum).

Cyornis hoevelli Riley, *Proc. U.S. Nat. Mus.* lxiv, 1924, p. 66.

Range : North Central and Central Celebes.

5 ♂ : 88-89 ; mean 88.2 mm.

1 ♀ : 87

This bird seems sufficiently distinct from the other two forms of the group to be accorded specific rank. Mr. G. M. Mathews has recently made it the type of a genus *Rileyornis* (*Bull. Brit. Orn. Club*, xlviii, 1927, p. 48), with the sole diagnosis : " Differs from *Cyornis* Blyth in having a distinctly hooked bill." While we admit that this species, with *C. hyacinthina* and *C. h. kuhni*, has claims to generic separation by those who regard fine distinctions as sufficient, we must protest against the growing tendency among many authors to create new generic names by merely citing a type species, with no or very inadequate diagnosis attached and with no attempt to indicate what species are to be referred to the newly proposed genus. In the present instance Mr. Mathews' diagnosis would admit to *Rileyornis* certain species of *Cyornis* whose connection with *C. hoevelli* he would be the first to admit was very remote.

DIE ERGEBNISSE MEINER DRITTEN REISE NACH DEN BALEAREN

NEBST EINER ÜBERSICHT ALLER BISHER VON DER INSELGRUPPE DER
BALEAREN UND PITYUSEN BEKANNTEN VOGELARTEN.

VON DR. A. v. JORDANS.

(*Abgeschlossen am 1. März 1928.*)

ERSST im Frühjahr 1927 konnte ich meinen nach meiner zweiten 1921 unternommenen Reise gefassten Entschluss, noch ein weiteres Mal die Inselgruppe der Balearen aufzusuchen, zur Tat werden lassen. Die Ausführung wurde mir finanziell ermöglicht durch das Entgegenkommen der "Notgemeinschaft der Deutschen Wissenschaft" und der Unterstützung durch Herrn Geheimrat Prof. Dr. Koenig, denen ich hierfür auch an dieser Stelle meinen verbindlichen Dank ausspreche.—Auf dieser Reise begleitete mich Frhr. Nikolaus von und zu Bodman, dem ich für seine Hilfe und Überlassung von erbeutetem Material herzlich danke. Ferner schulde ich Dank neben den Behörden vor allem dem Deutschen Botschafter in Madrid, Herrn Graf von Welzeck, dem Deutschen Consul in Palma, Herrn Alfred Müller, der mir mit gewohnter Liebenswürdigkeit in allen Schwierigkeiten mit Rat und Tat zur Seite stand, den Grundbesitzern in Mallorca, die mir wie früher bereitwilligst jede erbetene Jagderlaubnis in ihren Revieren gaben, und ferner allen jenen Herren Kollegen, die mir später zu Hause durch Überlassung von Vergleichsmaterial bei der wissenschaftlichen Bearbeitung der Ausbeute halfen.

Wir fuhren diesmal erst am 3. April von Bonn ab; die Reiseroute ging dank dem Entgegenkommen des belgischen und französischen Ministeriums über Paris—Port Bou—Barcelona, von hier mit dem Dampfer nach Palma. Bis zur spanischen Grenze verlief die Fahrt ohne jede Schwierigkeit, aber hier wurden uns trotz aller auf Grund unserer Papiere erhobenen Einsprüche von der spanischen Zolldirektion unsere Gewehre beschlagnahmt, die mitgenommene Munition dagegen durchgelassen. Das Deutsche Generalconsulat in Barcelona wandte sich sofort telegraphisch nach Madrid, ich selbst an den Deutschen Botschafter, dem unser freies Passieren der Grenze vom spanischen Ministerium zugesagt war, zunächst aber ohne jeden Erfolg. Trotzdem Graf Welzeck auf unsere wiederholten Telegramme alle Schritte unternahm, war es ihm erst nach fast 14 Tagen auf Grund mehrmaliger persönlicher Vorstellungen im Ministerium möglich, die Freigabe zu erwirken, nachdem die Generalzolldirektion die Gewehre zwar schon etliche Tage vorher freigegeben, sie dann aber sofort der Zivilgouverneur beschlagnahmt hatte! Am 17. April erhielten wir sie endlich, nachdem 10 für uns kostbare Tage nutzlos verstrichen waren. Ich berichte hierüber eingehender zur Warnung für solche, die mit Gewehren nach Spanien wollen und nicht vorher im Besitz einer beglaubigten Abschrift der Ministerialerlaubnis sind—trotz aller sonstiger Liebenswürdigkeit der spanischen Behörden. Erneute Schwierigkeiten hatten wir, als wir die offizielle Erlaubnis zur Jagd auch auf solche Vögel erbaten, die durch die neuen Jagd- und Vogelschutzgesetze in Spanien geschützt sind, Gesetze, die sonst erfreulicherweise scharf durchgeführt werden;

auch diese Erlaubnis erwirkte uns erst die persönliche Vorstellung des Botschafters, woraufhin der Innenminister den Gouverneur der Balearen anwies, uns alle gewünschte Erlaubnis sofort auszustellen. Wir sind den vielen Bemühungen unseres Botschafters daher zu grösstem Dank verpflichtet. Wie wir später feststellten, hatte der Zivilgouverneur sämtlichen Posten der Guardia Civil und der Carabineris auf allen Inseln—was etwas heissen will, da jeder kleinste bewohnte Ort und ausserdem viele Küstenpunkte solche Kommandos besitzen—alle erforderlichen Instruktionen gegeben, uns keine Schwierigkeiten zu machen, sodass jene uns, wo sie konnten, halfen. Ausserdem war zum Betreten der Festunginsel Cabrera mit Waffen eine besondere Erlaubnis vonseiten des Chefs der obersten Militärbehörde der Balearen erforderlich, die uns dieser nach Erledigung der notwendigen Formalitäten auch ausstellte.

Wie streng die Schutzgesetze gehandhabt werden, mag aus folgender Episode hervorgehen: Auf einer Tour veranlasste ich den weiter unten genannten tüchtigen Schützen und Vogelkenner Cosmer, uns mit seinem Gewehre zu begleiten, worauf dieser mit Freuden einging, da für ihn in dieser Zeit sonst die Ausübung seiner Jagdpassion unmöglich war. Bei unserer Rückkehr von dieser Tour wurde er im Orte von zwei Gendarmen erwartet, die ein guter Freund benachrichtigt hatte, und nur meinen erst liebenswürdigen Überredungskünsten dann aber energischem Dazwischentreten gelang es, ihn vor sehr unangenehmen Weiterungen zu schützen. Da ich seine Hilfe nicht gerne entbehren wollte, bat ich den mir sehr gewogenen obersten Chef in Palma, jenem Manne doch die Erlaubnis auszustellen, sowohl während meiner Anwesenheit in jener Gegend mit mir jagen wie auch während meines weiteren Aufenthaltes auf der Insel allein für mich Raubvögel und einige andere Arten schiessen zu dürfen, und ich verbürgte mich für ihn, dass er diese Erlaubnis keinesfalls zur Befriedigung weiterer eigener Jagdgelüste missbrauchen würde. Der Deutsche Consul unterstützte mich bei diesen Gesuche. Die Vorweisung aller meiner höchsten Erlaubnisseheine fruchtete aber gar nichts, da der Oberst unter lebhaftem und offensichtlich echtem Bedauern darauf hinwies, dass ihm hierzu ohne ausdrückliche Anweisung vom Ministerium in Madrid keine Möglichkeit gegeben sei; er stellte uns aber schmunzelnd anheim, den Mann als Gewehrträger mitzunehmen, er wolle dann mündlich die entsprechenden Posten instruieren. Und tatsächlich liess er deren Chef anderntags nur zu diesem Zwecke aus der entfernten Gegend der Insel zu sich nach Palma rufen.—Als wir nach zwei Tagen den Schauplatz unserer Tätigkeit verlegten, wurde Cosmer zu dem Chef gerufen und unter Androhung strenger Strafen—Haft und dauernde Entziehung des Gewehres—verwarnt, sich in der geschlossenen Zeit mit dem Gewehr sehen zu lassen!

Am 18. April begannen wir unsere Tätigkeit, nachdem wir schon bis dahin einige Beobachtungsausflüge gemacht hatten, Ende Juni beendeten wir sie und trafen auf dem gleichen Wege am 9. Juli wieder in Bonn ein. Im Gegensatz zum vorigen Mal konnten wir diesmal Gewehre und Ausbeute selbst mit uns nehmen.—Wie 1921 hatte ich auch jetzt keinen Präparator mit und sammelte neben Vögeln auch Eier, Reptilien, Amphibien und Insekten. Die Eier wird Geheimrat Koenig bearbeiten und in einem Sonderartikel besprechen. Die übrige Ausbeute wird von Spezialisten bearbeitet, die das Ergebnis in ihren Fachzeitschriften veröffentlichen werden (vergl. auch Vogelf. II, Schluss Kapitel). Wir brachten im ganze 210 Vogelbälge heim.

Ich probierte zum ersten Male, frischgeschossene Kleinvögel—darunter als

grösste Wachteln—mit einer Formalinlösung zu injicieren, um sie in Deutschland zu Bälgen verarbeiten zu lassen. Die Möglichkeit, solche injizierte Vögel noch nach längerer Zeit zu guten Bälgen präparieren zu können, hängt vor allem davon ab, dass man die Injection baldigst nach der Erbeutung vornimmt, dass die Lösung nicht zu stark aber auch nicht zu schwach ist, da in ersterem Falle eine zu starke Verhärtung namentlich am Kopf eintritt, im letzteren zumal bei starker Hitze und längerem Transport doch Fäulnisherde entstehen können, ferner dass man die Federn vor Berührung mit der Formalinlösung hütet und dass man möglichst Verunreinigung der Federn durch ausgetretenes Blut vermeidet, da dieses sich mit Formalin vermischt kaum mehr entfernen lässt, und schliesslich dass beim Verpacken das Gefieder möglichst glatt anliegt. Nach kurzer Zeit hat man darin einige Übung, und solcherart behandelte Vögel kommen auch bei starker Hitze und längerer Transportzeit unversehrt über, und man erhält noch gute Bälge und spart ausserordentlich viel Zeit. Meine so präparierten Kleinvögel zu schönen Bälgen umzuarbeiten, hatte Herr A. Fischer in Augsburg die grosse Liebenswürdigkeit, wofür ich ihm hier nochmals meinen besten Dank sagen möchte.

Wir besuchten diesmal z.T. andere Orte als 1921, waren auch einige Tage auf der Insel Cabrera, und vor allem lernte ich zum ersten Male die Pitiusen (Ibiza und Formentera) kennen, wo wir uns vom 20. bis 26. Juni aufhielten. Auf Formentera fiel das gänzliche Fehlen—wenigstens soweit wir feststellen konnten—von Kohl- und Blaumeisen, von Grau- und Zaunammern und sogar des Buchfinken, dieses sonst so häufigen Vogels, auf.

Die Wasserverhältnisse in der Albufera und Albufereta waren wieder nicht sehr günstige. Die Jagd dort ist überhaupt, wie ich schon schilderte, äusserst schwierig und mühselig, und ich bin überzeugt, dass in dem grossen Sumpfbiet noch manche Vogelarten brüten, die bisher noch von keinem Beobachter zur Feststellung gelangten. Grosse und für die Vogelwelt günstigste Gebiete sind absolut unbetretbar, da der Sumpf stellenweise bedenklich ist und das meterhohe Rohr ein tieferes Eindringen verhindert und jede Orientierung unmöglich macht: trotz wiederholter Versuche gelang ein weiteres Eindringen in diese Gegenden auch weder Herrn Munn noch seinem jungen eifrigen mallorquinischen Sammler, wie diese mir erzählten.

Im Süden der Insel Mallorca gibt es noch drei weitere Sumpfbiete (ich verweise auf meine 1. Arbeit, p. 15): nordwestlich von dem Orte Salinas die Laguna de Salobra, südlich Salinas die Laguna de Tamarells und der Estanque de ses Gambas. Diese Gebiete lernten wir durch diesmaligen längeren Aufenthalt genauer kennen, als es mir auf meiner 1. Reise möglich war. Gambas ist ein ovaler, flacher, offener See mit schmalem Sandstrand, der teilweise von Tamarisken, teilweise von Kiefern eingesäumt wird. Zur Zugzeit und im Winter soll hier reichstes Vogelleben herrschen: wir trafen nur viele Regenpfeifer brütend und einige durchziehende Strandvögel, sonst ist diese Gegend ebenso vogelarm wie der kleine, im Sommer wohl fast ganz austrocknende Sumpf von Tamarells, der ein kleines von Tamariskengestrüpp, Riedgras und verstreuten Wasserlachen bedecktes Terrain einnimmt. Ganz anders der weitausgedehnte Sumpf Salobra: ein sich ca 3 km. hinziehendes etwa 1½ km. breites echtes Sumpfgelände mit weiten offenen mit kleinen Pflanzeninseln durchsetzten Wasserflächen, stellenweise unterbrochen durch ausgedehnte Tamariskenwäldchen, Rohrbestände und dichter Sumpfvegetation—eine ganz andere Landschaft als die der eintönigeren

Albufera. Hier nisteten viele Rohrweihen, einzelne Stockenten, Wasserrallen u.s.w. : Flüge von Strandvögeln hielten sich noch auf, Regenpfeifer brüteten, Seeschwalben und Möven zeigten sich, und manche Sumpfvögel werden hier sicherlich noch leben, die nicht zur Beobachtung kamen : dagegen fehlten alle Rohrsänger und andere Arten, die man hätte erwarten können. Ringsherum und auch zwischendurch das für den Sardensänger typische niedrige, dichte Buschgelände, wo wir ihn allenthalben häufig antrafen. Auch in diesem Sumpfbezirk soll im Winter, Herbst und Frühjahr ein ausserordentlich reiches Vogelleben herrschen.

Dann besuchten wir einigemal von Palma aus den Sumpf La Porrassa, wo 1913 noch reges Sumpfvogelleben herrschte, wo ich den Stelzenläufer zur Brutzeit beobachtete. Heute ist er nahezu trocken gelegt, nur wenige ganz seichte Wasserflächen und drei kleine Rohrbezirke sind übrig geblieben, wo noch wenige Stockenten und etliche Paare Rohrweihen brüten, das Übrige sind Sandflächen, auf denen sich Regenpfeifer tummeln, oder wo dichtes niedriges Gestrüpp den Boden bedeckt. Das in der Nähe liegende mustergültig bewirtschaftete Gut kultiviert immermehr ehemaliges Sumpfgelände, das in einigen Jahren ganz verschwunden sein wird.—Hier erlebte mein Reisegefährte eine recht unangenehme Situation : Der Besitzer des Gutes hatte entgegen der Verabredung vergessen, seine Jagdhüter von unserer Jagerei dort zu benachrichtigen, und als wir uns mal kurz getrennt hatten, um eher an die recht scheuen Weihen heranzukommen, hatte sich einer der Förster nach langem vergeblichem Nachlaufen, ohne dass wir ihn bemerkt hatten, an Baron Bodman herangepürscht, ihn auf geringe Entfernung plötzlich angerufen und energisch die Ablage seines Gewehres verlangt, was dieser aber, der Sprache nicht kundig, nicht sofort verstanden hatte, worauf der Hüter seine alte Büchse schussbereit auf ihn anlegte ; mein noch rechtzeitiges Dazwischentreten klärte den Sachverhalt schnell auf, und das erhitze Gemüt des braven diensteifrigen Burschen schlug in äusserste Verlegenheit um, bis ihn eine angebotene Zigarette darüber beruhigte, dass wir uns nicht über sein—übrigens korrektes—Verhalten bei seinem gestrengen Dienstherrn beschweren würden. Diese Situation war eben so komisch wie die vorhergehende unangenehm gewesen war.

Auch dieses Mal gelang es uns trotz aller Mühe zu meinem Leidwesen nicht, alle mir noch fehlenden Brutvögel, die als solche sicher festgestellt sind, zu erbeuten, einmal da wir sie nicht vor die Flinte oder Büchse bekamen oder auch weil wir verschiedene Male halt nicht Alles bekamen, worauf wir schossen ! Was nun noch an Brutvögeln fehlt, muss wohl ein Anderer zu holen und auch noch Manches festzustellen versuchen, was uns nicht mit Sicherheit gelang. Ausserdem dürften zur Zugzeit und im Winter noch manche Arten vorkommen, die bisher von dort noch nicht bekannt geworden sind. Jedenfalls konnte ich namentlich dieses Mal feststellen oder auch zuverlässigen Mitteilungen der Einwohner entnehmen, dass im Herbst wie besonders im Frühjahr ein sehr starker *Vogelzug* über die Inseln weggeht, worüber sich einige Angaben im Text finden. Den stärksten Zug beobachteten wir am 11. Mai auf der Cabrera : Es war bewölkter Himmel und es regnete hin und wieder etwas bei geringem N. Winde. Grosse Flüge Hausschwalben, sehr viele Gartenrotschwänze viele Trauerfliegenfänger, etliche Steinschmätzer, hunderte von Laubsängern viele Turteltauben, ein Pirol, wenige Wachteln, Pieper, Dorngrasmücken etc. kamen zur Beobachtung. Ich bin überzeugt, dass das Mittelmeer, wenigstens für die

meisten Arten kein ernstes Zughindernis bedeutet und dass dasselbe—wenigstens sein westlicher Teil—in seiner ganzen Breite von Massen von Vögeln überflogen wird (vergl. auch meine vorige Arbeit, p. 202). Mallorca wäre sicherlich ein herrliches Gebiet für eine Vogelzugstation, aber meine Erkundigungen in dieser Richtung sowohl bei Privatpersonen wie bei Behörden nahmen mir den Mut, mich ernstlich mit einem solchen Plane zu befassen!

Auch meine diesjährige Reise zwingt mich durch ihre Resultate zu einigen Berichtigungen und Ergänzungen—und steigert dadurch das Ergebnis. Auch jetzt habe ich mich viel und immer wieder an unseren verschiedenen Aufenthaltsorten mit den Bewohnern über die Fauna unterhalten und manches Interesse bei ihnen gefunden.—Hier möchte ich vor allem Herrn Garcias Font, Apotheker in Artá, nennen, der wohl der beste Kenner der Fauna und besonders der Flora Mallorcas ist, eifrig sammelt, eine sehr umfangreiche Kollektion von Käfern u.a. und insbesondere ein sehr reiches Herbarium besitzt, auch Manches in spanischen Zeitschriften veröffentlicht hat und uns in geradezu rührender Weise is Allem unterstützte, mir auch wertvolles Material überliess, für das Alles ich ihm meinen besonders herzlichen Dank auch hier sagen möchte. Er brachte mich auch zusammen mit einem eingessenen Vogelschiesser und Fänger mit Namen Cosmer, der fast so berühmt wie sein Vater in der ganzen Gegend wegen dieser seiner Künste ist und der allerdings wirklich ein ganz erstaunliches Wissen nicht nur in Bezug auf die vorkommenden Arten sondern auch von der Lebensweise der Vögel und Säugetiere mir bewies. Über seine Fangkünste werde ich ein Beispiel im speziellen Teil anführen! Nach seinen mir bewiesenen Beispielen bin ich überzeugt, was von ihm gesagt wurde, dass er j e d e n Vogel bezw. jede Vogelart in kürzester Zeit beschafft, auch die scheueste und seltenste. Leider lernten wir ihn erst in den letzten Tagen kennen, trotzdem verdanke ich ihm einige wichtige Stücke.—Ferner lernte ich den Pater Rotger in Españolet bei Palma kennen, einen tüchtigen Entomologen, dessen Liebeshwürdigkeit ich ebenso wie der seines Lehrers, des Paters Jordá, eine ganze Anzahl Käfer und Schmetterlinge aus ihrer reichen Sammlung, wohl der vollständigsten Insektenkollektion Mallorcas, verdanke.—Wenn man sich mit den Leuten auf dem Lande, den Bauern, Hirten und Fischern unterhält, um sich von ihnen Angaben über das Vorkommen von Tieren machen zu lassen, so muss man diesen Aussagen gegenüber äusserst vorsichtig und kritisch sein, einmal weil der Mann in seiner Liebeshwürdigkeit und angeborenen grossen Höflichkeit immer allzu leicht Dinge sagt, von denen er annimmt, dass man sie gerne hört—nicht um sich wichtig zu tun!—auch solche Leute Auskünfte geben, die gar nichts kennen, oder aber man verwendet auch die von ihnen genannten Namen leicht verkehrt, weil vielfach an verschiedenen Orten der Insel derselbe mallorquinische Name für verschiedene Arten gebraucht wird. Ich habe nur wenige Männer getroffen, auf deren Angaben ich mich wirklich verlassen konnte.

Hier möchte ich noch eine kleine Geschichte erzählen, die einem passieren kann, wenn man auf seinem Reisepass vor seinem Namen ein "Dr." stehen hat: Da kamen wir eines Tages in ein einsam gelegenes Fischerdorf, wo uns ein mir von 1921 her bekannter Fischer gastfreundlich 2 Stuben einräumte. Am 2. Abend waren wir bei Kerzenlicht mit Praeparieren beschäftigt, als es zaghaft klopfte und unser Wirt fragte, ob er wohl mit seiner Frau mal unserer Arbeit zusehen dürfe, was ich natürlich gern erlaubte. Nach einigen Minuten merkte ich, dass er mich gerne etwas fragen wollte, dabei aber genierte Blicke auf Baron

Bodman warf. Ich bat diesen daher, unter irgend einem Vorwand herauszugehen, und kaum hatte er die Türe hinter sich zugemacht, begann die Frau—sich auszuziehen, und der Fischer bat mich dringend, doch mal nach seiner Frau zu sehen, da ich ja, wie er gehört hätte, Doktor sei. Ich versuchte ihn auf alle Weise zu überzeugen, dass das zwar stimme, dass ich aber leider kein Arzt sei, was bei uns nicht dasselbe wäre. Dies aber ging über seinen Horizont und—die Frau zog sich seelenruhig weiter aus, obendrein mit der Erklärung, sie erwarte im 6. Monat, und alles mögliche Andere. Ich fügte mich in mein Schicksal und überlegte, wie ich mich aus der heiklen Situation ziehen sollte! G.D. sah ich, dass die Frau Krampfadern hatte, und nun sagte ich ihr, sie solle schleunigst mit ihrem Manne nach der Hauptstadt fahren, sich dort einen Gummistrumpf kaufen, was unbedingt nötig sei, vorher sich aber von einem Arzt zu diesem Zweck ein Rezept geben lassen etc. Hoherfreut über meine "Untersuchung" und der Versicherung, gleich meinen Rat auszuführen, der sie ohne Zweifel von allen Übeln befreien würde, da sie viel von den Künsten deutscher Ärzte gehört hätte, und der bangen Frage "was bin ich Herrn Doktor nun schuldig" und voller Rührung, dass ein deutscher Arzt für seine Mühe nichts annehme, zogen die Beiden seelenvergnügt ab—ich war es sicherlich nicht weniger. Der Erfolg aber war, dass ich anderntags bei allen möglichen Kinderkrankheiten helfen sollte, deren Namen ich nicht mal verstand, welchen Zumutungen wir uns durch möglichste Unsichtbarkeit entzogen und dadurch dass wir 2 Tage darauf die gastliche Stätte verliessen, für die wir eine Zeche bezahlen mussten, gegen die ich nun sehr gerne ein Dr.-Honorar in Anrechnung gebracht hätte!! Dieses und ein noch unangenehmeres Erlebnis auf der Rückreise im französischen Südexpress sind mir eine Lehre für die Zukunft, meinen Dr. nicht mehr auf dem Pass anzugeben.

In der Aufzählung der Arten wende ich dieselbe Reihenfolge an, wie in meinen beiden früheren Arbeiten.—Ein paar Worte über die Nomenklatur: In dieser Arbeit gebrauche ich der Einheitlichkeit wegen die gleichen Namen wie vordem, was aber nicht heisst, dass ich mich mit allen prinzipiell einverstanden erkläre. Selbstredend erkenne ich das Prioritätsprinzip durchaus an, was aber keineswegs ausschliesst, dass ich seine ins Absurde gehende Konsequenzen überall mitmache. In der Wissenschaft kann es Gottlob keine parlamentarischen Majoritätsbeschlüsse geben; daher lasse ich mich nicht zwingen, durch eine Majorität auf einem Kongresse zur Annahme gebrachte Beschlüsse auch da zur Ausführung zu bringen, wo ich sie als sinnlos ansehe. Ich rechne hierzu u.a. die Ablösung eines alt eingebürgerten, vielleicht mehr als hundert Jahren allgemein angewandten Namens, durch irgend einen neu ausgegrabenen älteren Namen, Vertauschung alteingebürgerter Art-oder Gattungsnamen (*Saxicola*—*Pratincola*: *Tringa*—*Erolia* und nun gar *Calidris*!), ferner Beibehaltung solcher verkehrt geschriebener Namen, die, sei es irrtümlich vom Autor oder gar infolge Fehlers des Setzters, erstmalig falsch gedruckt wurden, die man jetzt beizubehalten sich erdreistet selbst dann, wenn der Autor sie in späterer Zeit selbst korrigierte! Was würde man denn eigentlich von einem Menschen halten, der obendrein noch betont, dass er andere spätere inhaltliche Berichtigungen eines Autors einfach konsequent ignoriere, weil die betreffende falsche Angabe nun einmal in dessen erster Veröffentlichung gestanden hatte! Ich glaube, ein Jeder würde solches Verhalten entweder verrückt oder unanständig nennen. Und bei einem wissenschaftlichen Namen soll das korrekt sein, weil es eine Majorität bestimmt hat,

obendrein dann, wenn der Name zu Ehren eines anderen Forschers gegeben wurde !! Ich habe hier, wie gesagt, nur einige Punkte herausgegriffen.

Seit 1921 ist eine Reihe ornithologischer Arbeiten über das Gebiet, erschienen, die ich nun zunächst chronologisch anführen werde mit kurzen kritischen Bemerkungen: im einzelnen verweise ich auf den speziellen Teil. Meine Aufzählung der ornithologischen Literatur über die Inselgruppen dürfte dann bis heute wohl lückenlos sein.

Im Text werde ich meine erste und zweite Arbeit über die Vogelfauna der Balearen anführen unter der Abkürzung: Vogelf. I bzw. Vogelf. II.

P. W. Munn, der weiterhin auf Mallorca lebt und den ich diesmal auch persönlich kennen lernte, ergänzte seine frühere Arbeit (Vergl. Vogelf. II, p. 149) durch weitere Veröffentlichungen. Er besuchte nun auch verschiedene Male die Insel Menorca—die einzige der grossen Baleareninseln, die ich persönlich leider nicht kenne, von deren Besuch ich mir aber auch ornithologisch nichts Besonderes verspreche—und stellte im *Ibis*, 1924, pp. 446–67, die bisher bekannten ornithologischen Daten von dieser Insel unter dem Titel "Notes on the Birds of Minorca" zusammen. Es gelang ihm, das Vorkommen einiger bisher von Menorca nicht bekannter Arten nachzuweisen. Unter dem Titel "Additional Notes on the Birds of Alcudia, Mallorca," in der gleichen Zeitschrift im Jahre 1925, pp. 39–47, und "Additional Notes on the Birds of the Balearic Islands," 1926, pp. 467–77, erschienen weitere Aufsätze von ihm. Er wird auch hinfort, Ergänzungen folgen lassen. Die von ihm gesammelten Vögel bearbeitete Witherby, die Eier Jourdain.—In der Hauptsache widmet er sich dem Sammeln von Eiern, daneben beobachtet er fleissig und sammelt nur soweit Vögel, als es sich ihm um wichtigere Belegstücke zu handeln scheint. So weit nur Beobachtungen vorliegen, scheint mir—nicht nur in diesem speziellen Falle—eine gewisse Skepsis notwendig zu sein, namentlich bei in der Freiheit schwierig anzusprechenden Arten—vergl. z.B. *Larus glaucoides*.—Die Seiten 474–77 der letztgenannten Arbeit enthalten noch "Additional Notes on the Birds of Minorca," die wie die oben genannten z.T. auf Angaben von Ponseti in Menorca fussen.—Kurz bevor ich meine Arbeit abschloss, sandte mir Munn ein Separat seiner "Further Notes on the Birds of the Balearic Islands" ans dem *Ibis*, 1928, pp. 17–22, sodass ich diese Notizen noch nachträglich meiner Arbeit einfügen konnte.—Da der Autor nun schon lange Jahre auf Mallorca lebt, bedauere ich es, dass er nicht mehr Gewicht auf das Sammeln namentlich solcher Vogelarten legt, von denen noch ein grösseres Material wünschenswert wäre, oder solcher, deren Brüten zwar angegeben aber noch nicht durch am Neste geschossene Belegstücke einwandfrei nachgewiesen ist. Nichtsdestoweniger sind aber seine Veröffentlichungen von grossem Werte für die faunistische Kenntnis.

Im Jahre 1926 besuchte der Amerikaner R. P. Murphy mit der Yacht *Hawaloan* auf einer wissenschaftlichen Mittelmeerreise die Balearen und gab über die Fahrt eine kleine Arbeit heraus "A Cruise to Majorca" (mit einigen typischen Landschaftsbildern), von der ich ein Separat der Liebenswürdigkeit von Herrn Munn danke. Die Arbeit erschien in *Natural History*, Vol. XXVI, Nr. 6, 1926, pp. 552–69 (Museum of Natural History, New York). Der Verfasser erwähnt u.a. auf p. 562 einige Vogelbeobachtungen.

In der Zeitschrift "Beiträge zur Fortpflanzungsbiologie der Vögel mit Berücksichtigung der Oologie," 1926, pp. 13–17, erschien ein Artikel "Am

Brutplatz von *Sylvia sarda* Temm." von Dr. Paul *Henrici* mit 3 Abbildungen. Der Autor besuchte im Frühjahr 1923 die Balearen und schildert in diesen Notizen eingehend das Brutgeschäft des Sardensängers auf Mallorca.—In der gleichen Zeitschrift (1926 Nr. 5 bis 1927 Nr. 3) berichtete derselbe Autor dann über "Ornithologische Ergebnisse zweier kurzer Reisen nach den Balearen und Pityusen," wo er im Frühjahr 1924 und 1925 einige Wochen zubrachte. Er beschäftigte sich vornehmlich mit dem Sammeln von Eiern und erzielte in Anbetracht seines kurzen Aufenthaltes recht gute Resultate.—Wie *Henrici* feststellte—ich machte auf meinen drei Reisen ähnliche Erfahrungen—bestehen auf den Inseln infolge der jahrweise wechselnden Temperaturverhältnisse nicht unbeträchtliche Schwankungen in Bezug auf das Einsetzen des Brutgeschäftes mancher, besonders der kleineren Vogelarten. 1924 traf *Henrici* am 3. Mai auf Mallorca ein, er kam "etwas spät für die Brutperiode," 1925 Mitte April "kamen wir entschieden zu früh." Der starke Unterschied im Klima der beiden Jahre erhellt anschaulich aus seiner Schilderung der Hinreisen. Gerade infolge dieser Verhältnisse ist grosse Vorsicht geboten bei der Beurteilung der Beobachtungen hinsichtlich der Frage nach dem Brüten oder Nichtbrüten einzelner Arten, da man bei nur kurzem Aufenthalt nicht in der Lage ist, aus einzelnen draussen gemachten vielleicht späten Beobachtungen sichere Schlüsse auf das Sommerverweilen und Brüten von Arten zu ziehen, so lange letzteres selbst nicht zur Feststellung kam. Trotzdem ich selbst jedesmal wenigstens 3 Monate verweilte, liess ich mich ein paarmal täuschen. Dass das Brutgeschäft im höheren Gebirge etwas später einsetzt als in der wärmeren Ebene, ist nicht zu verwundern, doch dürfte die Zeitdifferenz recht gering sein.—Ich werde an vielen Stellen auf die wichtige Arbeit *Henrici's* zurückkommen, muss aber leider in einige wenige seiner Beobachtungen Zweifel setzen.

In der gleichen Zeitschrift (1927 Heft 2 u. 3) veröffentlichte ferner Mr. F. C. R. *Jordan* eine Arbeit über "Die Eier der Vögel von Mallorca (Balearen)." Das vom Autor bearbeitete Material entstammt zum grössten Teil der 7jährigen Sammeltätigkeit des Mr. Munn, das dieser auf Mallorca, zu geringem Teil auch auf Menorca zusammengebracht hat, rund 800 Eier von 35 Arten; ferner konnte der Autor "ca. 350 Eier durchsehen, die Mr. F. R. *Ratcliff* im April und Mai 1909" sammelte. Auch diese Arbeit werde ich unten des öfteren zu erwähnen haben.

Schliesslich erschien noch 1927 (London u. New York) ein schönes Werk des Amerikaners *Frederick Chamberlin*, *The Balearics and their Peoples*, mit einer Reihe guter Abbildungen, hauptsächlich geographischen, historischen, prähistorischen, folkloristischen Inhalts. Daneben behandelt ein Kapitel die Flora der Balearen und ein weiteres (pp. 147–73) "The Birds of Majorca and Minorca," welches der *Feder Munn's* entstammt.—Es gibt eine allgemeine Übersicht über unsere bisherige Kenntnis der Vögel der Inselgruppe. Neues bringt die Arbeit kaum; die Nomenklatur, vor allem deren Schreibweise ist wenig wissenschaftlich, und manche Angaben sind auch zu allgemein oder auch wenig genau und kritisch. Für ein solches Werk dürfte aber doch dieses eben allgemeiner gehaltene Kapitel vollauf genügen.

Hiermit ist die Liste der neuesten Litteratur erschöpft und ich beginne nun den speziellen Teil, dem ein kurzes Schlusskapitel angefügt wird.—Um einen Gesamtüberblick zu erleichtern, werde ich sämtliche Arten anführen, deren Vorkommen bisher für das Gebiet angegeben worden ist; wenn nichts Neues

zu berichten ist, verweise ich mit kurzen Stichworten auf die betr. Litteraturstellen. Wen die castilianischen und mallorquinischen Vogelnamen interessieren, der mag sie in Vogelf. I nachschlagen, da ich sie aus Platzersparnis nicht nochmals nennen will. Ich beabsichtigte erst, ein grösseres Werk mit Vogel- und Landschaftsabbildungen herauszugeben, und zu diesem Zwecke hatten wir diesmal eine grosse Anzahl photographischer Aufnahmen gemacht; ich entschloss mich aber, vorläufig wenigstens, davon Abstand zu nehmen, da demnächst ein Buch über die Vogelwelt der Balearen von Munn erscheinen wird, und ausserdem fehlen doch immer noch einige, wenn auch nicht sehr viele Feststellungen, die zu machen vielleicht in den nächsten Jahren gelingen wird, sodass dann ein wirklich abschliessendes Werk grösseren Wert haben dürfte.

Lanius senator badius Hartl.

Diese Form des Rotkopfwürgers ist auf allen grösseren Inseln der Balearen —Pityusengruppe ein häufiger Brutvogel (vergl. Vogelf. II, p. 151), der in der letzten Dekade des März eintrifft. Die ersten Gelege findet man Ende April. Sein Bestand ist anscheinend jahresweise ziemlich wechselnd. Das höhere Gebirge meidet er. Über seine Nistweise und Eier vergl. Henrici, 1926, pp. 122–24, und Jourdain, 1927, p. 37.

Reiches Balgmateriale an alten und jungen Vögeln liegt vor.

Lanius senator senator L.

Der nordische Rotkopfwürger zieht Mitte April nicht zahlreich durch.— Einige Belegexemplare.

Lanius excubitor meridionalis Temm.

Sehr seltener Durchzügler auf Mallorca (ein Exemplar aus dem Jahre 1889, vergl. Vogelf. I, p. 37) und Menorca (vergl. Munn, *Ibis*, 1924, p. 452).

Muscicapa striata balearica Jordans.

Der graue Fliegenfänger in dieser auffallenden hellen Form¹ ist einer der gemeinsten Brutvögel auf allen Inseln, in der Ebene wie im Gebirge. Er trifft erst Mitte April ein.—Mehr als 40 Bälge vorliegend.

Muscicapa striata striata (Pall.).

Der nordische graue Fliegenfänger ist Durchzügler. Ich beobachtete u. a. am 5. Mai 1927 einige: vier Belegstücke von Mallorca in meiner Sammlung.

Muscicapa hypoleuca hypoleuca Pall.

1913 glaubte ich an ein Brüten des Trauerfliegenfängers auf Mallorca, da ich ihn noch am 12. Mai beobachtet hatte, 1921 (Vogelf. II, p. 151) fand ich meine

¹ Anmerkung: Floericke beschrieb in den *Mitteilungen über die Vogelwelt*, 1926, p. 74, den Fliegenfänger von Portugal unter dem Namen *Muscicapa grisola papamoscas*. Er hat diesen Namen offenbar meiner Vogelf. I entnommen, in der ich den mallorquinischen Namen irrtümlich in dieser falschen Schreibweise angab, während ich ihn in Vogelf. II richtigstellte; er heisst nämlich cabamoscas (caber = fangen, mosca = Fliege)! Ich verstehe allerdings, von diesem Schnitzer abgesehen, nicht, was der mallorquinische Name mit dem portugiesischen Vogel zu tun hat, aber der Autor scheint ja solche mit den Haaren herbeigezogene Namen besonders zu lieben. Dana sollten sie aber wenigstens richtig geschrieben sein!

Annahme nicht bestätigt. Diesmal beobachteten wir einzelne vom 26. iv. bis 11. v. an welchem Tage ein starker Durchzug auf der Insel Cabrera stattfand.—Henrici (p. 124) sah ein Pärchen am 5. v. bei Alcudia, "das augenscheinlich hier an seinem Brutplatz sich befand; das Nest fanden wir nicht"; hätte er sich länger dort aufgehalten, so würde er ohne Zweifel die Vögel später nicht mehr dort zu Gesicht bekommen haben. Er sah am 27. iv. auch mehrere Vögel auf Formentera.—Munn, der die Art auch jedes Frühjahr feststellte, auch einen Vogel auf dem Rückzug im September, hielt auch erst ein Brüten für wahrscheinlich, während er nun anderer Ansicht geworden ist (1925, pp. 41–42). Auf Menorca "plentiful on migration in spring" (1924, p. 455).—Der Trauerfliegenfänger ist ein regelmässiger Zugvogel, im Frühjahr bedeutend häufiger als im Herbst. Er brütet im Gebiete n i c h t.—Ich sammelte eine Reihe Belegexemplare.

Muscicapa albicollis Temm.

Der Halsbandfliegenfänger wird von Barceló als seltener Durchzugsvogel auf Mallorca, von Ponseti von Menorca genannt; beide Angaben dürften sicherlich auf Verwechslung beruhen (vergl. Munn, der dasselbe annimmt).

Phylloscopus collybita collybita (Vieill.).

Phylloscopus trochilus trochilus (L.).

Phylloscopus bonelli (Vieill.).

Phylloscopus sibilatrix sibilatrix (Bechst.).

Es brütet merkwürdigerweise kein Laubsänger auf den Balearen—*bonelli* ist bisher nicht sicher nachgewiesen, denn Homeyers Angabe (auf dieser fussend Barceló vergl. Vogelf. I, p. 40) seiner Beobachtung halte ich für irrtümlich. Die übrigen Arten ziehen in Mengen von Ende März bis erste Hälfte Mai durch, wo es tagweise von ihnen allenthalben wimmelt; so beobachteten wir diesmal einen äusserst starken Zug am 11. Mai auf der Cabrera. Die häufigste Art ist nach Munn *collybita*. Nach diesem Autor sollen auch viele auf Mallorca wie Menorca überwintern; da wir die ersten Ende März beobachteten, dürften sie doch wohl nur wenige den Winter über auf den Inseln aufhalten.—Wir schossen von den drei Arten eine Anzahl Belegstücke.

Cettia cetti salvatoris Jordans.

Der Cettisänger ist auf allen grösseren Insel verbreitet. Er brütet Ende April, Anfang Mai. Munn, Henrici und Ratcliff fanden Nester.—Ich sammelte 13 Exemplare dieses schwer zu schiessenden Vogels.

Aerocephalus arundinaceus arundinaceus (L.).

Erst 1921 gelang es mir, den Drosselrohrsänger in der Albufera nachzuweisen, denn A. v. Homeyers Angaben seines Vorkommens beruhten sicherlich auf Verwechslung (vergl. Vogelf. II, p. 153).—Henrici kam er merkwürdigerweise auch nicht zu Gesicht. Am auffallendsten aber ist es, dass auch Munn ihn bisher nicht sah, während die Albufera gerade sein nächstes Beobachtungsgebiet ist. Er schreibt noch 1926 (p. 479), er habe sein besonderes Augenmerk auf diese Art gerichtet, ohne sie aber je angetroffen zu haben. Das ist mir ganz

unverständlich, da mir auch diesmal wieder sofort beim Betreten der Albufera sein schmetterndes Lied entgegenschallte und zwar sowohl an der gleichen Stelle wie damals als auch an verschiedenen weiteren Orten des grossen Sumpfes. Er ist allerdings nicht zahlreich, aber doch überall anzutreffen, wo grössere Flächen von hohem Rohr bedeckt sind. Ich kann mir nur denken, dass Munn die Art nicht kennt und sie bisher verwechselt hat; anderseits fällt dieser Rohrsänger sowohl durch seinen Gesang wie seine Grösse so auf, dass man ihn eigentlich nicht übersehen kann.—Es gelang mir leider nicht, sein Nest zu finden, doch hatte ein Vogel am 8.vi. Futter im Schnabel und trugen an einer anderen Stelle am 17.vi. 2 Vögel eifrig Nistmaterial ins dichte unzugängliche Rohr. Ausserdem beobachtete ich ein singendes ♂ am 9.vi.27 zum ersten Male in der Albufereta. In den andern Sümpfen Mallorcas kommt er nicht vor.—Ich sammelte einige Belegstücke.

Acrocephalus scirpaceus scirpaceus (Herm.).

Der Teichrohrsänger ist ein häufiger Brutvogel der Albufera und Albufereta, wo er Ende April, Anfang Mai eintrifft. Im Juni fanden Rateliff und Munn Gelege (Jourdain, p. 80). In den anderen Sümpfen kommt er nicht vor, doch hält Munn es für wahrscheinlich, dass er auch auf Menorea brüten wird (Munn in Chamberlin, p. 155, und 1928, p. 22).—Ich sammelte 10 Exemplare.

Acrocephalus aquaticus (Gm.).

Munn erhielt einen Vogel dieser Art am 20.iv.26 in der Albufera und schoss hier einen weiteren am 22.v.25 (*Ibis*, 26, p. 470); er schreibt in Chamberlin, 1927, p. 155: "Occurs rarely in Majorca, where it is probably resident." Nach ihm soll er sich auch während des Winters in der Albufera aufhalten (1921, p. 689).—Ich habe den Binsenrohrsänger nie gesehen und sein Brüten scheint mir recht fraglich.

Acrocephalus schoenobaenus (L.).

Munn nennt den Schilfrohrsänger zum 1. Male für das Gebiet (*Ibis*, 1921): "er komme nicht vor Mitte März in der Albufera an," und in Chamberlin schreibt er: "Has occurred in Majorca, but is not common."—Ich sah die Art auch nie und glaube nicht an ihr Brüten.

Lusciniola melanopogon (Temm.) subsp. ?

Den Tamariskensänger wies Munn 1921 zum 1. Male für die Balearen nach. Im gleichen Jahre stellte ich ihn in der Albufera wie Albufereta—vor allem in ersterem Sumpfe—als häufigen Brutvogel fest. Ich sammelte eine grössere Serie. Diesmal fand ich am 16.vi. ein Nest mit 3 wenig bebrüteten Eiern.—Munn fand seine Nester von Mitte Mai bis Ende Juni und gibt eine nähere Beschreibung desselben und der Eier (1928, pp. 19-20); er hatte die Freundlichkeit, mir ein Nest mit Gelege zu schenken.—An anderen Orten des Gebietes kommt er nicht vor.

Damals schrieb ich, dass es die Nominatform sein dürfte, wenn die Vögel auch sehr hell und oberseits wenig bräunlich seien, was aber vielleicht nur eine Folge der starken Abreibung und Ausbleichung der spät gesammelten Stücke sein könne; ausserdem seien sie allerdings sehr kurzflügelig. Ich konnte nun mehr Material aus derselben Jahreszeit, also in gleichem Gefiederzustand,

vergleichen, und dabei ergab sich folgendes: Die Vögel aus dem östl. Verbreitungsgebiet (Balkan) scheinen oberseits etwas bräunlicher, spanische und balearische grauer, die schwarzen Federmitten des Rückens breiter und reiner schwarz, die Unterseite reiner weiss, die Seiten weniger bräunlich zu sein. Merkmale, die alle typisch für balearische Endemismen sind: die Unterschiede sind jedoch gering und ich würde darauf allein die Vögel Mallorcas nicht nomenklatorisch trennen. Dagegen bestehen deutliche Grössendifferenzen in den Flügelängen: Hartert gibt für melanopogon 58 bis 60 mm. an, ich mass 11 östliche mit 58 bis 61, dagegen (mit Berücksichtigung der z.T. nur geringen Abnutzung) 11 mallorquinische mit 55 bis 58, zwei südspanische 54, 56.—Die Nominatform stammt aus der Campagna bei Rom: italienische Stücke konnte ich leider nicht bekommen, daher ist nicht zu sagen, ob diese zur östlichen oder zur westlichen Form gehören und welche dieser beiden daher einen neuen Namen erhalten muss.

***Sylvia atricapilla atricapilla* (L.).**

Ich schrieb 1921: "Die Nominatform der Mönchsgrasmücke zieht auf den Balearen durch, wie zwei am 11.iii. erlegte Weibchen beweisen."—Wenn Munn und Henrici schreiben, dass *S. atricapilla* L. Brutvogel sei, so stimmt das natürlich nur insoweit, als es die endemische Form ist:

***Sylvia atricapilla koenigi* Jordans.**

Auf allen Inseln verbreiteter Brutvogel. Gelege wurden von Anfang Mai an gefunden.—Ich brachte von den 3 Reisen eine grosse Balgserie mit und die jetzt hinzugekommenen Stücke bestätigen aufs neue die von mir zuerst in Falco 1923, p. 3, und dann ausführlicher in meiner zweiten Arbeit angegebenen Unterschiede.—Nach Munn sollen einige auch überwintern, doch dürfte es sich hier wohl um nordische Vögel handeln.

***Sylvia hortensis hortensis* (Gm.).**

Homeyer schoss ein singendes Männchen (vergl. Vogelf. I). Bareeló nennt den Orpheussänger "selten auf Mallorca": nach Ponseti ist er ein seltener Durchzügler Menorca. Munn sagt 1921 (p. 688), dieser Sänger sei ein Sommerbesucher, komme Ende März oder Anfang April auf Mallorca an, sei nicht häufig; er habe alte Nester in Kiefern gefunden. Letztere Angabe scheint mir, da inmerhin eine Verwechslung vorliegen kann, so lange nicht ein Brutbeweis zu sein, bis man diesen durch gefundene Eier oder am Nest geschossene Vögel einwandfrei erbracht hat. Ich habe mir besondere Mühe auf meinen Reisen gegeben, den Orpheussänger festzustellen, habe aber nie auch nur einen Vogel gesehen, was, wenn er wirklich, wenn auch "nicht häufig," zur Brutzeit vorkommen sollte, nicht schwer sein könnte.

***Sylvia communis communis* Lath.**

Auch von der Dorngrasmücke behauptet Munn, dass er ein im April ankommender, nicht häufiger Sommerbewohner sei. Ich beobachtete sie ausschliesslich zur Zugzeit, regelmässig aber nicht häufig, von Mitte April bis Mitte Mai, so am 11.v. etliche auf der Cabrera und brachte einige Belegexemplare mit. Munn beobachtete einen besonders starken Zug am 18.iv. 23, wo sie sich 2bis 3 Tage aufhielten (*Ibis*, 1925, p. 41) und gibt ihm für Menorca (1924, p. 452) als einen

nicht sehr häufigen Durchzügler an. Ich glaube bestimmt nicht, dass die Art auf den Balearen brütet.

***Sylvia melanocephala melanocephala* (Gm.).**

Die schwarzköpfige Grasmücke ist einer der häufigsten Brutvögel auf allen Inseln in der Ebene wie im Gebirge. Ich brachte eine Serie Bälge und eine Reihe Gelege mit.—Von den ersten Tagen April ab findet man ihre Eier. Über ihre Biologie und die ausserordentliche Variabilität der Eier vergl. Munn (1921, pp. 687–88) und Henrici (1926, pp. 125–27).

***Sylvia cantillans cantillans* Pall.**

Ich schoss am 28.iv.1913 einen Vogel der Art auf Mallorca, Gosse am 19.iv. ein ♂ auf Formentera; 1921 u. 27 sah ich sie nicht. Sie brütet auf den Balearen nicht.

***Sylvia undata undata* Bodd.**

Am 20.iii.13 schoss ich eine Provence-Grasmücke im Gebirge Mallorcas. Henrici (1926, p. 165) beobachtete ein ♂ am 4.v. östlich der Albufera. Munn erwähnt in seinen Arbeiten kein weiteres Vorkommen, nur gibt er (in Chamberlin, 1927, p. 154) sie als selten im Winter in Mallorca vorkommend an; dagegen schreibt Jourdain 1927 (p. 81), dass sie in meiner Liste nicht aufgeführt sei (!), sie aber nach Munn "zweifelloser Bewohner ist und von ihm im Sommer wie im Winter beobachtet worden ist." Worauf sich diese Angabe stützt, weiss ich nicht, doch ist die Art bisher nicht als Brutvogel nachgewiesen und ich glaube auch nicht, dass sie es hier ist.

***Sylvia conspicillata* Temm.**

Munn gibt das einmalige Erbeuten dieser Grasmücke aus dem Dezember 1913 auf Menorca auf Grund einer Nachricht Ponsetis an (*Ibis*, 1926, p. 475), und ausserdem hielt sich ein Vogel der Art Anfang Oktober 26 mehrere Tage im Garten Munn's bei Aleudia auf (1928, p. 19).

***Sylvia sarda balearica* Jordans.**

Nachdem ich diese auffallende Zwergform des Sardensängers 1913 auf den Balearen gefunden hatte—Homeyer hatte die Art 1861 zuerst festgestellt—, haben alle Autoren, die die Inseln besuchten, ihr ihr besonderes Interesse zugewandt.—Henrici widmete ihr einen Artikel mit hübschen Abbildungen in den *Beitraegen zur Fortpflanzungsgeschichte der Vögel*, 1926, pp. 13–17: "Am Brutplatz von *Sylvia sarda*"; der Autor gibt darin eine eingehende Beschreibung der Lebensweise und Brutbiologie. Er fand mehrere Nester und 4 Gelege.—Jourdain, der die von Munn gesammelten Eier, oologische Kostbarkeiten, bearbeitete (übrigens hatte Polatzek bereits 1910 Eier auf Formentera gefunden) schreibt darüber 1927, p. 81, sie wichen von denen der Nominatform beträchtlich ab.—Munn fand ihn häufig auf Menorca (1924, p. 453), berichtet Weiteres von ihm, 1926, p. 469.—Ich selbst fand den Sardensänger diesmal wieder ausgesprochen häufig in jedem ihm zusagenden und für ihn so typischen Gelände auf allen Inseln.—Am 5. Mai beobachteten wir bei Campos bereits flügge Junge, von denen ich 2 schoss. Das Brutgeschäft beginnt also recht früh, Anfang April,

und erstreckt sich wohl bis in den Juli—am 21. vi. fütterte ein Weibchen auf Formentera—, so dass er 3 Bruten zu machen scheint. Da wir nicht allzuviel Zeit auf das Suchen seiner versteckt stehenden und in dem sehr gleichmässigen Gelände nicht leicht zu findenden Nester verwenden konnten, gelang es uns nicht, mehr als ein Gelege zu sammeln. Am 9. Mai erhielten wir ein Nest mit drei frischen Eiern, das in einem Asparagus—Strauch ca. 1 m. über dem Boden stand. Mir war es nicht ganz klar, von welcher Art es stammte, und die Eier kamen mir fremd vor, vor allem aber war die Nestmulde sehr tief, der übrige Bau des Nestes aber ganz typisch für sarda. Da Henrici mehr dieser Nester gesehen hatte, als ich, zeigte ich es ihm später zu Hause, und er erklärte es auch als unzweifelhaft von sarda stammend. Wir fanden dann noch am 10. v. ein Nest von ihm mit einem Ei erst in der Umgebung von Campos, doch als wir das volle Gelege nach etlichen Tagen holen wollten—wir hatten nur dieserhalb noch einmal eine Tour in die Gegend gemacht—war das Nest zerrissen! Hat man genügend Zeit, dürfte es nicht allzuschwer fallen, in den vielen günstigen Geländen eine ganze Anzahl Gelege zusammenzubringen. Herr Munn hatte die grosse Liebenswürdigkeit, mir ein Nest mit einem schönen Gelege zu schenken, wofür ich ihm nochmals besonders danken möchte.—Weitere Schilderungen über Vorkommen und Lebensweise—der Sardensänger ist Standvogel auf den Inseln—will ich mir sparen und auf die anderen Autoren verweisen (vergl. auch Koenig, Avifauna von Tunis, 1888, pp. 201–02).—Der Sardensänger heisst auf mallorquinisch—was vielleicht in Ergänzung meiner anderen Angaben zu wissen, wünschenswert ist—“Buscuret de Pi.”—Ich sammelte eine grosse Serie: Nominatform auf Corsica, Sardinien und vielleicht Sizilien; *balearica* auf den Balearen und Pityusen; ob eine und welche Form S.O. Spanien bewohnt, ist unbekannt.

Sylvia curruca curruca (L.).

Die Zaungrasmücke will Gosse am 7. iv. bei Alcludia in einem Exemplar gesehen haben, dann ebenso Munn ihren Durchzug am 18. iv. 23, wohl auch bei Alcludia (1925, p. 41). Sonst wird ihr Vorkommen nicht angegeben.

Sylvia borin borin (Bodd.).

Munn nennt die Gartengrasmücke “a summer visitor, but not common.” er habe die erste am 19. iii. 20 gesehen (vergl. Vogelf. I); 1924, p. 452, schreibt er, dass sie angeblich selten auf dem Zuge im Frühjahr und Herbst auf Menorca vorkommen solle, aber er habe kein Stück im Museum in Mahon gesehen; 1925, p. 41, er habe ein Nest mit 4 Jungen in einem Busch in den Fichten—muss heissen Kiefern—wäldern bei Alcludia gefunden (ob er die Alten sah, erwähnt er nicht) und Jourdain (p. 80) nennt sie dieserhalb einen “anscheinend spärlichen Brutvogel.” Dann heisst es bei Munn in Chamberlin, 1927, p. 154, von dieser Art: “Occurs most frequently on migration, and nests but rarely in Majorca” (!).—Ich habe nie eine Gartengrasmücke auf den Inseln gesehen, und bevor nicht ein Belegstück oder Eier vorliegen, rechne ich sie nicht zu den Brutvögeln.

Cisticola juncidis intermedia Jordans.

Der Cistensänger ist ein häufiger Brutvogel aller Inseln. Anfang Mai sahen wir flügge Junge. Über Brutgeschäft und Eier vergl. Koenig (Vogelf. II,

Anhang), Henrici, 1926, pp. 165–6, und Jourdain, 1927, p. 81; es wird als auffallend bezeichnet, dass bisher von den Balearen nur ungezeichnete Eier bekannt geworden sind.—Ich fand die von mir für diese Form angegebenen Unterschiede (S. Falco, 1923, p. 3, und Vogelf. II) an noch weiter gesammelten Bälgen voll bestätigt.

Turdus pilaris L.

Turdus viscivorus L.

Turdus philomelos Br.

Turdus musicus L.

Turdus torquatus L.

Man vergleiche in meiner Vogelf. I und II, was ich dort über das Durchziehen obiger Drosselarten schreibe, ebenso Munn 1924 und in Chamberlin 1927.—In welchen Massen die Drosseln hier überhinziehen (und auch z.T. im Winter bleiben) mag man daraus ersehen, dass der in der Einleitung genannte Vogelfänger Cosmer mir erzählte, allein er habe schon an einem Tage an 800 Stück gefangen! Er zeigte mir an verschiedenen Berghängen bei Artá Drosselfallen, die dort wie allenthalben im Gebirge Mallorca in Massen aufgestellt werden; es ist ein flacher Stein auf der Erde, der mit drei Sperrhölzern hoch gestellt wird, darunter Futter gestreut, und sobald der Vogel auf die Hölzer springt, um das etwas tiefer liegende Futter aufzupicken, erschlägt ihn der fallende Stein. Ausserdem werden Netze aller Art verwandt, die Vögel werden in Massen nach dem Festland verkauft. Der Fang und Verkauf anderer Singvögel ist nach der neuen spanischen Gesetzgebung endlich verboten.

Turdus merula hispaniae Kleinsehm.

Die Amsel ist sehr häufig auf allen Inseln. Näheres vergl. in meinen beiden Arbeiten und in denen der anderen Autoren. Die Brut beginnt im März. Sie ist natürlich Standvogel.

Turdus dauma aureus Hol.

Ponseti teilte Munn mit, dass ein Exemplar dieser sibirischen Drossel im Januar 1912 auf Menorca erbeutet wurde, was wohl der erste Nachweis des Vorkommens für Spanien bedeute (Munn, *Ibis*, 1926, p. 475).—Aus Italien ist sie nach Hartert bekannt.

Monticola saxatilis (L.).

Über die früheren Beobachtungen der Steindrossel lese man in Vogelf. I und II nach.—Diesmal sah ich sie wieder öfters im Nordgebirge, zuerst am 26. April 2 Paare bei Valldemosa; in den nächsten Tagen vollführten hier 2 Männchen ihren herrlichen Balzflug. Da ich 2 Belegexemplare von früher hatte, schoss ich keinen dieser schönen Vögel mehr. Die Steindrossel ist zweifellos ein seltener Brutvogel Mallorca.—Munn sagt von ihr, sie sei ein seltener Frühjahrsbesucher Menorca; ich möchte annehmen, dass sie auch hier vereinzelt brütet.

Monticola solitaria solitaria (L.).

Die Blandrossel ist ein auf allen Inseln verbreiteter Brutvogel (Näheres Vogelf. I und II, und bei anderen Autoren).—Munn fand am 24. iv. und 19. v. Gelege (Jourdain, p. 81).

Oenanthe oenanthe leucorrhoea (Gm.).

Diesen nordischen Steinschmätzer schoss Polatzek am 20. und 27. April 1910 auf Ibiza, ich zwei Vögel am 29.iii. und 5.iv.1913 auf Mallorca (Vogelf. I, p. 53).

Oenanthe oenanthe oenanthe (L.).

Die Nominatform des grauen Steinschmätzers beobachtete ich 1913 vom 28.iii. – 8.v. (Näheres Vogelf. I, p. 52). Wider alles Erwarten konnte ich ebensowenig wie vordem Homeyer sein Brüten feststellen. Nach dem 8.v. war kein Vogel mehr zu sehen. 1921 sahen wir den ersten am 2.iv., den letzten am 6. Mai; 1927 eine grosse Anzahl am 22. April—sie waren sicher schon früher angekommen—bei Valldemosa, die nach 2 Tagen verschwunden waren, am 26. wieder einige, die nächsten Tage ebenso, dann am 9.v. an der Südküste bei Salinas, am 11.v. ziemlich starker Zug auf der Cabrera, später in günstigstem Gelände, trotz allen Ausschauens nach ihm nicht einen Vogel mehr.—Ich schoss auf den drei Reisen eine Serie.—Munn will ein altes Nest dieser Art bei Alcudia gefunden haben; ich bezweifele die Richtigkeit (vergl. Vogelf. II, p. 161); er hält es für möglich, dass einige Vögel zur Brut zurückbleiben. Auf Menorca ist er ein nicht (?) häufiger Zugvogel. Er soll auch im Winter auf Mallorca gesehen sein (Munn in Chamberlin, p. 157).—Henrici (1926, pp. 166–7) meint, die Frage seines Brütens auf den Balearen sei sicher zu bejahen, schon weil er ein einzelnes Stück am 14.v. beobachtet habe, "das Nest stand ohne Zweifel im Mauerwerk der Mauern." Ich glaube mit Bestimmtheit sagen zu können, dass die Annahme falsch ist; am gleichen Orte beobachtete ich auch und noch später, und auch die Leute dort, die den Vogel gut kennen, sagten mir, dass er nur durchziehe. Wenn Henrici länger auf Mallorca verweilt hätte, würde er sicher dasselbe festgestellt haben. So aber kann er unmöglich Bestimmtes sagen. Seine anderen Beobachtungen auf den Pityusen, wo der Steinschmätzer ein sehr häufiger Brutvogel ist (vergl. unten) mögen ihn bei dieser Annahme wesentlich beeinflusst haben.—Die Angaben Jourdain's (pp. 81–2) sind daher auch irrtümlich.—Da das Fehlen des Vogels in dem allenthalben für ihn wie geschaffenen Gelände mir ganz unerklärlich ist—zumal er auf den benachbarten Pityusen so häufig ist—veranlasste mich natürlich, besonders überall und immer wieder zur Brutzeit nach ihm zu fahnden, aber ohne jeden Erfolg. Auch bekam ich von den Einheimischen, die den "Col blanc" so gut wegen seiner Häufigkeit auf dem Zuge kennen, die bestimmte Versicherung, dass sie ihn nie zur Brutzeit oder gar ein Nest von ihm gefunden hätten.

Das Brüten des grauen Steinschmätzers auf Mallorca, Menorca und den umliegenden Inseln ist somit nicht nachgewiesen, ich halte es nach dreimaligem dreimonatlichen Aufenthalt dort auch für höchst unwahrscheinlich—es sei denn, dass einmal ein einzelnes Pärchen zurückbliebe und zur Brut schritte. Das Fehlen ist, wie gesagt, umso unerklärlicher, als die Art auf den Pityusen ebenso häufig ist, als es das Gelände—ganz ähnlich dem auf den Balearen—wahrscheinlich macht, allerdings in einer anderen Form:

Oenanthe oenanthe nivea (Weigold).

Als wir am 21. Juni 27 nach der Pityuseninsel Formentera kamen, war ich nicht wenig überrascht, als wir überall gleich auf der Fahrt zu unserem Quartier auf Steinschmätzer stiessen. Auf der ganzen Insel, soweit wir sie kennen lernten,

ist er häufiger Brutvogel. Das Weibchen wie vor allem das alte Männchen fiel mir schon im Freileben durch die Helligkeit auf. Ich schoss eine schöne Serie, Alte und mehrere Junge. Leider waren die Vögel infolge der späten Jahreszeit schon arg abgerieben.—Auf Ibiza schien er mir nicht grade so häufig zu sein, man sieht ihn aber auch da allenthalben.—Es ist wirklich ein Rätsel, dass diese Art auf den Pityusen so verbreitet ist, während man sie auf den Balearen vergebens sucht.—Polatzek und Gosse stellten ihn auch auf den Inseln fest und sammelten einige Belegstücke (vergl. Vogelf. I und II); Henrici erhielt am 22. v. 24 ein Ei auf Formentera und beobachtete ihn natürlich auch (p. 167). Nun zur Frage der Formzugehörigkeit: Ich untersuchte ein grosses Material nordischer Steinschmätzer und solcher aus dem Mittelmeergebiet. Die Unterseite der Pityusenvögel ist sehr hell, fast reinweiss, nur die Vorderbrust etwas gelblich, etwas stärker bei den ♀♀; die Oberseite der ♂♂ ist etwas heller und reiner grau als bei deutschen, schwach oder kaum dunkler als bei *virago* von Creta, vielleicht etwas heller als bei sardinischen. Die Oberseite der ♀♀ ist viel reiner grau, nie annähernd so bräunlich wie bei der Nominatform, sehr ähnlich der der ♂♂, ein Merkmal, das Hartert für *virago* besonders betont, hierin auch von den sonst ähnlichen Sardinern deutlich verschieden. Die Ausdehnung der weissen Stirn ist sehr variabel—worauf Kleinschmidt schon in Berajah 1905 hinweist—sowohl bei topotypischen *nivea* aus Spanien wie den Pityusenvögeln wie bei der Nominatform wie bei *virago*; ich kann darin keinerlei typische Unterschiede finden. Stücke mit ausgedehntem Weiss wie solche mit geringem kommen überall vor.—Bereits die *iuvenes* sind ober- wie unterseits heller und graulicher als bei der Nominatform, was Hartert auch für *virago* angibt. Hartert betont, dass beim ♀ von *virago* die Ohrdecken dunkelbraun seien, was ich aber bei einem Stück aus dem Berliner Museum in auffallendem Maasse nicht bestätigt finde, indem hier die Ohrdecken genau die gleiche lichte Färbung zeigen wie die angrenzenden Federpartieen, von denen sie sich überhaupt nicht abheben (2 Brutvögel aus dem Taurus kann ich nicht von *virago* unterscheiden).—Nun die Grössenverhältnisse: Flügelänge maass ich bei deutschen, genau wie Kleinschmidt, mit 90–98, bei 7 spanischen Brutvögeln mit 92–100 (Weigold sagt “Die Flügel sind kurz, durchschnittlich 95, meist weniger,” was ich gar nicht bestätigt finde), 8 Pityusenvögel 92–98 (diese aber alle mehr oder weniger stark abgerieben, sodass diese Maasse in frischem Gefiederzustand einige mm. grösser sind), 5 *virago* mit 90–93, aber aus diesem geringen Material lässt sich nichts Sicheres sagen, ich möchte aber annehmen, dass sich kaum Differenzen ergeben werden.—Anders ist es mit den Schnäbeln: Obschon ich nach Harterts Methode messe d.h. vom Federansatz bis zur Spitze, fand ich andere Grössen: bei 40 Vögeln aus Deutschland und einigen aus Schweden 12, 5–15 (Maximum 2 x), bei sardinischen 13–14 (kleines Material), bei *virago* 13–15, bei südspanischen 15–17 und bei denen von den Pityusen 14–16. Die grösseren Schnäbel der beiden Letztgenannten fallen bei Augenschein viel stärker auf als es nach den Zahlen scheint, auch dadurch, dass die Schnäbel bei diesen an der Wurzel bedeutend breiter sind.

Es ist kein Zweifel, dass *nivea* aus Spanien identisch ist mit dem Steinschmätzer der Pityusen, welche Form der *virago* von Creta sehr nahe steht, von den Vögeln von Sardinien aber sowohl durch die Färbung wie die Schnabelgrösse deutlich verschieden ist.—Alle auf Mallorca gesammelten (und auch geschenen) sind typische *ocunthe* und daher schon allein sicherlich alle Zugvögel.

Ich sammelte 6 ♂♂, 2 ♀♀, 3 *iuvenes*.

Oenanthe hispanica hispanica (L.)

1913 erlegte ich 3 Mittelmeersteinschnätzer am 4. und 5. April an der Ostküste Mallorcas (Vogelf. I, p. 63). 1921 ebenso einen am 4. iv. (Vogelf. II, p. 161) und diesmal am 27. iv. von 2 Vögeln ein jüngeres ♀ im Gebirge bei Valldemosa.—Ich schrieb 1921: "Noch merkwürdiger ist das Fehlen dieses Steinschnätzers als Brutvogel auf den Balearen, da er auf dem spanischen Festland weit verbreitet ist."—Auch auf den Pityusen brütet er nicht.—Munn gibt ihn als seltenen Frühjahrszugvogel auf Mallorca und Menorca an.

Saxicola rubetra rubetra (L.)

Man sehe bitte nach, was ich über das Vorkommen des Braunkehlchens in Vogelf. I und II (pp. 161–2) sage.—1913 hielt ich sein Brüten dort für sicher, 1921 dagegen hatte ich mich vom Gegenteil ziemlich sicher überzeugt, und auf der letzten Reise ist mir dies zur Gewissheit geworden, so merkwürdig auch sein Fehlen scheinen mag; er brütet ja allerdings auch auf dem spanischen Festland südlich der cantabrischen Kette anscheinend nicht.—Munn sagt 1921 (p. 693) von dieser Art: "A summer visitor, arriving at the beginning of April, not very common"; in seiner Liste der Vögel von Menorca (1924) erwähnt er sie gar nicht, schreibt aber in seinen Ergänzungen (1926, p. 475), dass Ponseti ein Exemplar im Mai 1912 von Menorca erhielt und in Chamberlin (1927, p. 157), dass das Braunkehlchen im Frühjahr auf Mallorca sehr häufig auf dem Durchzuge sei und dass einige jeden Sommer über dortblieben, in Menorca sei nur ein Stück erbeutet worden im Mai.—Henrici (1926, p. 167, und auf diesen sich berufend Jourdain, 1927, p. 82) behauptet ebenfalls sein Brüten, indem er schreibt: "Oefters beobachtet und zwar augenscheinlich Brutvogel. Zwar fanden wir das Nest nicht, doch war das Benehmen der Vögel, wenn sie sich beobachtet glaubten, . . . genau wie bei uns in Nestnähe. So am 5. und 7. v. bei Alcudia und am ii. v. 1924 bei Valldemosa.—Auf dem Zuge sahen wir Braunkehlchen am 17. iv. auf Menorca und am 27. iv. 25 auf Formentera."—Es gilt hier dasselbe, was ich bezgl. der Auslassungen des Autors über das Brüten des Steinschnätzers sagte; wäre er länger in derselben Gegend geblieben, so würde er ohne Zweifel gesehen haben, dass sie nach einigen Tagen verschwunden waren und durchaus nicht brüteten. Ich sah diese und andere Zugvögel sowohl in Gesellschaften wie in einzelnen Paaren wie in einzelnen Exemplaren oft mehrere Tage an der gleichen Örtlichkeit, und ich war auch öfters geneigt—vor allem, wenn die Vögel noch bis in den Mai hinein gesehen wurden—, hieraus wie auch aus ihrem Benehmen auf ein Bleiben und Brüten zu schliessen, zu Unrecht, wie es sich dann aber stets herausstellte.—Es ist schon deshalb falsch aus dem Verhalten eines Vogels während der noch im Gange befindlichen Zugzeit solche Schlüsse zu ziehen, da der Zugtrieb wohl z.T. eine Folge einsetzenden Bruttriebes ist, und während der Vogel an ihm zusagender Örtlichkeit eine Zugpause eintreten lässt, auch seine ganze Haltung bereits unter diesem Bruttrieb steht; man denke nur einmal an den Frühjahrs-Schnepfenzug bei uns.—Meine letzte Reise galt ja in der Hauptsache der Nachprüfung grade solcher bisher fraglicher Beobachtungen und Vermutungen, und daher glaube ich, wirklich ein objektives Urteil jetzt abgeben zu können. Ich bin überzeugt, dass auch Munn insofern Unrecht hat, dass er entweder falsch beobachtete oder aber, dass ein Vogel vielleicht wirklich einmal zurückbleibt ohne deshalb zu brüten; jedenfalls ist bisher

kein Beweis für das Gegenteil erbracht und m.E. wird er auch nicht erbracht werden.—Auf allen drei Reisen sahen wir das Braunkehlchen häufig auf dem Zuge von Ende März bis Mitte Mai (äusserstes Datum 16.v.); in der Mitte des April schien der Hauptzug stattzufinden, der dann bis in den Mai hinein—in einzelnen Exemplaren an vereinzelteten Tagen—zu Ende ging.—Auch meine Gewährleute dort sagten mit aller Bestimmtheit übereinstimmend, dass die Art nie auf der Insel zur Brut schreite.

***Saxicola torquata rubicola* (L.).**

***Saxicola torquata insularis* (Parrot).**

? ***Saxicola torquata desfontainesi* Blanchet.**

! ***Saxicola torquata graecorum* Laubmann.**

Das Schwarzkehlchen ist ein sehr häufiger Standvogel auf allen Inseln, in der Ebene wie im Gebirge. Die Brut beginnt bereits im März (vergl. a. die anderen Autoren).

Ich muss hier auf einige beschriebene Formen der Art etwas ausführlicher eingehen. Dass *insularis* Parrot von den tyrrhenischen Inseln sich weder in der Färbung noch in den Maassen von der Nominatform unterscheiden lässt, daher als Synonym zu gelten hat, dürfte jetzt wohl von allen Autoren anerkannt werden.—Nun wurden neuerdings zwei weitere Formen beschrieben: Blanchet trennte das Schwarzkehlchen von Tunesien unter dem Namen *Saxicola torquata desfontainesi* in der *Revue Française d'Ornithologie*, ix, pp. 277–8, 1925, ab auf Grund abweichender Färbung in allen Kleidern (Näheres s. Originalbeschreibung) und grösserer Maasse: Flügellänge 66–9, Schnabel 12–13 mm.; in letzterem Merkmal bestche ein durchschnittlicher Unterschied von 1 mm. Zu dieser Subspecies gehörten nach ihm wahrscheinlich alle Schwarzkehlchen von N.W. Afrika, vielleicht bis Marocco. Sie gliche der *insularis*, sei aber grösser.—Hartert (*Mém. Soc. Sc. Nat. du Maroc*, 1926, p. 18) bezweifelt einen Färbungsunterschied, erkennt die Form aber wegen um 1 mm längeren Schnabel an, während er eine Differenz der Flügellänge (65–9, sogar bis 70) auch nicht sehen kann. Er rechnet dazu die Vögel von Tunesien, Nordalgerien und Marocco, vielleicht gehörten dazu aber auch die der Pityusen, die auch den längeren Schnabel besässen.—Kleinschmidt schreibt in *Falco*, 1927, p. 7, dass *desfontainesi* auch auf Sardinien vorkomme, man müsse einheimische Vögel und Wintergäste natürlich auseinanderhalten, *desf.* habe auch im Winter längeren Schnabel.

Ferner beschrieb Laubmann (*Verhdlg. Ornith. Ges. Bayern*, 1927, p. 351) das griechische Schwarzkehlchen unter dem Namen *Saxicola torquata graecorum* subsp. nov. (Typus: Korfu, ♂ 5.x.25) wegen geringerer Flügellänge; ihm vorliegendes Material aus Griechenland messe 63, 64 und 64,5 mm., ein Unterschied, auf den schon Reiser, Parrot und Stresemann aufmerksam gemacht haben.

Ich habe auf diese Beschreibungen hin nun mein grosses Material balearischer Brutvögel (27 nebst 2 von Ibiza) genauest an Hand grosser Serien verglichen: Es ergaben sich keinelei Färbungsdifferenzen zwischen vergleichbaren Individuen, die individuelle Variation der Tönung und der Ausdehnung der verschiedenen Färbungscentren ist beträchtlich aber bei allen Populationen gleich. Mir schien dies erst bei den n.w. afrikanischen anders und der Beschreibung von Blanchet entsprechend zu sein, doch besteht hier die Differenz lediglich

darin, dass die Exemplare aus dieser Gegend früher abgerieben und daher schon im März z. B. oberseits fast einfarbig schwarz sind, während dieser Abreibungsprocess entsprechend den späteren Brutzeiten je nördlicher desto später dieses Ausmass erreicht; nordeuropäische Vögel sehen erst im Juni so aus, aber dann schwindet jeder Unterschied aller Federpartieen der Ober- wie Unterseite; natürlich darf man nur gleichaltrige Exemplare vergleichen und solche gleicher Punkte der Variationsreihe.

Nun die Maasse: Nordeuropäische maas ich mit 64-70 mm. Flügellänge und 10-12 mm. Schnabellänge; solche aus Slavonien, Dalmatien, Heregovina, Rumaenien, Italien (diese ohne Differenzen untereinander) mit 64-68 bzw. 10-12. Bei dem Typus von *graeorum* (Wintervogel!) 65, bei einem Brutvogel von Korfu 66, bei weiteren drei Griechen 65-67 bzw. 10-11. Stresemann gibt in seiner Avifauna Macedonia die Maasse von 53 macedonischen Stücken mit ♂ 62-69, ♀ 62-66 an.—Ich habe bei dem ausserordentlich umfangreichen Material, das ich untersuchen konnte, niemals eine Flügellänge mit weniger als 64 mm. gemessen; ob die geringer angegebenen Maasse wirklich von ausgemeaserten Exemplaren stammen?! Wenn Letzteres nicht der Fall sein sollte, könnte ich die Form *graeorum* nicht anerkennen, ich möchte deren Berechtigung zwar so nicht in Abrede stellen aber sie wohl fraglich oder unentschieden lassen.—Ich mass ferner eine Serie von 14 Corsikanern mit 65-68 bzw. 10-11·5, zehn Sardinier mit 64-67 (vergl. *graeorum*!) bzw. 10-12 (also nicht "*desfontainesi*"), 27 Balearen mit 66-70 bzw. 10-12·5, die 2 Ibizaner, 66, 67 bzw. 11, 12. Nun noch die N.W. Afrikaner: *Cotypus* von *desfontainesi* und 7 weitere 65-70 bzw. 10-12·5 Algerier (Brutzeit) 68-70 bzw. 11-13 (i x), ferner 3 Maroccaner 65-67 bzw. 11-12; ausserdem eine Anzahl Wintervögel mit 65-69, bzw. 10-12.—In den Flügelmaassen vermag ich mit Hartert keinen konstanten Unterschied festzustellen; was die Schnabellängen angeht, so muss ich zunächst darauf hinweisen, dass hier sehr ungleich grosses Material gegenübersteht; während bei allen übrigen das Extrem von 12 mm. verhältnismässig selten ist, kommt es bei sicheren Brutvögeln aus Tunesien und Algerien verhältnismässig (geringes Material!) oft vor, und ich fand hier nur einmal 10 aber dafür auch einmal 13 mm.—Es ist unbedingt grösseres Brutmaterial aus N.W. Afrika nötig, um sagen zu können, ob tatsächlich hier der um $\frac{1}{2}$ -1 mm (!) längere Schnabel typisch ist und, wenn das der Fall sein sollte, so mag es dem Einzelnen überlassen bleiben, ob er glaubt, dass deswegen eine Population einen eigenen Namen bekommen soll, oder, was dasselbe heisst, ob diese Feststellung unsere Erkenntnis irgendwie fördert.

***Phoenicurus phoenicurus phoenicurus* (L.).**

In meiner ersten Arbeit schrieb ich vom Gartenrotschwanz: "Er brütet wohl überall in den Olivenhainen, aber nur vereinzelt; auf Menorea ist er gleichfalls Brutvogel (Ponseti)," 1921 dagegen hielt ich die Brutangabe für einen Irrtum, wenn auch "vielleicht ganz vereinzelt ein Paar zur Brut schreiten mag, aber weder Munn noch ich konnten dies feststellen"; auch 1927 sagt Munn (Chamberlin, p. 156), er habe zur Brutzeit nie ein Exemplar gesehen, während er zur Zugzeit häufig sei. In der letzten Dekade März beginnt der Zug langsam und die letzten sah ich am 2. bzw. 4., bzw. 11. bzw. 20. Mai, der Hauptdurchzug ist in der ersten Hälfte des April, zuerst fast nur Männchen, dann beide Geschlechter und zuletzt nur oder doch fast nur mehr Weibchen.—Während ich die beiden anderen Male, wie gesagt, die letzten in den ersten Tagen des Mai beo-

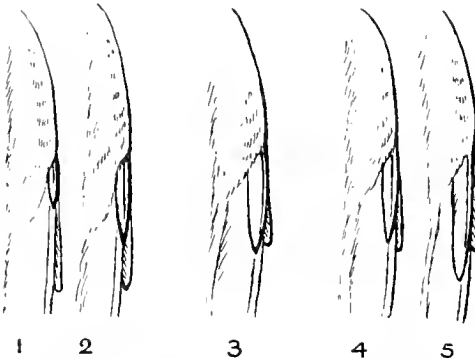
bachtete, war diesmal noch am 11. auf der Cabrera ein recht starker Zug, aber auch nur an diesem einen Tage. Ferner sah ich am 20.v.27 und tags darauf an derselben Stelle in altem Laubwald ein ♂, das sich ganz wie ein Brutvogel benahm, ohne dass ich aber damit in denselben Fehler fallen, und sein tatsächliches Brüten damit als erwiesen ansehen will, zumal ich später nicht mehr in diese Gegend kam.—Ein Brutnachweis ist nicht erbracht, doch halte ich ein ganz vereinzelt Brüten für nicht unwahrscheinlich.

Phoenicurus ochruros ater (Br.).

Der Hausrotschwanz ist auf allen Inseln ein sehr häufiger Durchzügler und soll sich auch den Winter über hier aufhalten, jedoch brütet er nicht im Gebiete.

Luscinia megarhynchos luscinoides Jordans.

Die Nachtigall ist in der von mir beschriebenen Form (vergl. *Falco*, 1923, p. 3, und *Vogelf. II*) ein ungemein verbreiteter Brutvogel aller Inseln ein-



1. *Luscinia luscinia* (L.) ♂ 30.5. Öland. Minimum.
2. 13.6.1908, Öland, Maximum.
3. *Luscinia megarhynchos megarhynchos*, normal, ♂ 9.6.1908, Sachsen.
4. *L. megarh. luscinoides*, Mallorca, ♂ 9.5.1913. Minimum.
5. *L.m. luscinoides*, Mallorca, ♂ 16.5.1921, Maximum.

Die beigefügten Zeichnungen, die mir liebenswürdigerweise Herr Pastor Dr. Kleinschmidt anfertigte, zeigen die merkwürdigen Schwingenverhältnisse der balearischen Nachtigall gegenüber denen der Nominatform und des Sprossers (vergl. hierzu *Vogelf. II*, p. 163).

Luscinia svecica cyanecula (Wolf).

Das Blaukehlchen ist ein nicht häufiger, eher seltener Zugvogel im Frühjahr, nach Barceló auch im Herbst (vergl. *Vogelf. I*, p. 57). Ich sah die Art am 27. bzw. 30.iii. und 3.iv.—Herr Mumm hatte die grosse Freundlichkeit, mir jetzt ein von ihm am 22.iii.27 geschossenes Belegstück (♂) zu schenken, wo er ausserdem noch ein zweites ♂ schoss und weitere sah (1928, p. 30).

Erithacus rubecula rubecula (L.).

Das Rothkehlchen ist auf den Inseln häufig zur Zugzeit und den Winter über, es brütet nicht hier (vergl. *Vogelf. I* und *II*).

Prunella modularis modularis (L.).

“ Die Heckenbraunelle brütet ebensowenig auf der Inselgruppe, die gegen- teiligen Angaben Barcelós und Ponsetis beruhen auf Irrtum. Auch nach Münn nur Wintervogel und nicht häufig ” (Vogelf. II, p. 164, vergl. auch I, p. 58).

Troglodytes troglodytes mülleri subsp.n.

Ich bitte das in Vogelf. II, pp. 164–65, Geschriebene nachzulesen, um hier nicht zu viel wiederholen zu müssen. Diesmal verdanke ich der Liebenswürdige- keit Herrn Dr. Harterts, dass ich endlich meine Zaunkönige mit genügendem Material n.w. afrikanischer *kabyorum* vergleichen konnte; das Resultat ergab ihre Verschiedenheit. Unterschiede in den Maassen weder der Schnäbel noch der Flügel zwischen der Nominatform, *kabyorum* und der balearischen vermochte ich doch nicht festzustellen. Die Ausdehnung und Stärke der Bänderung variiert bei allen Formen sehr stark, ich vermag da keinerlei Differenzen in der Variationsbreite zu sehen. Ich untersuchte 27 Mallorcaner, 11 *kabyorum* und eine grosse Anzahl der Nominat- und anderer Formen. Die Unterschiede liegen in der Färbung: Mallorcaner oberseits heller, fahler, graubrauner als *kabyorum*, ebenso die Färbung der Schwingen; unterseits ähnlich wie *kabyorum*, viel heller und grauer als bei *troglodytes*. Die Oberseite fast so hell wie bei dem asiatischen *pallidus*, dessen Unterseite aber etwas reiner grau weniger rötlich ist. Die n.w. afrikanische Subspezies stellt somit in der Färbung zwischen der balearischen und der nördlichen Nominatform. Die südspanischen scheinen mir sicher zu *kabyorum* zu gehören (vergl. meine diesbezügl. frühere Bemerkung), was auch schon Hartert wahrscheinlich schien (Nachtrag I, pp. 62–63).

Typus: ♂ 12. iv. 1913, Valldemosa, Mallorca. Coll. v. Jordans.

Ich benenne die Form zu Ehren des Deutschen Consuls in Palma Herrn Alfred Müller, der uns—worauf ich in den Einleitungen besonders hinwies—auf allen 3 Reisen in entgegenkommendster und tatkräftigster Weise unterstützte, welcher Hilfe ich zum grossen Teile meine Erfolge an Ort und Stelle zu danken habe.

Der Zaunkönig lebt auf allen Inseln der Gruppe. “ Er ist auf Mallorca ein echter Gebirgsvogel und wir trafen ihn überall vom Fusse der Berge bis hoch hinauf, jedoch meistens die obere Waldgrenze nicht überschreitend; dort fehlt er nirgends, ist aber auch nirgends häufig. Ein scheuer Geselle, der sich nicht leicht erwischen lässt ” (Vogelf. I, p. 59). Dort, wo es in der Ebene ihm zusa- gendes dicht bewachsenes Gelände gibt, sieht man ihn aber auch hin und wieder. —Die Brutzeit fällt in den April und Mai.

Parus major mallorcae Jordans.

Weitere 6 Exemplare stimmen ganz in die frühere Serie von 18 Stücken dieser deutlichen Rasse, zu der auch die Kohlmeise der Pityusen gehört (auf Formentera sahen wir keine Meise). Durch das neue Material verschoben sich die früher angegebenen Flügelmaasse etwas; es dürfte nunmehr die Variations- breite vorliegen: ♂ 70–75, ♀ 69–74. Über die Verbreitung vergl. Vogelf. I und die anderen Autoren. Wir beobachteten sie jetzt doch auch verschiedentlich in der Ebene, wenn auch nicht weit ab vom Fusse der Berge. Die Brutzeit beginnt Ende April.

Parus coeruleus balearicus Jordans.

Das Gleiche gilt von der Blauweisse (ich sammelte noch 3 Vögel). Sie ist bedeutend seltener als die vorige, und es kann vorkommen, dass man tagelang kein Stück zu Gesicht bekommt. Der Ebene scheint sie zu fehlen.

Parus ater L.

Nur Barceló behauptet ihr Vorkommen (vergl. Vogelf. I, p. 62)—eine Angabe, die offenbar jeder Grundlage entbehrt; die Tannenweisse ist damit aus der Liste der Balearenvögel zu streichen. Ebenso auffallend ist das Fehlen anderer Meisenarten.

Regulus ignicapillus balearicus Jordans.

Ich besitze jetzt 18 Goldhähnchen von Mallorca und verweise auf die Beschreibung der Form in *Falco*, 1923, p. 23, Vogelf. II, pp. 165–66, und betr. seiner Verbreitung auf Vogelf. I, pp. 62–63.—Auf den Pityusen sah ich es nicht, und ob es auf Menorca brütet, ist fraglich; hier wurde ein Vogel im Oktober 1916 erbeutet (Munn, 1926, p. 475).

Regulus regulus (L.).

Die Brutangabe Barcelós beruht auf Irrtum; das Wintergoldhähnchen ist aber ein nicht häufiger Winterbesucher (Munn).

Sitta europaea L.**Certhia brachydactyla** Br.

Weder die Spechtweisse noch der Baumläufer kommen merkwürdigerweise im Gebiete vor.—Barcelós gegenteilige Angaben sind falsch und Homeyers Meinung, einmal eine *Sitta* gehört zu haben, sicherlich irrtümlich (vergl. Vogelf. I, pp. 63 u. 64).

Tichodroma muraria (L.).

Ein Mauerläufer wurde nach Ponseti im November 1920 auf Menorca erbeutet (Munn, *Ibis*, 1926, p. 475).

Alauda arvensis L.

Dass die Behauptung Barcelós und Ponsetis vom Brüten der Feldlerche zweifellos auf Irrtum beruht, sagte ich schon in meiner I. Arbeit. Als Zugvogel ist sie häufig und nach Munn auch während des Winters gemein.

Lullula arborea (L.).

Ich sah die Heidelerche nie, während sie nach Munn im April auf Mallorca durchzieht—von Menorca ist sie nicht nachgewiesen—, und wohl auch einzelne Vögel zur Brut zurückblieben, was ich bestimmt nicht glaube.—Mitte Januar 1926 hielt sich eine grosse Menge Heidelerchen einige Zeit im Gebiete um Alendia auf (Munn, 1928, pp. 18–19), während der Autor sie vordem nie im Winter, sondern nur im Frühjahr gesehen hat.

Calandrella brachydactyla brachydactyla (Leisl.).

Die Kurzzeherlerche ist ein gemeiner Brutvogel im ganzen Gebiete. Die Brutzeit beginnt im April. Über Eier vergl. Henrici, Jourdain und Koenig, über Maasse der Vögel und Nomenclatur Vogelf. II, p. 167; auch diesmal konnte ich keine Bälge aus der typischen Lokalität der Nominatform (Südfrankreich) vergleichen.

Ich schrieb 1921, dass *Calandrella minor* (Cab.) erstaunlicherweise den Balearen fehle. Henrici erhielt nun auf Formentera ein Nest mit 2 Eiern, deren sichere Bestimmung trotz vielen Vergleichens nicht gelingen wollte. Er schreibt 1926, p. 169: "Bis heute ist die Diagnose nicht ganz sicher, trotzdem die beiden Stücke inzwischen den verschiedensten Begutachtern vorgelegen haben," und er "neigt nun nach den mannigfachsten Vergleichen und Studien dazu, Herrn Schönwetter—Gotha recht zu geben, der diese beiden Eier obiger Art zuschreibt."—Begreiflicherweise setzte ich nun Alles daran, auf Formentera *C. minor* zu finden: dabei stiess ich auf mir auffallende, recht scheue kleine Lerchen, die mir durch ihre grosse Helligkeit fremd schienen, bis ich durch Schiessen einiger Stücke feststellte, dass dies in kleineren und grösseren Trupps vergesellschaftete junge Stummellerchen waren. Nirgends auch nur eine Spur der anderen Art, und ich halte es für ausgeschlossen, dass sie mir hier oder auf Ibiza entgangen sein sollte: über die obengen. Eier lese man bitte in der demnächst erscheinenden oologischen Arbeit Koenigs nach.—Herr Dr. Henrici sagte mir jetzt, dass er inzwischen Gelege von *C. minor* erhalten und anhand derer festgestellt habe, dass das von ihm von Formentera mitgebrachte, fraglich dieser Art zugeschriebene zweifelsohne nicht von dieser stamme, und Geh. Rat Koenig, der ein Ei des Geleges nochmals untersuchte, wird sicherlich recht haben, wenn er es für ein abnorm gefärbtes Gelege der Theklalerche hält. *C. minor* kommt im Gebiete nicht vor.

Galerida theklae polatzeki Hart.

Meinen eingehenden Ausführungen über die Theklalerche in meinen beiden früheren Arbeiten habe ich nichts hinzuzufügen. Sie ist ein gemeiner Standvogel aller Inseln.—Über die Oologie vergl. Koenig, Henrici und Jourdain.—Eine Beobachtung dürfte noch von Interesse sein: Am 27. April 27 hörte ich im Gebirge bei Valldemosa von derselben Stelle her den Gesang eines Rotkopfwürgers, wechselnd mit dem mehrerer anderer Arten wie Sammtköpfchen, Kohlmeise, einigen Tönen einer Steindrossel, dann wieder die Anfangsstrophe des Buchfinken, dazwischen Haubenlerchentöne und schliesslich stümperhaft den Gesang des Sardensängers, der mir in dieser Gegend—zwischen freistehenden alten Olivenbäumen—höchst merkwürdig vorkam. Als ich vorsichtig näher ging, sah ich zu meinem Erstaunen auf einem Steinhaufen eine Haubenlerche sitzen, die alle diese Gesänge stark wechselnd in rascher Reihenfolge zum besten gab; ich habe selten ein so starkes und verschiedenartiges Spotten gehört. Nur hier auch hatte ich den von ihr imitierten Gesang einer Steindrossel gehört. Lange habe ich ihr aus nächster Nähe gelauscht, bis sie von ihrem Steinhaufen zur Erde flog, Nahrung suchte und dazwischen nur mehr ihr eigenes Lied singend und ihre langgezogenen Rufe hören lassend.¹

¹ Anmerkung Wegen der angeblich von den Balearen stammenden Bälge von *Chersophilus duponti* vergl. Vogelf. I und II, p. 166; dieselben trugen offensichtlich falsche Etiketten.

Budytes flavus fasciatus Zander.

Diese Form der Schafstelze brütet auf Mallorca in dem ihr zusagenden Sumpfgelände allerorts in grosser Anzahl. Sie trifft im März ein und beginnt das Brutgeschäft in der 1. Hälfte April. Auch Menorca und den Pityusen fehlt sie nicht.—Betr. Nester und Eier vergl. Koenig, Henrici und Jourdain, betr. Nomenclatur Vogelf. I und II.

Budytes flavus borealis Sund.

“ Die nordische Schafstelze beobachteten wir auf dem Zuge Mitte Mai . . . und schossen einige Belegexemplare ” (Vogelf. I, p. 71), 1921 “ sah ich am 8. v. eine auf dem Zuge ” (Vogelf. II, p. 169), diesmal sahen wir einen kleinen Flug am 12. v. auf der Cabrera niedrig von S. nach N. ziehend.

Budytes flavus flavus (L.).

Munn erwähnt als einziger Autor die Nominatform, von der er (1926, p. 468), am 27. iv. 25 einen kleinen Flug beobachtete und 2 Vögel schoss; er schreibt (Chamberlin, p. 152): “ Only occurs on migration in spring in Majorca. ”—Sie wird sicher auf den Inseln regelmässig durchziehen.

Motacilla alba alba L.

Die weisse Bachstelze brütet nach meinen Beobachtungen und den übereinstimmenden Aussagen der Einwohner nicht auf den Balearen. Dagegen ist sie als Durchzugsvogel nicht selten, nach Munn sogar im Winter gemein.—Munn meint (Vergl. Vogelf. II), ein oder zwei Paare blieben über den Sommer dort und brüteten auch vielleicht, was sicherlich aber nicht der Fall ist, und was er 1927 auch selbst nicht mehr erwähnt.—Barcelós Brutangaben (vergl. Vogelf. I) sind irrig.—Wir sahen die Art in den ersten Tagen April und schossen Belegstücke.

Motacilla alba yarellii Gould.

Munn schreibt im *Ibis*, 1925, p. 40: “ A rare straggler to Majorca. The male of a pair was shot at Puerto Aleudia on 5. March 1923. ”—Es ist dies der erste und einzige Nachweis des Durchzugs der dunklen (englischen) Form der weissen Bachstelze für unser Gebiet. Ihr Zugweg geht durch Spanien und Portugal.

Motacilla cinerea Tunst.

Die Gebirgsbachstelze, die in Ermangelung im Sommer nicht austrocknender Bäche auf den Inseln nicht brütet, hält sich im Winter auf. Wir sahen sie im März bis in die ersten Tage April, und ich schoss ein Belegstück.

Anthus campestris campestris (L.).

Wir schossen eine grössere Serie Braehpieper. Er ist auf allen Inseln ein verbreiteter Brutvogel, der in den letzten Tagen des März eintrifft. Gelege findet man ab Anfang Mai; über Brutgeschäft und Eier vergl. Munn, 1925, pp. 40–41.—Henrici schreibt (1927), dass er die Art nur zweimal gehört habe, was ich angesichts der allgemeinen Verbreitung nicht verstehe.

Anthus trivialis trivialis (L.).

Der Baumpieper zieht im Frühjahr (Mitte bis Ende April) und im Herbst (nach Munn im September) auf den Inseln in kleineren und grösseren Flügen durch. Ich schoss einige.

Anthus pratensis pratensis (L.).

Auch der Wiesenpieper ist ein häufiger Durchzügler, und besonders im Winter (nach Munn) auf Mallorca und Menorca gemein.—1913 sah ich noch am 13. Mai auf der Cabrera einige Pieper, deren Artzugehörigkeit ich nicht feststellen konnte, aber, da ich nun dieses Mal auf der gleichen Insel am 11. v. wieder einige Pieper dort auf dem Zuge beobachtete, welche Wiesenpieper waren, so werden auch die damaligen zu dieser Art gehört haben.—Ich schoss Belegexemplare.

Anthus spinoletta spinoletta (L.).

Als einziger Autor gibt Ponseti—dessen Aussage dann auch Munn erwähnt—das Durchziehen des Wasserpiepers von Menorca an; ob die Bestimmung richtig ist, ist nicht festzustellen. Nicht viel anders verhält es sich mit der englischen Form dieser Art:

Anthus spinoletta obscura (Lath.)

dem Strandpieper; vergl. hierzu Vogelf. I, p. 73: "Fraipont schreibt in seinen Oiseaux Colecc. zool. du Baron E. de Selys Longchamps, Catal. syst. Fasc. 31, Bruxelles, 1910, auf Seite 54: "*Anthus obscurus*. Baléares." Wenn ich auch die Richtigkeit in Zweifel ziehen möchte, so muss ich doch in dieser Zusammenstellung die Angabe selbst erwähnen.

Coccothraustes coccothraustes coccothraustes (L.).

Der Kernbeisser zieht vereinzelt durch—ich schoss einen Vogel auf Mallorca, Gosse sah ihn Mitte IV. auf Ibiza (vergl. Vogelf. II)—und soll sich nach Munn in strengen Wintern auf Mallorca und Menorca zeigen (1924, p. 450, 1925, p. 40).

Chloris chloris mallorcae Jordans.

1913 zog ich den auf allen Inseln der Balearengruppe so häufigen Grünfinken noch zu der Form *aurantiventris*, trennte ihn dann aber an Hand grossen gesammelten Materials—mir liegen nun 36 Stücke vor—nach eingehendem Vergleiche mit umfangreichen Serien der übrigen Formen als eigene Subspecies ab. (Ich verweise dazu auf *Falco*, 1923, pp. 3–4, und Vogelf. II, pp. 382–84.)—Wenn Munn den Grünfinken Menoras *aurantiventris* nennt (1924, p. 449), so zweifle ich nicht, dass dieser auch zu *mallorcae* gehört.—Die Brutzeit beginnt Ende April; betr. Eier vergl. Koenig, Jourdain und Henrici.

Chloris chloris aurantiiventris Cab.

Auffallenderweise scheint mir der Grünfink der Pityusen nach 10 untersuchten (allerdings zum grossen Teile stark abgeriebenen) Exemplaren zu dieser Form zu gehören.

Carduelis carduelis propeparva Jordans.

Der Distelfink ist ein verbreiteter Standvogel aller Inseln, der nur das höhere Gebirge meidet. Die Brutzeit beginnt Ende April (vergl. Koenig, Jourdain, Henrici).—Hinsichtlich der subspezifischen Unterschiede der hier inbetracht kommenden Formen verweise ich auf *Falco*, 1923, p. 4, und auf meine auf sehr grossem Material fussenden—allein 44 Vögel von den Balearen-Pityusen—eingehenden Vergleichsergebnissen in meiner 2. Arbeit, pp. 384–89.

Acanthis spinus (L.).

Der Zeisig wird von Barceló ein häufiger Zugvogel Mallorca's, von Ponseti als solcher Menorca's bezeichnet, und Munn (1924, p. 450) schreibt, dass er Menorca im Winter in geringer Anzahl besuche.

Acanthis citrinella (L.).

„Der Citronenzeisig soll nach Barceló als sehr seltener Gast auf Mallorca vorkommen,“ schrieb ich in meiner 1. Arbeit. Dieser Angabe ist kein Gewicht beizulegen, ich bezweifle, ob der Autor die Art überhaupt kannte.—Dann aber gelang es angeblich Henrici 1924 und 1925, ihn sogar als Brutvogel festzustellen; er überschreibt seinen Artikel (1927, pp. 9–10) „Zweimal mit Sicherheit als Brutvogel beobachtet“ (Dies von Jourdain 27, p. 35 citiert) und zwar beide Male auf Mallorca, während er „in den öden steinigten Hängen der Westküste von Formentera wieder die Art am 20. v. 24 hörte, in diesem sehr schwierigen Terrain aber vom Nest nichts fand; es schien sich auch um ein Pärchen mit ausgeflogenen Jungen zu handeln“ (!). Auf Mallorca hörte er am 7. v. 24 auf dem Cap del Pinar östlich Alcudia „den charakteristischen Lockton eines Zeisigs“ und fand das Nest in einer Kiefer; es „enthielt 4 einige Tage alte Junge.“ Über eine Beobachtung der Alten sagt er weiter nichts.—Dann fand er am 2. v. 25 in den Vorbergen des Monte San Salvador etwa 10 m hoch auf dem Seitenast einer Kiefer ein Nest mit drei Eiern, nachdem er vorher den „hiäk“ Ruf des alten Vogels gehört und „an dem charakteristischen Lockruf und dem ganzen Benehmen des Vogels sofort erkannt hatte, dass es sich um den im vorigen Jahre . . . beobachteten Zitronenzeisig handelte.“ „Wir haben nun genügend Zeit und Gelegenheit, das Pärchen zu beobachten und erkennen deutlich die grünelbe Färbung der Unterseite“ (!).—Henrici beschreibt dann das Nest und die Eier.

Diese bestimmten Angaben veranlassten mich natürlich, die erdenklichste Mühe aufzuwenden, diese interessante Art nun auch selbst zu finden, was in Betracht der genauen, auch mündlich mir wiederholten Fundortsbeschreibung nicht allzu schwer fallen konnte. Obschon ich das nur einige hundert Quadratmeter grosse Gelände des Cabo Pinar und ähnliche, diesem ganz entsprechende Lokalitäten auf das genaueste kannte—das Gelände entspricht auch ganz jenem genannten auf Formentera—, hatte ich den Vogel nie bemerkt, was mich einestheils ärgerte aber andererseits auch skeptisch machte. Immerhin war es möglich, dass mir ein so kleiner und ev. auch hier nur seltener Vogel hatte entgehen können. Auf dieser letzten Reise machte ich daher eigens zu diesem Zweck eine Tour in jenen Kiefernwald bei San Salvador, den ich bis dahin noch nicht kannte. Es ist ein mit kleineren und grösseren, alten und jungen Kiefernbeständen,

stellenweise mit dichtem Unterholz durchsetztes Hügelgelände. Vergebens hatten wir dieses schon an 2 Tagen nach allen Richtungen durchstreift, als ich plötzlich einen mir fremd vorkommenden, zeisigähnlichen Ruf vernahm und einen kleinen Vogel eilig vorüberfliegen sah, der dann im Kieferwald verschwand und bald wieder ziemlich entfernt seinen Ruf hören liess. Ich sah ihn schliesslich, nachdem er wiederholt abgeflogen war, auf dem Seitenast einer alten Kiefer sitzen und in kurzen Abständen "hiäk" rufen, auch mit dem Glase deutlich seine "grünelbe Färbung der Unterseite." Endlich holte ihn mein Schuss herunter und hocheifrig, in der Überzeugung den gesuchten Vogel erwischt zu haben, hob ich einen—Girlitz auf!! Später hörte ich hier und noch zweimal an anderer Stelle—auch an der W. Küste Formenteras—den gleichen Ruf und erkannte wieder einwandfrei einen Girlitz. Dieser ist ausserordentlich häufig auf den Balearen, jenen Ruf scheint er aber nur verhältnismässig selten von sich zu geben.—Herr Munn, den ich dann später in Alendia aufsuchte und mit dem ich auch über den Zitronenzeisig sprach, war bereits zu wiederholten Malen seinem wegen zum Cabo Pinar gefahren, hatte aber auch nie ihn sondern nur den Girlitz dort gefunden, und so sah ich, da ich das Cap schon genau kannte, hier auch sonst nichts zu holen war, von einer Tour dahin, die einen Tag in Anspruch nimmt, ab, da es für mich ausser Zweifel steht, dass Henrici, der den Zitronenzeisig auch aus der Natur sonst nicht kennt, sich geirrt hat (vergl. Munn, 1928, p. 18).—Die Beschreibung des Nestes und sein Standort stimmt ganz mit *Serinus* überein—wie ich es dort auch fand—, über seinen Ruf schrieb ich oben und die Eier sind auch kein Beweis. Solange kein Vogel vorliegt, glaube ich nicht an ein Brüten des Zitronenzeisigs auf den Balearen, nicht einmal ein gelegentliches Vorkommen ist bis heute nachgewiesen. Ich bedauere auf Grund meiner Beobachtungen die Richtigkeit von Henricis Angaben in Abrede stellen zu müssen, obschon er bei einem späteren Besuch bei mir zu Hause dieselben ganz unbedingt aufrecht erhielt und die Möglichkeit eines Irrtums entschieden bestreitet. Es würde mich freuen, wenn ihm ein nächstes Mal bei erneuter Reise dorthin der Nachweis gelänge, dass ich der bin, der sich geirrt hat!

Acanthis cannabina mediterranea Tsch.

Der Hänfling ist einer der gemeinsten Standvögel aller Inseln der beiden Gruppen. Er brütet ab Anfang April (vergl. Koenig, Jourdain, Henrici).—Im Übrigen verweise ich auf die ausführliche Behandlung der südlichen Hänflingformen in meiner 2. Arbeit, pp. 389–94.—Eine grosse Serie liegt vor.¹

Serinus canaria serinus (L.).

Der Girlitz ist ein verbreiteter Standvogel des ganzen Gebietes, ohne Frage auch Menorca, wenn Ponseti ihn auch nur als Zugvogel aufführt. Er beginnt seine Brut im April, brütet sicher 2 mal, wenn nicht dreimal, denn wir fanden noch ein Gelege am 25. Juni (vergl. Koenig, Jourdain, Henrici). Die Nester stehen mit Vorliebe in Kiefern, auch sahen wir eins in einer alten Steineiche.—Grössere Serie von uns gesammelt. Flügellänge nach jetzigem Material: ♀ 65–69 mm.

¹ Anmerkung: Die Angabe Barcelos vom Vorkommen von *Acanthis linaria cabaret* (P. L. S. Müll.) auf Mallorca (vergl. Vogelf. I, p. 80) beruht zweifellos auf Irrtum.

Loxia curvirostra balearica Hom

Dem, was ich in meinen beiden früheren Arbeiten über den Kreuzschnabel der Balearen sagte, habe ich kaum etwas hinzuzufügen und verweise daher auf diese eingehenderen Schilderungen. Munn und nach ihm Jourdain geben nähere Daten über sein Brutgeschäft. Bisher liegen nur einige Gelege vor aus dem März und April (vielleicht noch eins aus dem Mai, vergl. Jourdain, 1927, p. 35), mir selbst gelang es nicht, eins zu finden.—Am 23. iv. 27 hörte ich bei Valldemosa ein altes rotes ♂ eifrig singen. Auf Mallorea ist er häufig, auf Menorea seltener, und von Ibiza erwähnt sein Vorkommen der Erzherzog Ludwig Salvator (Vogelf. I, p. 84).—Ich schloss eine grosse Serie in allen Kleidern.

Fringilla coelebs balearica Jordans.

Die Form des Balearen-Buechfinken wurde von mir in *Falco*, 1923, p. 4, beschrieben und genauere Vergleichsdaten in meiner 2. Arbeit gegeben. Er ist ein ausserordentlich häufiger Standvogel aller Inseln, nur auf Formentera sahen wir merkwürdigerweise kein Stück.—Gesammtes Material 48 Stück.—Anfang April beginnt er seine Brut (über die Eier vergl. Koenig, Jourdain und Henrici; der blaue Typ scheint vorzuherrschen).

Fringilla montifringilla L.

Der Bergfink kommt in strengen Wintern auf Mallorea und Menorea vor vergl. Vogelf. I, pp. 84–85, und Munn, 1924, p. 450).

Petronia petronia balearica Jordans.

Vier weitere jetzt gesammelte Steinsperlinge bestätigen die von mir auf Grund von 10 Exemplaren angegebenen Unterschiede (*Falco*, 1923, p. 4, und Vogelf. II, p. 396); die genannte Flügellängengrösse verschiebt sich durch die neuen Stücke nicht).—Der Steinsperling ist auf Mallorea nur sehr lokal verbreitet, doch nicht so selten, wie ich bisher annahm, da wir ihn diesmal erneut an einigen weiteren Stellen in alten Olivenbeständen und an der zerklüfteten Felsenküste fanden. Ein Nest ist weder von mir noch von Henrici oder Munn gefunden worden.—Munn irrt, wenn er in Chamberlin den Steinsperling mit dem mallorquinischen Namen "Gorrión berberisco" belegt, denn dies ist—Barceló machte dieselbe falsche Angabe (vergl. Vogelf. I, p. 85)—das ♂ des Haussperlings, während ersterer "Gorrión de la Mar" (=Meeressperling) heisst. Ich erwähne dies hier, damit sich nicht spätere Besucher irreführen lassen.

Passer domesticus balearoibericus Jordans.

Den Haussperling beschrieb ich in *Falco*, 1923, p. 4, und ausführlicher in Vogelf. II, pp. 396–98. Über seine Verbreitung etc. siehe dort und in I.—Wir fanden ihn auch diesmal wieder an anderen Stellen in Felsen und alten Oliven weit von menschlichen Siedlungen entfernt nistend. Er ist auf allen Inseln der Balearen und Pityusen gemein. Ich sammelte im ganzen nunmehr 41 Haussperlinge. Über Brut und Eier vergl. die anderen Autoren.—Floericke trennt in seinen "Mitteilungen über portug. Vögel" (1926, p. 16) den Sperling Portugals unter dem Namen *Passer domesticus diniz* ab wegen seiner Kurzflügeligkeit und abweichender Färbung. Wie es mit ersterer aussieht, ergibt sich

schon daraus, dass er alte Männchen aus Nordportugal mit 73-75 mm. maass; offensichtlich hat er nur (wohl infolge geringen Materials) einen kleinen Ausschnitt aus der Variationsbreite, da er schreibt, dass ein mittelportugiesisches von Weigold gesammeltes nach diesem 80 messe, aber dies bedeute wohl "einen seltenen Ausnahmefall oder die Vögel aus Mittelportugal und Nordportugal gehören verschiedenen Rassen an, oder es liegt ein Schreib-bezw. Druckfehler vor"!! Damit nicht genug behauptet der Autor, der so vorsichtig mit neuen Namen sein will (!), mitteleuropäische Männchen setzten erst mit 76 mm. ein, und damit stimme ganz überein, dass Hartert für gewöhnliche Spatzen 76-82½ mm. angäbe, während dieser aber in Wirklichkeit den Anfangspunkt mit 74,5 nennt!! Ich gab für balearoibericus ♂♂ 73-81 an und für ♀♀ 71-76 (78) für die Nominatform 75-84 bzw. 74-80 mm. Was also von Floerickes Maassangaben zu halten ist, mag man aus Obigem erschen. Mit den von ihm behaupteten Färbungsunterschieden ist's nicht viel anders, und der schöne portugiesische Dichtername diniz dürfte wohl unter die Synonyma fallen, wenn sich nicht an grösserem Material von zuverlässigem Untersucher andere Merkmale feststellen lassen, was ich aber nicht für wahrscheinlich halte.

Passer domesticus italiae Vieill.

Die Behauptung Homeyers vom gleich häufigen Vorkommen des rotköpfigen Haussperlings auf Mallorca und wohl nach ihm die gleichlautende Angabe Barcelós ist ganz unbegreiflich, da diese Form keinesfalls auf den Balearen brütet und bisher auch noch nicht einmal als Gast festgestellt worden ist (vergl. Vogelf. I und II). Er ist daher aus der Liste der Vögel der Balearen zu streichen.

Passer montanus L.

Der Feldsperling soll als seltener Gast auf Menorca und Mallorca vorkommen, doch fehlt bisher ein Belegstück (vergl. Vogelf. I, II und Munn, 1924 und 1927).

Emberiza calandra calandra L.

Der Graunammer ist auf allen Inseln—vielleicht mit Ausnahme von Formentera, wo weder Henrici noch ich ihn sahen—ein verbreiteter, aber nur stellenweise häufiger Brutvogel; die Brutzeit beginnt Ende April (vergl. Koenig, Jourdain, Henrici).

Emberiza citrinella L.

Wenn der Goldammer auch nach Oleo und Ramis (Vogelf. I, p. 90) auf den Balearen vorkommen soll, so hat ihn doch als erster Ponseti nachgewiesen, indem er (Munn, 1926, p. 475) einen Vogel dieser Art im Januar 1914 auf Menorca erbeutete.—Nun ist dies auch Munn für Mallorca gelungen, der am 14.iv.26 einen Goldammer in einem Käfig in Lluch sah, der im Januar ds. Js. dort in einem Netz gefangen war (Munn, 1928).

Emberiza cia L.

Auch den Zippammer nennen Oleo und Ramis von den Balearen (Vogelf. I, p. 90), ohne dass bisher ein Beweis dafür erbracht wurde.

Emberiza cirius cirius L.

Der Zaunammer ist auf Mallorca nicht selten, auf Menorca scheint er ebenfalls zu brüten, da Ponseti einen Vogel im Juni 1918 erbeutete (erstmalige Angabe von Munn, 1926, p. 475), während er bisher von den Pityusen nicht nachgewiesen wurde, wenn ich auch sein Vorkommen auf Ibiza annehmen möchte.—Ich fand ein Gelege am 9. vii. 21 und Henrici eins am 4. v. 24.

Emberiza hortulana L.

Der Gartenammer brüdet im Gebiete nicht. Ich schoss 3 Belegexemplares am 16. iv. 1913 und 29. iv. 1921 auf Mallorca; am 28. iv. 21 sah ich ein weiteres Pärchen und wiederum ein solches am 26. April 1927, alle an der Nordküste der Insel (vergl. Munn, 1928, p. 18). Ponseti nimmt sein Brüten auf Menorca an, doch bezweifelt Munn, sicher wohl mit Recht, dass dies stimmt. Gosse sah einen Vogel auf Ibiza (Vogelf. II, p. 401).

Emberiza schoeniclus schoeniclus (L.).

Barcelós Angabe vom Brüten dieser Art im Prat und in der Albufera (Vogelf. I, p. 91) bezieht sich, wenn man ihr Glauben schenken will, auf die folgende: Ponseti nennt sie einen seltenen Zugvogel Menorcas, doch als Erstem gelang Munn der sichere Nachweis ihres Vorkommens auf Mallorca, indem er Belegexemplare während der Wintermonate schoss (vergl. Vogelf. II, p. 403, Anmerkung und Munn, 1925, p. 40); Herr Munn hatte die Liebenswürdigkeit, mir jetzt einen Vogel zu schenken, den er am 20. i. 27 in der Albufera geschossen hatte, wofür ich ihm hier nochmals herzlich danke. Es ist die Nominatform des Rohrammers, die also während des Winters anscheinend regelmässig auf der Insel lebt (Chamberlin, p. 151). Munn meint, es blieben vielleicht einige auch zum Brüten zurück, was ich für ausgeschlossen halte. Als Brutvogel wird nur die folgende Art (?) hier leben

Emberiza tschusii witherbyi Jordans.

Ich beschrieb diesen Rohrammer im *Falco*, 1923, p. 4, und dann genauer in meiner 2. Arbeit, pp. 401–3, mit einer ausführlichen Schilderung seines Vorkommens in der Albufera, dem einzigen Brutplatz, während er der Albufereta und den anderen Sumpfgebieten fehlt.—Wir sahen ihn diesmal häufiger in fast dem ganzen Gebiet d.h. wenigstens überall da, wo grössere Rohrbestände vorhanden sind. Ich sammelte mit Mühe Mitte Juni noch drei Vögel zu den 15 Alten und 4 Jungen von 1921—2 weitere geschossene waren im Rohr leider nicht zu finden. Sie sind recht scheu, und es hält nicht leicht, sie aus grösserer Entfernung glücklich erlegt in dem Rohrdickicht zu entdecken. Meiner Beschreibung kann ich nichts Weiteres hinzufügen, da auch diese neuen ein der späten Jahreszeit entsprechend abgenutztes Glieder tragen; doch verschieben sich die Flügellängengrössen etwas, die bei frischen Stücken etwa betragen werden: ♂ 78–82, ♀ 70–74.—Henrici (1927, p. 13) sah die Art an gleicher Stelle Anfang Mai; Munn fand am 22. v. ein Nest mit 4 Jungen und einem faulen Ei, Rateliff am 9. v. ein Dreiergelege und am 11. v. ein Gelege von 5 Eiern (Jourdain, 1927, p. 36). Munn gibt eine eingehende Beschreibung des Nestes und des aufgefundenen Eies (1926, p. 468; vergl. auch Munn in Chamberlin, p. 151).—Ich zweifle jetzt noch stärker daran,

dass es wirklich drei verschiedene Rohrammer-Formenkreise gibt, voreiner Bearbeitung der ganzen Gruppe wende ich aber die erstgebrauchte Nomenclatur hier weiter an.

Oriolus oriolus (L.).

Ich beobachtete den Pirol auf allen drei Reisen Mitte Mai (Vogelf. I, II), Wilford sah einen am 20. iv auf Formentera (Vogelf. II), ich den letzten am 21. v. 21 in der Albufera, später jedoch nicht mehr und Munn gibt ihn für Mallorca und Menorea als nicht häufigen Durchzügler an.—Jetzt kam der erste am 26. iv. zur Beobachtung, dann am 30. iv. ein Vogel, am 11. v. ein sicherer Durchzügler auf der Cabrera; dann aber hörten wir ein Männchen am 30. Mai in einem Pappel- und Platanenwäldchen unweit Artá eifrig rufen, schossen hier ein altes Männchen (wohl das gleiche) am 31. v. und ein jüngeres rufendes ♂ am 2. vi.—Nach Aussage des Besitzers dieses Geländes soll der Pirol sich hier den ganzen Sommer über aufhalten und auch brüten, was ich auch für wahrscheinlich halten möchte. Die Testes waren voll entwickelt. Munn meint auch, dass wohl einige Vögel zur Brut zurückbleiben. Ein einwandfreier Brutnachweis ist damit allerdings leider noch nicht erbracht.

Sturnus vulgaris L.

Der Star brütet auf den Balearen nicht, ist aber nach Munn und Anderen ein gemeiner Wintervogel (vergl. Vogelf. II, p. 403).

Sturnus unicolor Temm.

Auch der Einfarbstar brütet nicht im Gebiete und ist nur ein verhältnismässig recht seltener Gast (vergl. Vogelf. I und Munn in Chamberlin).

Corvus corax hispanus Hart. & Kleinschm.

Der Kollkrabe ist in den gebirgigen Teilen der Inseln allenthalben verbreitet, von wo er seine Streifzüge über das ganze Gebiet ausdehnt. Er ist ausserordentlich scheu, wir brachten nur 3 Exemplare heim. (Vergl. Näheres in meinen beiden früheren Arbeiten und bei den anderen Autoren.). Wir sahen mehrere unerreichbare Horste in hohen Felsen, ebenso Munn einen Horst, auf dem der alte Vogel am 23. iii. brütete und einen zweiten am gleichen Tage mit Jungen, während Henrici ein Rabenpaar noch am 17. iv. auf Ibiza beim Bau des Horstes beobachtete (1927, pp. 48–49). Auf Bäumen scheint er—auch nach Aussage der Einwohner—auf den Balearen nie zu nisten.

Corvus corone L.

Die Rabenkrähe brütet auf den Balearen bestimmt nicht, trotz Homeyers Angabe (vergl. Vogelf. I, p. 94) und Anderer (vergl. Vogelf. II, p. 404). Ein sicherer Nachweis ist bisher nicht einmal aus der Zugzeit erbracht (vergl. auch Munn in Chamberlin, p. 149).

Corvus cornix L.

Die Nebelkrähe war bisher aus dem Gebiete nicht ein einziges Mal nachgewiesen, geschweige denn ihr Brüten. Harterts entgegenstehende Angabe beruht auf einem Irrtum, den ich in meiner ersten Arbeit bereits richtigstellte.—Jetzt

aber hat Munn (1928, p. 17) am 18. iv. 26 eine einzelne Nebelkrähe in der Albufera gesehen, die von NO kam, kurz auf einem Baum ruhte und dann in Richtung SW fliegend bald ausser Sicht war: sie war zweifellos trotz der Jahreszeit auf der Wanderung, was der Autor hervorhebt.

Corvus frugilegus L.

Die Saatkrähe scheint sehr selten auf Mallorca und Menorca auf dem Zuge vorzukommen, aber ein sicherer Nachweis liegt nicht vor, da es fraglich ist, ob das im Instituto Balear in Palma stehende Exemplar von der Insel stammt (vergl. meine Arbeiten und die Munn's).¹

Pyrrhocorax pyrrhocorax (L.).

Die Alpenkrähe besucht sehr selten das Gebiet: Barceló und Ponseti erwähnen ihr Vorkommen. Sicher nachgewiesen hat sie Munn, der am 10. viii. 1922 ein Paar und am 28. iv. 23 einen einzelnen Vogel an der Küste Mallorcas sah (1925, pp. 39–40).

Pyrrhocorax graculus (L.).

Oleo und Barceló geben an, dass die Alpendohle sich sehr selten auf Menorca zeige, da sie aber weder von Ponseti noch von irgend einem anderen Autor genannt wird, ist diesen vagen Behauptungen keinerlei Wert beizumessen, und die Art ist daher aus der Liste der von den Balearen nachgewiesenen Vögel zu streichen (vergl. Vogelf. I, p. 95).

Hirundo rustica rustica L.

Die Rauchschwalbe ist ein allgemein häufiger Brutvogel, der in der Hauptzahl Ende März ankommt und nach Munn auch vereinzelt überwintert. Ich sammelte eine Serie.

Delichon urbica meridionalis (Hart.).

Es ist die n.w. afrikanische Form der Mehlschwalbe, die nicht grade häufig brütet und anscheinend vorwiegend nur im Gebirge an Felsen. Sie scheint Anfangs April anzukommen.—Die Nominatform wird sicher durchziehen, doch liegt kein Belegstück vor, während ich von der ersteren eine kleine Serie mitbrachte.

Riparia riparia (L.).

Die Uferschwalbe brütet vereinzelt auf den Inseln: ich schoss drei Vögel.

Riparia rupestris rupestris (Scop.).

Die Felsenschwalbe ist auf allen Inseln in kleineren und grösseren Kolonien im Gebirge fast überall an ihr zusagenden steilen Felshängen anzutreffen: sie ist Standvogel. Nester sahen wir verschiedentlich, doch immer unerreichbar.—Ich sammelte eine Serie.

Apus melba melba L.

Während es bisher nicht bekannt war, dass der Alpensegler im Gebiete brüte—wenn man von Barcelós vager Behauptung absieht (Vogelf. I, p. 98)—

¹ Anmerkung: Es ist sehr merkwürdig, dass kein *Garrulus* und keine *Pica* im Gebiete brütet, und sogar nie beobachtet wurde, während beide an der nahe liegenden spanischen Küste so häufig sind.

er im Gegenteil sogar nur verhältnismässig selten zur Zugzeit zur Beobachtung gekommen war, fand ich diesmal eine kleine Kolonie am Gipfel des Monte Farruch bei Artá an einer sehr hohen Felswand mit dem Nestbau beschäftigt.—Wir sassen in der Luderhütte unterhalb des Gipfels auf Adler wartend, als ich einen mir bis dahin unbekanntem Ruf hörte, bis ich nach einiger Mühe in grosser Höhe einige Alpensegler wahrnahm. Es gelang mir schliesslich am 23. v. einen Vogel—der Nominatform angehörend—zu schiessen, der mit Nistmaterial im Schnabel auf einem Felsenvorsprung über dem ca. 500 m senkrecht abfallenden Abgrund hängen blieb; es war kein reines Vergnügen, ihn dort aufzuheben! Ebenso strichen am 23. vi. einige Exemplare an der westlichen Steilküste von Formentera am unzugänglichen Felsen vorbei und verschwanden immer wieder in einer kleinen Höhle über dem Meere, wo sie anscheinend Junge fütterten. Von Menorca wurde die Art bisher nicht genannt.

Apus apus apus (L.).

Der Mauersegler ist ein häufiger Brutvogel auf allen Inseln, sowohl in den Dörfern und Städten an den Häusern wie im Gebirge an den Felsen. Er kommt in den letzten Tagen März und den ersten Tagen April an. In der ersten Hälfte April sahen wir noch grosse Flüge nordwärts ziehen. Im Juni und den Sommer über versammeln sich allabendlich riesige Schaaren über der Hauptstadt.—Ich schoss eine Serie.

Apus pallidus illyricus (Tsch.).

Der Fahlsegler ist ein nicht häufiger Bewohner des hohen Gebirges, am häufigsten anscheinend auf der Cabrera, auch auf Formentera, von wo Hartert ihn bereits erwähnt.—Munn schreibt, dass er im Gegensatz zu Mallorca auf Menorca ebenso häufig sei wie der Mauersegler, und gegenüber seiner Angabe, dass er dort vor allem an den Häusern brüte, bin ich sehr skeptisch; dies sah ich nicht, im Gegenteil möchte ich hier die Sätze aus meiner letzten Arbeit wiederholen: "Während am Fusse der Berge in den Ortschaften nur *A. apus* lebt, sieht man beide Arten gelegentlich zusammenfliegen, nie dagegen zusammen brüten. Auch dort, wo *apus* kleine Brutkolonien fern von menschlichen Ansiedlungen im Gebirge bewohnt, sahen wir *murinus (pallidus)* stets getrennt und meist höher oben nisten."—Ich schoss nur wenige Belegstücke.

Merops apiaster L.

Barceló und Ponseti gaben das Brüten des Bienenfressers für Mallorca bezw. Menorca an, ebenso Homeyer auf die Aussage eines Mallorcaners, aber erst 1923 gelang Munn der Brutnachweis für Menorca, indem er eine kleine Kolonie in der Nähe der Nordküste Menoreas entdeckte (1924, p. 457, 1928, p. 22). Die Einflugslöcher der Nester waren im ebenen Boden.—Ich selbst erhielt zwar 1913 (Vogelf. I, p. 101) einen ausgestopften Vogel geschenkt, der im Frühjahr 1912 bei Artá geschossen war, hatte erstmalig am 14. v. 21 acht Bienenfresser unweit der Albufera hoch über mich hinziehend gesehen, Munn dortselbst auch etliche am 26. iv. 20 (Vogelf. II, p. 406) und endlich Henriei (1927, p. 50) am 5. v. 24 und 8. v. 25 einen Schwarm in derselben Gegend, wie auch am 26. iv. zehn bis zwölf Stück auf Formentera, aber stets ohne feststellen zu können, ob die Vögel auch hier nisteten. Am 19. v. 27 kam uns dann wieder nördlich Artá

ein Flug von ca. 10 Stück zu Gesicht, deren weithinvernehmbarer, charakteristischer Ruf uns auf die nicht hoch nach Süden streichenden Vögel aufmerksam machte. Diese Beobachtung erzählte ich zufällig den Abend des Eingangs erwähnten Herrn Garcias Font in Artá, und anderen Tags kam dieser mit einem eingesessenen Jäger zu uns, der versprach, uns an eine Brutkolonie zu führen. Meine Skepsis war unangebracht, denn wirklich kaum waren wir nach kurzer Autofahrt und einem kleinen Spaziergang in die angegebene Gegend unweit Capdepera an der SO Küste der Insel angelangt, als wir auch schon den Ruf hörten, und einige der herrlichen Tiere, bei strahlender Sonne wie Edelsteine glitzernd, über die Kiefern strichen. Es ist ein unvergesslicher Anblick, zum ersten Male diese wundervollen Vögel mit ihrem so fremdartig anmutenden Benehmen aus der Nähe zu schauen!—Seit Jahren befindet sich hier an den Wänden einiger flachausgeworfener nur ca. $\frac{1}{2}$ m tiefer Sandgruben eine Brutkolonie von etwa 15 Paaren, deren Grösse aber jahrweise stark wechseln soll. Zwei aufgegrabene Röhren enthielten noch keine Eier. Die Vögel waren recht scheu. Wir schossen ein paar Belegexemplare und besuchten die Gegend noch einige Male, um uns an dem Balzfluge zu erfreuen und ihr Benehmen etwas näher kennen zu lernen. Nach Aussage des Jägers kommen sie erst spät im Jahre, Mitte Mai etwa, an, um früh im September wieder fortzuziehen. Ende Mai scheinen sie mit dem Legen zu beginnen; ein am 25. v. geschossenes Weibchen hatte ein fast fertig entwickeltes Ei. Sie sollen ihre Flügel ziemlich weit ausdehnen, und alle die Vögel, die Munn, Henrici und ich in der Umgebung Alendias und dann nördlich Artá gesehen haben, dürften sicherlich von dieser Kolonie hier stammen.—Wir freuten uns, diesen schönen Vogel nun doch als Brutvogel Mallorcas festgestellt zu haben, wie es Munn vordem für Menorca gelungen war.

Upupa epops L.

Der Wiedehopf ist ein auf Mallorca unter dem Namen "Puput" allgemein bekannter Durchzugs- und Brutvogel, von dem wir diesmal 7 weitere Exemplare (vordem 5) mitbrachten. Er kommt Anfangs März an und brütet in hohlen Oliven und Mauerspalteln; wir fanden Anfang Juni ein Nest in einer alten Kanalmauer in der Allufera, das tief im Inneren derselben sass, und auf das uns das laute Gepiepse der Jungen aufmerksam gemacht hatte. Ich wunderte mich sehr, dass die dort gradezu massenhaft lebenden Vipernmattern, die in den unmittelbar nebenan liegenden Löchern verschwanden, wenn ich sie nicht vorher gegriffen hatte, ihnen anscheinend nichts taten.—Nach Munn bleiben wenige das ganze Jahr über.—Ich habe nun nochmals an Hand grösseren Materials genaue Messungen vorgenommen, die ergaben, dass meine früheren Angaben über die Flügellänge der Mallorcaner nicht ganz stimmten—vergl. Vogelf. I, II—insofern nicht, als die geringen Längen in noch nicht völliger Ausmauserung begründet waren; es besteht kein Unterschied.

Coracias garrulus L.

Barceló erwähnt die Blauracke als seltenen Zugvogel Mallorcas und Ponseti als solchen Menoreas (Vogelf. I, p. 102). Zwei Vögel von Mallorca stehen in der Sammlung des Seminars in Palma, davon wurde einer im September 1909 erlegt.

Alcedo atthis L.

Ich sah den Eisvogel kein Mal.—Barcelós und Ponsetis Angabe, er sei Standvogel, entbehrt sicher der Grundlage.—Nach Munn ist er ein nicht seltener Wintergast, und Herr Garcias Font sagte mir, dass er regelmässig vom Herbst bis ins frühe Frühjahr an mehreren Wasserläufen bei Artá anzutreffen sei. Der Erzherzog sah ihn öfters auf Ibiza. Brutvogel ist er im Gebiete nicht.

Iynx torquilla L.

Auch der Wendehals, den ich wiederholt im Frühjahr sah—den letzten am 19. v.—und von dem ich auch Belegstücke schoss, scheint mir jetzt nun doch nicht auf der Insel zu brüten, jedenfalls sah ich zu späterer Zeit nie mehr einen Vogel; daher kann ich auf Aussagen einiger Leute dort wenig geben, und, wenn auch Munn zwar sagt, dass er sich das ganze Jahr über, wenn auch nur sehr vereinzelt, zeige, und Ponseti ihn sogar als häufigen Bewohner Menoreas angibt, so ist jedenfalls bisher kein Brutnachweis erbracht. Auf den Pityusen schoss Gosse 2 Wendehälse Mitte April (Vogelf. I und II).

Cuculus canorus bangsi Oberh.

Zur Zugzeit ist der Kuekuck häufig—dies wird die Nominatform sein—dagegen zur Brutzeit spärlich. Leider schossen wir diesmal keinen Vogel—einen fehlte ich—so dass nur 2 Stücke von meiner ersten Reise vorliegen, von denen einer aber wohl eher ein *Cuculus canorus canorus* L. ist.—Henrici fand ein Kuekucksei am 30. v. 25 in einem *Sylvia melanocephala* Nest (1927, p. 50) und Munn einen jungen Vogel am 30. v. 23 im Nest des gleichen Wirtes.—Er kommt Ende März, Anfang April an.

Clamator glandarius (L.).

Ein Häherkuekuck wurde nach Ponseti 1912 auf Menorea erbeutet (Munn, 1926, p. 475), der einzigste Nachweis aus dem Gebiete.

Caprimulgus europaeus meridionalis Hart.

Die südliche Nachtschwalbe kommt Anfang Mai an. Wir trafen sie zur Brutzeit in nicht geringer Anzahl bei Alcudia und schossen einige Vögel (vergl. Vogelf. II, p. 407), doch ist sie nur ganz sporadisch verbreitet, wohl auf allen Inseln (vergl. Ponseti, Munn, 1924, p. 456, 1925, p. 42).¹

Otus scops mallorcae Jordans.

Die reizende Zwergohreule ist ein auf allen Inseln allgemein verbreiteter, häufiger Standvogel, der im Mai brütet. Wir schossen jetzt zu der früheren Serie von 11 Exemplaren noch ein gepaartes Paar, das die für die Form von mir angegebenen Unterschiede sehr deutlich zeigt. Näheres siehe *Falco*, 1923, p. 5, und Vogelf. I und besonders II.

¹ Anmerkung: Ausserordentlich auffallend ist das ganzliche Fehlen irgend eines Spechtes.—Ramis und Weyler behaupten zwar das Vorkommen von *Picus minor*, aber ohne Zweifel ohne jeden Grund; vergl. Vogelf. I, p. 103, Anmerkung.

Asio otus (L.).

Wenn Barceló die Waldohreule als "häufig" in den Wäldern Mallorcas und Menorcas und Ponseti sie als Standvogel letzterer Insel bezeichnet, so kenne ich nur die in meiner ersten Arbeit genannten 2 Vögel, die angeblich von Mallorca stammen sollen; sonst ist sie nie von irgend einem Beobachter festgestellt worden. Standvogel ist sie sicher nicht, dass sie sich selten einmal als Gast dort zeigt, ist natürlich nicht ausgeschlossen.

Asio flammeus Pontopp.

Die Sumpfohreule ist dagegen sicher von Mallorca nachgewiesen, sie brütet jedoch nicht hier. Munn erwähnt einige Daten ihres Vorkommens (1925, p. 42, 1926, p. 470) aus November, April und sogar ein Stück vom 18. v. und erhielt auch Belegexemplare. Ich sah ein ausgestopftes Stück bei Herrn Garcias Font in Artá, das dort erlegt war.—Von Menorea ist sie noch nicht sicher bekannt.

Athene noctua (Scop.).

Homeyers Angaben vom häufigen Vorkommen des Steinkauzes auf Mallorca beruhen ohne jeden Zweifel auf Irrtum (Vogelf. I, p. 107). Es ist merkwürdig, dass dieser Autor verschiedene Dinge bestimmt behauptet—vergl. z.B. Rotkopfsperling u.A. !—, die unfraglich falsch sind. Ich selbst—und auch Munn—glaubte, die Art sowohl 1913 wie auch 21 ein paar Male gehört zu haben (vergl. diese Notizen), jetzt stehe ich jedoch nicht an, zu sagen, dass dies sicherlich auch ein Irrtum war, denn der Steinkauz kommt als Brutvogel nach übereinstimmender Aussage zuverlässiger Leute dort nicht vor.—Munn hat nun (1924, pp. 457–58) zu seinem eigenen Erstaunen am 7. Mai 1923 auf Menorea aus nächster Nähe einen Steinkauz beobachtet, so nahe, dass er ihn mit seinem Stock berührte, woraufhin er erst aufflog, um sich gleich wieder zu setzen, so dass man kaum an der Richtigkeit der Bestimmung zweifeln kam. Ponseti sah ihn hier auch nie. Ob er also selten auf dieser Insel brütet, und dann welche Form das ist, entzieht sich bisher unserer Kenntnis.—Das Fehlen dieser Eule in dem für sie allenthalben so überaus günstigen Terrain ist höchst sonderbar.

Strix aluco L.

Der Waldkauz ist bisher nicht mit Sicherheit von den Balearen nachgewiesen (vergl. Vogelf. I, p. 107, und Munn, 1927, p. 160). Er brütet jedenfalls nicht im Gebiete.

Tyto alba kleinschmidti Jordans.

Ich beschrieb die Schleiereule Mallorcas in *Falco*, 1923, p. 5, und dann ausführlich in Vogelf. II, pp. 409–10.—Ich schoss jetzt noch 3 Vögel, sodass mir 12 vorliegen. Diese neuen Exemplare bestätigen aufs Schönste meine früheren Ausführungen; die Flügellänge geht allerdings etwas weiter: 278–98. Von den drei jetzt mitgebrachten ist das eine Männchen unterseits ganz ungefleckt, das andere zeigt einige wenige kleine Flecken in den Flanken und das Weibchen diese etwas mehr und stärker.—Die Art ist ein auf allen Inseln lebender Standvogel, der keiner Ortschaft fehlt.

Falco peregrinus (subsp ?)

Der Wanderfalke ist auf allen Inseln ein durchaus häufiger Brutvogel, der vornehmlich an den Steilküsten horstet.—Am 14. April 27 versuchte ein solcher über der Stadt Palma aus einem grossen Taubenschwan, immer wieder erneut stossend, eine Taube zu schlagen; hunderte Menschen sahen diesem schönen Schauspiel voll spanischem Enthusiasmus zu; die Aufregung und die Anteilnahme erinnerte stark an die in einem Stierkampf! Der Falke zog aber schliesslich unverrichteter Dinge, nachdem er sich immer höher geschraubt hatte, fast nur mehr als Punkt sichtbar, dem Gebirge zu ab.—1913 hatten wir nur 4 Junge, dem Horst entnommene, bekommen, 1921 schoss ich einen jüngeren Vogel und ein alter ging mir im Rohr der Albulera verloren (Vogelf. I und II). Diesmal hatte ich nun Alles darauf abgelegt, wenigstens einige alte Vögel zu bekommen. Horste, in die wir eine mitgenommene Falle legen wollten, waren unerreichbar, auf angebundene lebende Tauben stiessen sie nicht, ebensowenig auf die hoch im Gebirge aufgestellte und mit einer ausgestopften Taube beköderte Falle. Als wir ins Gebirge kamen, war es schon zu spät in der Jahreszeit, um sie am Horste zu schiessen. An der Steilküste bei Artá fanden wir endlich am 30. Mai 4 Junge ausgeflogene Wanderfalken auf den schroff zum Meere abfallenden Felsen sitzen und sahen die Alten stets in der Nähe kreisen und bei unserem Nahen aufgeregt rufend unherjagen. Hier hofften wir nun endlich auf Erfolg, erkletterten mit grosser Mühe und Schwierigkeit bei bewegter See vom Nachen aus die unbetretbar scheinende Felsküste; Baron Bodman stellte sich, gut gedeckt, unterhalb der Jungen an, die ab und zu aufflogen, um bald wieder an der gleichen Stelle aufzuhaken, und ich erkletterte den Gipfel, mich dort gut zwischen Felsen versteckend. Alles Warten nützte aber nichts, die Alten kamen nicht in Schussnähe heran, und, da das Meer immer unruhiger wurde, mussten wir schleunigst in das Boot zurück, hierbei eine Welle abpassend, die das Boot so hoch und so nahe an die Klippe heraufhob, dass wir es im Sprunge erreichen konnten! Bodman schoss dann vorher noch einen der jungen Vögel. Ein andermal hatten wir noch grösseres Pech: Auch bei Artá, an anderer Küste, der wildesten Felslandschaft, die ich je sah, sass unerwartet, als ich mit dem eingangs erwähnten glänzenden Jäger Cosmer und einem weiteren Schützen jagte, auf steiler Klippe hoch über dem Meere ein junger Wanderfalke, über dem die beiden alten Vögel kreisten. Wir pürselten uns in schwieriger Kletterei nahe heran und versteckten uns zwischen den Felsen an zwei auseinanderliegenden Punkten. Es dauerte gar nicht lange, als ein Vogel in rasendem Fluge, laut schreiend, über mich weg schoss, den mein Schuss aber fehlte, da er doch noch reichlich hoch war. Nach kurzer Weile kamen die beiden Alten uns zwei Schützen in eben für die Flinte erreichbare Nähe, wir schossen fast gleichzeitig, und beide fielen mit gebrochenem Flügel herab. Meine Freude, ein herrliches altes Paar endlich zu haben, kann man sich denken—nicht aber meine Wut, als es uns in dem unübersehbaren Felsgeröll und den schroffen Abstürzen trotz stundenlangen Herumkletterns nicht gelang, auch nur einen der Beiden zu finden!! Wir hatten von unseren Verstecken aus nicht die genaue Stelle des Aufschlagens sehen können, trotzdem bin ich überzeugt, dass wir sie gefunden hätten, aber ich musste schliesslich annehmen, dass sie sich noch in irgend eine Felsspalte verkrochen hatten. Jedenfalls blieb alle Mühe vergebens.—An der schroffen Küste der Cabrera versuchten wir es vom Lande und vom Nachen aus, aber auch ohne

Erfolg.—Cosmer, der nun Alles daransetzte—ich hatte ihm ausserdem eine tüchtige Belohnung versprochen—brachte schliesslich eines Tages freudestrahlend einen Wanderfalken an, den er nach stundenlangem Ansitz am 28. v. geschossen hatte, aber leider war es auch wieder ein jüngerer Vogel.

Dass ich schliesslich überhaupt alte Vögel mitbringen konnte, verdanke ich der Liebenswürdigkeit zweier Herrn in Palma—und der des Deutschen Consuls, der uns bei der Suche unterstützte—, die mir, wie Herr Garcias Font ein Männchen aus dem November des gleichen Jahres, 2 ausgestopfte (♂ ♀) von ihnen früher geschossene Exemplare schenkten.

Über die Maasse lässt sich infolge des geringen Materials nicht viel sagen: Flügellänge ♂ ad. 28,0; ein ausgewachsenes junges ♂ 28,8; das ♀ ad. misst 33,0, ein ausgewachsenes junges 31,3. Die übrigen 5 Jungen sind noch nicht messbar.

Hartert gibt für *brookei* an: ♂ 280 (einmal 275)—300, ♀ 320—40, aber er rechnet zu dieser Form alle Wanderfalken des Mittelmeergebietes, was nach Kleinschmidt nicht angängig ist. Dieser gibt in seiner prachtvollen *Peregrinus* Monographie für den echten *brookei* als männliches Maximum 29,9 (das Minimum ist noch nicht genau bekannt), für das ♀ 32,8—34,8; für seinen *punicus* ♂ 27,4—(29,0), ♀ (32,5)—33,9 an. Ich maass *brookei* ♂ mit 28,8—29,3 und ♀ ad. bis 34,5.—Meine Balearenstücke sind also jedenfalls klein.

Nun die Färbung: Die alten wie die jungen Vögel sind heller als *brookei*, unter- wie oberseits, stark rötlich und stehen Vögeln aus N. Marokko (*punicus*) viel näher. Im Einzelnen: ♂ ad. Oberseite hell, Rücken und Bürzel mit geringer Bänderung: rötliche Nackenflecke, die bis in die Augengegend ausklingen; Backen stark rötlich überflogen. Unterseite ganz licht, Kehle und Vorderbrust ganz ohne jede Fleckung, erstere weisslich, letztere stark rötlich wie die übrige Unterseite, die auch nur ganz geringe Flecken zeigt, die Bänderung ist stark reduciert, wie bei einem ad. ♂ von *pelegrinoides*.—Ein junges aus dem November auch sehr licht.—♀ ad.: Oberseite hell, Nackenflecken rötlich; Backen stark rot. Ganze Unterseite ausserordentlich rot, wie ich es nie bei einem anderen Stück aus der Freiheit sah. Vorderbrust mit schmalen Tropfenflecken, die Bänderung der übrigen Unterseite schmal.

Die beiden ausgewachsenen Jungvögel (♂ ♀) auch sehr rot (vergl. Vogelf. I, p. 109). Das ♂ ist sehr ähnlich einem gleichaltrigen *punicus* aus Constantine. Die Unterseite bei allen Jungvögeln röter als bei *brookei*.

Die Oberseite der alten Vögel ist heller als bei Vögeln aus N. Marokko und dem Algerier, sie haben aber geringeren roten Nackenfleck; die Unterseite ist fast so hell wie bei *pelegrinoides*. Der Balear ist in allen Stücken im ganzen heller als *brookei* und steht dem nordafrikanischen Wanderfalken nahe.

Weitere adulte Vögel, die ich bald zu erhalten hoffe, können erst die Frage der Formzugehörigkeit oder der Notwendigkeit nomenclatorischer Trennung des balearischen Wanderfalken klären. Stücke aus S. Spanien, die ich im Tringer und Britischen Museum sah, scheinen mit dem Balearen übereinzustimmen.

Falco eleonoraé Géné.

Am 8. Juni 27 sahen wir diesmal den ersten Eleonorenfalken bei Alcudia und die nächsten Tage immer einzelne oder mehrere Vögel. Am 10., als wir Abends kurz vor Eintritt der Dämmerung aus der Albufera heimkehrten, über-

flogen uns 5-6, dann dauernd einzelne oder etliche Exemplare erst hoch kreisend, dann immer tiefer herabkommend, bis wir schliesslich etwa 40 dieser eleganten Flieger zählen konnten, die in Baumhöhe oder noch niedriger den über dem Sumpfe in Massen fliegenden Insekten, namentlich Libellen, nachjagten—ein prachtvolles Bild.—Wir schossen noch 2 der hellen Phase; unter der Menge der Vögel konnten wir nur verhältnissmässig wenige—vielleicht etwa 1,5—der dunklen Phase angehörige Stücke unterscheiden. In den letzten Tagen Juni sahen wir dann auch wenige Eleonorenfalken bei Sta. Ponsa an der S.W. Küste Mallorcas.—Wenn Munn am 22.vi. viele (22) "*Falco peregrinus*" über der Albufera sah (1925, p. 43), so waren dies zweifellos nicht Wander- sondern Eleonorenfalken, den er "anscheinend nicht sehr selten" nennt und den er damals draussen wohl noch nicht unterscheiden konnte.—Murphy (Jourdain, 1927, p. 83) traf ihn 1926 an der Dragonera. Er brütet hier wie auch an anderen Klippen der Inseln, sicherlich auch auf Menorca, woher er bisher nicht genannt ist.—Man vergleiche, was ich über die Art in meinen beiden früheren Arbeiten schreibe.

Falco subbuteo L.

Nach Barceló und Ponseti zieht der Baumfalke selten im Frühjahr und Herbst auf Mallorca und Menorca durch. Ich sah zwei ausgestopfte in Palma, 1914 auf Mallorca erbeutet (vergl. Vogelf. II, p. 520).—Munn sah einen am 19.iv.24 und einen weiteren am 27.iv.25 (1926, p. 471).

Falco columbarius aesalon Tunst.

Der Zwergfalke ist ein seltener Passant der Inseln im Winter. Munn sah einen am 28.xii.1919 bei Alcudia.

Falco vespertinus L.

Der Abendfalke wurde sehr selten auf den Balearen nachgewiesen (vergl. Vogelf. I und II).

Falco naumanni Fleisch.

Homeyer gibt zwar an, ein Nest des Rötelfalken in der Grotte bei Artá gefunden zu haben, und ich selbst (Vogelf. I, p. 111), dass ich ihn dreimal sah, aber im ersteren Falle scheint mir eine Verwechslung mit dem Turmfalken wahrscheinlich zu sein, der immer einen Horst in jener Höhle hatte und noch hat, und im 2. Falle halte ich jetzt bestimmt für sicher, dass ich ihn auch verwechselte. Weitere Angaben über sein Vorkommen liegen nicht vor, denn die Munn's in Chamberlin (vergl. Jourdain, 1927, p. 83) beziehen sich fraglos auf die obigen. Ich glaube mit Sicherheit annehmen zu dürfen, dass der Rötelfalke bisher nicht aus dem Gebiete nachgewiesen ist, was in anbetracht seiner Verbreitung im Nachbargebiet merkwürdig ist.

Falco tinnunculus L.

(Falco tinnunculus intercedens Br.)

Der Turmfalke ist ein häufiger Standvogel aller Inseln der Balearen—Pityusengruppe.—Er brütet hier nicht auf Bäumen sondern nur in den Felsen

oder in altem Gemäuer (vergl. Munn und Henrici). Brutzeit April–Mai. Am 18. v. fanden wir bei Artá in einem verlassenem und verfallenen Hause einen Horst mit 5 Eiern, die aber bereits piepende Junge enthielten, weshalb wir sie nicht mitnahmen. Andere Horste waren nicht erreichbar.—Wir schossen noch 3 Vögel, so dass jetzt 8 vorliegen (6♂♂, 2♀♀).—“Bestimmt ist es nicht die Nominatform; die Formzugehörigkeit ist nach diesen (5) Stücken noch nicht zu entscheiden. . . . Ob er mit dem N.W. Afrikaner zu identifizieren ist, der eine gute Form ist, . . . ,” so schrieb ich in meiner letzten Arbeit.—Ich habe nun ein grosses Material genau verglichen und bin zu anderen Resultaten gekommen. Auf die lichte, mehr sandfarbene Färbung ist nichts zu geben, denn ein früheres Stück sieht so aus wie andere Stücke aus dem Mittelmeergebiet und auch aus Deutschland (bezgl. dieser Färbung). Auch die damals vermeintlichen Unterschiede des n.w. afrikanischen Turmfalken dürften nicht bestehen. Der tyrrhenische Vogel ist nicht dunkler als andere aus dem Mittelmeergebiet. Die Maasse sind wohl gleich.

Kleinschmidt wies mich nun darauf hin, dass die Turmfalken des Mittelmeergebietes kleinere Fleckung zeigen als die Nominatform—was mir 1921 (Vogelf. II, p. 520) auch schon aufgefallen war bei den Mallorcanern—und dass Brehm in der Naumannia I, p. 75, 1851, solche wenig gefleckten Vögel *intercedens* genannt hat, die “von Pommern bis Sardinien” vorkämen; Brehm nennt 2 Stücke aus Sardinien, die ihm vorlagen. Will man also die Turmfalken des Mittelmeergebietes abtrennen, so müsste wohl dieser Name Verwendung finden.—Mir lag ein recht umfangreiches Vergleichsmaterial aus diesen Gegenden vor, und tatsächlich zeigt bei diesen die Oberseite der Männchen (auch bei Berücksichtigung gleichaltriger Stücke, was wichtig ist) eine etwas geringere Grösse der Flecken, die auf der Unterseite aber nicht deutlich ist, wenn auch solche Extreme bei nördlicheren nicht vorzukommen scheinen. Dagegen dürfte bei den Weibchen kaum oder nur ein sehr geringfügiger Unterschied festzustellen sein.—Hierauf eine Form nomenclatorisch abzutrennen, würde ich kaum für notwendig erachten; da einmal ein Name existiert, mag, wer Wert darauf legt, den Turmfalken des Mittelmeergebietes *Falco tinnunculus intercedens* Brehm nennen.

Aquila chrysaetos homeyeri (Sev.).

Hartert schreibt in “Beiträge zur Fortpflanzungsbiologie der Vögel,” 1927, p. 194: “Der sehr kenntliche Steinadler Spaniens und Kleinafrikas . . . muss statt *occidentalis* in Zukunft wohl *homeyeri* heissen. . . . Die Art wurde nach Homeyers Mitteilungen im *Journal f. Ornith.* 1862, p. 248, über balearische und algerische Steinadler benannt, der Autor hat augenscheinlich gar kein Stück gesehen!”—Man möge nachlesen, was ich in meinen früheren Arbeiten über das Vorkommen dieses Adlers auf Mallorca schrieb. Ich habe leider nichts Neues hinzuzufügen, denn auch auf der letzten Reise gelang trotz erdenklicher Mühe nicht die Erlegung eines Vogels. Wir hatten uns eines Tages an dem Gipfel einer hohen Felswand im Nordgebirge bei Valldemosa, auf äusserstem Vorsprung gut versteckt, angesetzt, da nach Aussage eines zuverlässigen Burschen hier fast täglich Adler vorbeistreichen sollten. Stundenlang sass ich in enger Felsspalte über gähnendem Abgrund eingeklemmt, ohne dass sich ein Adler blicken liess, nur einige Male hörte ich seinen Schrei. Schliesslich war ich so lahm, dass ich

fürchten musste, sollte doch noch ein Vogel erscheinen, nicht schnell schiessen zu können; daher stand ich—soweit das möglich war—auf, sah die herrliche Landschaft unter mir, und da sich nichts blicken liess, nahm ich meinen Photoapparat aus dem Rucksack, um eine Aufnahme zu machen. Gerade hatte ich geknipst—da kommt lautlosen Fluges ein Steinadler in kaum 10 m Entfernung am mir vorbeigeglitten, aber ehe ich die Flinte hochgerissen, den Apparat fallen gelassen hatte, war er um die nächste Felsennase verschwunden!! Alle späteren Versuche blieben erfolglos, doch schoss mein Reisegefährte hier eine Doublette auf ein Zwergadlerpaar.—Wir sahen Steinadler diesmal aber nicht häufig.—Henrici beobachtete ihn auch im Nordgebirge.—Munn sah ihn mehr im Winter und meint, es sei nicht ganz sicher, ob er hier auch brüte; da wir ihn aber jederzeit von März bis Juli sahen, dürfte dies doch ohne Frage der Fall sein.—Die Einwohner unterscheiden merkwürdigerweise nicht zwischen Adler und Geier und nennen alle diese grossen Raubvögel "buitre" oder "voltó," daher ist auf deren Angaben über gefundene Horste kein Verlass, welcher Art diese zugehören.

***Aquila heliaca adalberti* Br.**

Wenn kein Irrtum vorliegt, beobachtete Munn (vergl. Vogelf. II, p. 521) am 20. xi. 19 und ich Anfangs Mai bei Valldemosa je einen Adalbertsadler.

***Hieraaëtus pennatus* (Gm.).**

Wir sahen den Zwergadler sowohl im Norden wie fast noch häufiger im Gebirge bei Artá. Ich muss ihn gradezu einen gemeinen Brutvogel der Insel nennen. Auch auf Menorca soll er häufig sein, und sicherlich fehlt er auch den Pityusen nicht. Wir sahen eine ganze Anzahl Horste, ausschliesslich an hohen unerreichen Felsen, immer an der Südseite der Berge und brachten jetzt 7 alte Vögel heim. Es sind 2 ♂♂ und 5 ♀♀, die beiden ersteren der dunklen, von den Weibchen 3 der hellen, 2 der dunklen Phase angehörend. Sie stimmen mit Exemplaren aus anderen Gegenden in Färbung und Grösse völlig überein. Der Zwergadler ist auf dem Lande ein gefürchteter Hühner- und Taubendieb; so wurde uns auch einer gebracht, der sich in einem über einem Hühnerhof aufgestellten Schlagnetz gefangen hatte. Er scheint im Mai und Juni zu brüten.

***Hieraaëtus fasciatus* (Vieill.).**

Leider gelang es nicht, einen Habichtsadler zu schiessen. Meine Angabe in der letzten Arbeit, dass auch diese Art häufig sei, stimmt nicht. Sie ist bedeutend seltener als die vorige, und wir beobachteten sie diesmal nur wenige Male. Henrici (1927, p. 51) sah sie auf Mallorca wie auf Menorca; ebenso beobachtete Munn den Habichtsadler ab und zu auf Mallorca.

***Buteo buteo* (L.).**

Munn sah den Mäusebussard selten im Winter und er hält—mit mir—die Behauptung Ponsetis, dass er Standvogel auf Menorca sei, für einen Irrtum.

***Accipiter nisus* (L.).**

Der Sperber brütet auf den Balearen nicht—trotz Barceló und Ponseti—ist aber ein nicht sehr seltener Wintervogel; ich sah ihn zweimal (Vogelf. I, II, und Mum).

Circus pygargus (L.).

Am 2. Mai 1913 schoss ich eine melanistische Wiesenweihe auf Mallorca (Vogelf. I, pp. 112–13), der einzige Nachweis ihres Vorkommens.

Circus macrourus (Gm.).

Ponseti erwähnt die Steppenweihe als wahrscheinlich auf dem Zuge vorkommend auf Menorca. Henriei sandte mir die Reste einer weiblichen Weihe (Flügel, Schwanz, Fang), die ein Bauer am 25.iv.25 auf Formentera geschossen hatte und die ich als Steppenweihe diagnostizierte; er sah dann die nächsten Tage noch mehrere Exemplare derselben Art (1927, pp. 51–2).—Munn beobachtete einen Vogel der Art am 8.iv.24 auf Mallorca (1926, p. 471).

Circus cyaneus (L.).

Homeyer behauptet, die Kornweihe sei ein nicht seltener Brutvogel Mallorcas, und dasselbe sagen Barceló und Ponseti, letzterer für Menorca.—Ich sah eine alte Weihe der Art am 2.iv.21 bei Artá (Vogelf. II, p. 524). Munn schreibt auch, sie sei ein nicht häufiger Standvogel Menorcas (1924, p. 458) und er habe sie auch beobachtet, ebenso ein Paar am 24.iv.25 bei Aleudia auf Mallorca "offensichtlich auf dem Zuge und im August 25 ein ♀ an derselben Stelle" (1926, p. 471), und in Chamberlin (p. 161) schreibt derselbe Autor, die Kornweihe ziehe auf Mallorca nur durch, sei aber seltener Standvogel auf Menorca. Belegexemplare liegen nicht vor.—In der Albufera ging am 17.vi.27 auf wenige Schritte vor uns vom Ufer einer der schmalen Kanäle eine ziemlich helle Weihe auf, die einen weissen Bürzel hatte; leider war ich im Augenblick nicht schussbereit, so dass sie, als ich die Flinte fertig hatte, ausser Schussweite war, und so kann ich die Art nicht sicher angeben, aber es dürfte wohl diese gewesen sein. Ein Brutnachweis ist also bisher nicht erbracht.

Circus aeruginosus aeruginosus (L.).

Die Rohrweihe ist in den Sumpfgeländen Mallorcas ein ausserordentlich zahlreicher Brutvogel, den wir namentlich in der Porrassa, der Albufera und in dem grossen Sumpfe bei Salinas in vielen Paaren und in allen ihren so stark differierenden Kleidern beobachteten. Der Vogel ist hier sehr scheu und einmal dadurch schwer zu schiessen aber auch, wenn geschossen, schwer in dem hohen Rohr zu finden. Wir brachten so leider nur 2 alte Weibchen (1924 ein junges Männchen) mit. Es ist die Nominatform und nicht die n.w. afrikanische *harterti*.—Wir fanden 2 Gelege, eins am 9.v. bei Salinas mit 4 frischen Eiern und eins mit 3 stark bebrüteten Eiern am 30.iv. in der Porrassa, hierzu die beiden oben genannten Weibchen. Die Horste standen im Rohr auf alten Gestrüppwurzeln.—Auf Menorca ist die Art nicht so häufig (Ponseti und Munn).

Milvus milvus (L.).

Diesen schönen Raubvogel sahen wir allenthalben auf Mallorca wie auf den Pityusen. Wir schossen 2 weitere (♂ ♀) zu den beiden von der ersten Reise. Sie sind sehr vorsichtig und scheu, aber von der Luderhütte aus konnten wir ihnen ständig aus nächster Nähe immer wieder beim Verzehren des Aases zuschauen; sie waren uns die sicheren Anmelder nahender Geier, die sich nur von den

Aasgeiern nicht bei ihrer Mahlzeit stören liessen, dagegen sich stets in respectvolle Entfernung zurückzogen, blockte einer der riesigen Kuttengeier in ihrer Nähe auf. Die Gabelweihe brütet hier im Mai, horstet ausschliesslich in den Felsen, nicht auf Bäumen, an unzugänglichen Abstürzen.—Auf Menorea ist sie ebenso verbreitet.

Milvus migrans migrans (Bodd.).

Homeyer gibt an, ein Pärchen des schwarzen Milans beobachtet zu haben, und ich glaube, ein Stück 1913 bei Artá und ein weiteres auf der letzten Reise ebenfalls da gesehen zu haben; Barcelós Angaben beruhen auf irgend einer Verwechslung, da er ihn auf beiden Inseln als häufigen Standvogel angibt. Nach Ponseti wurde ein Vogel auf Menorea erbeutet.—Wir sahen jetzt einen schwarzen Milan ausgestopft im Besitze des Herrn Garcias Font in Artá, der in der Nähe erlegt war. Er kommt also wohl selten im Gebiete vor, doch ist sein Brüten zweifelhaft.—Wenn Barceló schreibt, dass "*Milvus aegyptius*" sich selten auf Mallorca zeige, so entbehrt dies wohl jeder Grundlage.

Pernis apivorus (L.).

Nach Ponseti wurde im September 1902 ein Wespenbussard auf Menorea geschossen (Vogelf. I, p. 115).

Pandion haliaetus (L.).

Der Fischadler ist ein nicht seltener Brutvogel der Inselgruppen, der seine Horste an der Steilküste baut, so auf der Foradada, der Dragonera, Cabrera, an mehreren Punkten bei Artá, etc., etc.—Wir sahen ihn oft und ich schoss 1913 ein Belegstück (vergl. Munn, Henrici, etc.).

Haliaëtus albicilla (L.)

In meiner ersten Arbeit erwähnte ich, dass Homeyer am 9. v. 1861 drei junge Seeadler bei der Dragonera gesehen haben will, und dass Saunders' Angabe vom Vorhandensein mindestens zweier Horste auf dieser Insel ohne Zweifel auf Verwechslung mit der vorigen Art beruhe. Auch die Richtigkeit von Homeyers Angabe möchte ich in Zweifel ziehen, wenn es auch nicht ausgeschlossen sein mag, dass sich wirklich einmal die Art an den Küsten der Inseln zeigt.

Neophron percnopterus (L.).

Der Aasgeier brütet in wenigen Paaren auf Mallorca und Menorea, wir schossen 1921 einen adulten und diesmal (24. v.) einen jungen Vogel; wir sahen ihn sowohl einzeln wie mehrere gleichzeitig im West-, Nord- und Südostgebirge (vergl. Munn, Henrici, etc.).

Aegypius monachus (L.).

Täglich kreisen diese grossen Vögel hoch in den Lüften über Gebirge und Ebene. Der Kuttengeier ist noch ein häufiger Standvogel Mallorcas. Von Menorea und den Pityusen wird er nicht erwähnt, doch wird er auch hier sicherlich sich zeigen, wenn auch vielleicht nicht brüten. Am Aase ist er im Gegensatz zu anderen Gegenden hier äusserst vorsichtig, und wenn er auch einzeln oder

zu mehreren in der Nähe aufblockt, so dauert es doch meist sehr lange, bis er sich heranwagt, und hat er einen selbst in gut abgedeckter Hütte erst eräugt, so wird man vergebliche Stunden warten, dass er das Aas wieder anfällt. Sie kreisten oft immer wieder ganz dicht über unserer Hütte, dass der Schatten dieser Riesenvögel auf Sekunden unser Versteck verdunkelte oder man den Luftzug der Schwingen zu spüren vermeinte.—Einmal kamen wir unerwartet in unübersichtlichem, felsbrockenübersättem Bergabhang in der Mittagsglut in eine Schaar solcher Vögel hinein, die sich, 16 an der Zahl, mühsam vom Boden lösten und um uns herumschwebten, aber einige Schüsse mit dickem Schrot klatschten wie trockene Erbsen wirkungslos auf Flügel, Körper und Kopf! Ich schoss 1921 (Vogelf. I und II, auch Munn) ein Belegstück.—Wie mir Leute versicherten, sammeln sich zuweilen an bestimmten Stellen, wohin man regelmässig von den Höfen eingegangene Kühe, Pferde, oder was es sonst gibt, schafft, 30, ja über 40 dieser mächtigen Kerle, um im Verein mit Aasgeiern, Raben und Gabelweihen in kurzer Zeit tabula rasa zu schaffen. Sie fressen sich dann häufig so voll, dass man hin und wieder einen solchen, der sich infolge seiner Fülle nicht mehr vom Boden zu erheben vermag, totschrägt, während man ihnen sonst im allgemeinen nicht nachstellt.—Die Horste stehen an den schroffsten, höchsten Felswänden.

Gyps fulvus (Hablizl.).

Erzherzog Ludwig Salvator sah einmal, wie er mir 1913 erzählte, während eines Menschenalters, das er auf Mallorca zubraute, im Nordgebirge einen Vogel dieser Art. Barcelós Angaben, dass sie häufiger Standvogel sei, ist Unsinn (vergl. Vogelf. I. p. 116).—Herr Garcias Font erhielt einen Gänsegeier, der auf oben geschilderte Weise nicht weit von Artá totgeschlagen war, wie er mir berichtete; aber da die Überbringer bereits die meisten grossen Schwungfedern ausgerissen hatten, liess er ihn nicht präparieren.—Ich selbst glaube bestimmt, jetzt von der Luderhütte aus, die wir uns im Gebirge bei Artá eingerichtet hatten, längere Zeit einen Gänsegeier gesehen zu haben, aber die Entfernung bis zu dem Felsen auf den er mit Kuttengeiern zusammen aufgeblockt war, war so gross, dass ich die Art trotz meines ausgezeichneten Zeissglasses nicht mit Sicherheit ansprechen konnte. Er war grösser und heller als die nahe neben ihm sitzenden Geier; leider kam er nicht ans Aas, und da wir hofften, er würde es doch noch anfallen, liessen wir mehrere in guter Schussnähe sitzende Kuttengeier unbehelligt.

Alectoris rufa laubmanni subsp. nov.

Hartert sagt (Vögel d. pal. F. p. 1914), dass das auf den Balearen lebende Rothuhn nach einem Paar in Witherbys Sammlung und einem ♀ in Tring in der Färbung nicht von der Nominatform zu unterscheiden sei, dagegen sei es vielleicht kleiner (157, 146, 148, 152 mm.). Die Eier schienen (nach Jourdain) auch kleiner.—Von *corsa* (das Parrot auch nur wegen geringerer Maasse abtrennte) schreibt er Ähnliches, in der Färbung gleich, aber "vielleicht in der Regel etwas kleiner"; ♂ 158, 158, ♀ 142, 148, 155 (vergl. Vogelf. II, pp. 525–26). Diese Angaben über die Färbung der beiden Formen sind nach meinem Material nicht zutreffend: *corsa* hat bedeutend dunklere (tiefolivgrüne) Oberseite als *rufa* und gleicht darin der nordspanischen *hispanica*.

Wir schossen noch weitere 5 Exemplare. Meine 7 Rothühner von Mallorca zeigen einen auffallend hellen, mehr grau-sandfarbenen, weniger grünlich-

bräunlichen Rücken, viel heller als *rufa*, erst recht als *corsa* und *hispanica*, heller noch als die südspanische *intercedens*; ebenso ist das Braun des Oberkopfes, des Nackens und Vorderrückens lichter und weniger rötlich, mehr gelblich. Unterflügeldecken sehr hell. Das Braun des Bauches ist ebenfalls heller, gelblicher, ähnlich dem einiger italienischer Vögel.

Die Maasse:

rufa nach Hartert: ♂ 157–68, ♀ 150–62 (ich maass 1 ♀ aus Italien mit 146, andere wie Hartert).

corsa nach Hartert: ♂ 2 mal 158, ♀ 142, 148, 155 (ich maass—vergl. Vogelf. II!! ♀ 149, 2 mal 157, ♀ 142, 146, 148, 150, 2 mal 153, also: ♂ 149–58, ♀ 142–49, wohl noch keine Maxima u. Minima).

Malloreaner: ♂ 150, 2 mal 151, 159, ♀ 143, 144, 149 (keine Maxima u. Minima).

Die bisherigen Messungen ergaben also für *rufa*: ♂ 157–68, ♀ 146–62 mm.; *corsa*: ♂ 149–58, ♀ 142–55 mm.; Baleare: ♂ 150–59, ♀ 143–49 mm.

Demnach sind *corsa* und der Baleare kleiner als *rufa*; ob erstere gleiche Maasse haben, kann erst grösseres Material entscheiden.

Der Baleare ist aber von *corsa* deutlich durch die obenangegebenen Färbungsmerkmale unterschieden.

Ich bennene die Form zu Ehren von Herrn Prof. Dr. Laubmann in München, der meinen Arbeiten stets Interesse entgegenbrachte und mich jederzeit mit Rat und Tat unterstützte, schon als ich als junger Student in der Münchener Sammlung arbeiten durfte.

Typus: ♂ 3. iv. 1921, Artá, Mallorca, Nr. 2918.

Am 23. Mai 27 griff ich in der hohen Sierra bei Artá ein wohl erst ca. einen Tag altes Junges aus einer Kette von etwa 15 Stück, das ich präparierte.—Ich brachte 2 Gelege heim, eins von 15 Eiern (von denen leider 2 zerbrachen) und eins von 12 Eiern, die ich beide bei Salinas am 4. bzw. 6. v. nahm (über Eiermaasse vergl. Jourdain und Henriei, 1927, pp. 87 u. 98).

Das Rothuhn ist auf den Inseln noch sehr häufig; Näheres lese man in meiner ersten Arbeit nach.—In einsamer Sierra bei Salinas stiessen wir jetzt auf eine grosse Felsplatte, die eine Inschrift trug des Inhalts, dass hier vor etlichen Jahren (es mögen 20 gewesen sein, ich verlor meine genaue Notiz darüber) ein eifriger Jäger starb, nachdem er sein 1000. Rothuhn auf Mallorca geschossen hatte.

Betr. Angaben vom Vorkommen des *Steinhuhns* und des *Klippenhuhns* vergl. Vogelf. I, p. 118; beide Arten kommen nicht im Gebiete vor.

Francolinus francolinus (L.).

Munn schreibt (1924, p. 467), dass ein einziges unbezeichnetes Frankolin im Museum in Mahon steht, das aber Ponseti nicht erwähnt und von dem man nichts in Erfahrung bringen konnte, ausser dass es angeblich von der Insel stammt.

Coturnix coturnix (L.).

Die Wachtel ist ein gemeiner Herbst- und Frühjahrsdurchzügler auf allen Inseln und ein verbreiteter, wenn auch nicht grade häufiger Brutvogel. Wir schossen 8 Vögel. Einzelne sollen nach Barceló und Munn das ganze Jahr

über bleiben.—Wenn wir sie nicht grade häufig hörten, so muss sie doch in grösserer Zahl brüten, als man annehmen möchte, denn der mehrfach genannte Vogelfänger Cosmer brachte mir am 25. Mai 27 elf Männchen, die er alle dicht bei Artá in einer knappen Stunde lebend mit dem Schlagnetz gefangen hatte, nachdem er sie mit einem selbstgefertigten Lockinstrument angelockt hatte; hier hatten wir in den Tagen höchstens 3–4 gehört!

Columba palumbus L.

Die Ringeltaube ist ein sehr sporadisch vorkommender Vogel in den Kiefernbeständen Mallorcas, namentlich der Süd- und Südostküste; hier ist sie dann ziemlich zahlreich. Sie scheint in der Hauptsache ein Sommervogel zu sein, Munn meint (vergl. Vogelf. I und II), dass sie vereinzelt auch das ganze Jahr über bleibe. Er fand ein Gelege am 4. April und noch Anfang August Junge; sie kommt Mitte März im Gebiete an.—Ich sammelte im Ganzen 4 Exemplare; es ist die Nominatform, allerdings zeigen alle vier sehr lichte Unterseite, namentlich die Weibchen.

Columba oenas L.

Die Hohltaube soll nach Barceló und Ponseti ein seltener Herbst- und Wintervogel Mallorcas und Menorca sein (vergl. Vogelf. I und auch Munn).

Columba livia subsp. ?

Auf allen Inseln namentlich an den Steilküsten, aber auch im felsigen Gebirge sonst, ist die Felsentaube ein überaus häufiger Standvogel, auf den die Einwohner eifrige Jagd machen. Vom schwankenden Boot die pfeilschnell an den Felsen vorbeieilenden Vögel zu treffen, erfordert viel Übung, und im Gebirge hält es auch nicht viel leichter, da sie namentlich zur Brutzeit besonders scheu sind und vielfach in unerreichbaren Höhlen nisten. So brachte ich nur ein Stück mit (Artá, I, vi, 27), das ganz auffallend verschieden von der Nominatform ist, noch heller als *schimperi* aber mit reinweissen Bürzel, und mit 225 mm Flügellänge auch grösser als diese aber gleich der Nominatform. Da es sich immerhin um ein aberrantes Exemplar handeln kann, ist eine Benennung nur nach dem einen Vogel nicht angängig, doch hoffe ich, einige weitere Felsentauben von dort zur Klärung dieser Frage zu bekommen.

Streptopelia turtur loei Jordans.

Diese interessante Form der Turteltaube beschrieb ich auf Grund von 4 Exemplaren in *Falco*, 1923, p. 5, und machte ausführlichere Bemerkungen über sie in Vogelf. II, p. 527. Jetzt schossen wir wieder 4 Stücke, die übereinstimmend jene Charakteristika zeigen. Besonders fällt die sehr geringe Ausdehnung und die Helligkeit der weinrötlichen Färbung des Kropfes und der Vorderbrust auf. Flügellänge beträgt nunmehr 16,5–17,8 cm, während Hartert für *turtur* 17,3–18,2, für *arenicola* 16,3–17,7, angibt.—Sie ist ein häufiger Brutvogel allorts; Gelege ab Ende Mai (vergl. Munn, Jourdain, Henrici).—Die vielen im Herbst und Frühjahr durchziehenden Turteltauben (einen besonders starken Zug beobachteten wir am ii. v. 27 auf der Cabrera wo uns ein Junge eine frisch geschossene zeigte) gehören zur Nominatform **Streptopelia turtur turtur (L.)**.

Nycticorax nycticorax (L.).

Meine Worte: "Im Gebiete um Aleudia, namentlich der Albufera, ist er ein sehr häufiger Brutvogel" (Vogelf. II, p. 527) dürften, worauf auch Munn hinweist, doch nicht richtig sein. Wir sahen 1921 den Nachtreiber bis Mitte Mai dort häufig in Scharen bis zu 30 Stück, Anfang Juni waren es nur mehr meist einzelne Paare oder 4–8 Vögel zusammen. Diesmal hörte ich sie Abends am 8. Juni zwischen Aleudia und der Albufera eifrig rufen. Munn schreibt (1925, p. 44), dass der Nachtreiber in geringer Zahl alljährlich die Kiefernwälder an der Bucht von Aleudia—wo ich ihn auch am meisten sah—besuche und den grössten Teil des Sommers auch hierbliebe, aber der Vogel scheine hier nicht zu brüten. Er fand am 20. vi. 23 ein unfertiges Nest von ihm "which was later forsaken," am 15. iv. 22 wurde ein ♀ mit sehr kleinem Eierstock erbeutet und im December 22 ein Vogel am Cabo del Pinar beobachtet, weshalb er gelegentlich auch im Gebiete zu überwintern scheine. Er betont 1926 (p. 472), dass bisher keine Eier gefunden seien, dass offenbar die Mehrzahl nur durchziehe; dasselbe schreibt er in Chamberlin, 1927.—Auf Menorca kommt er nur selten auf dem Zuge vor.—Homeyer (Vogelf. I, p. 120) hält ihn für einen ebenso häufigen Brutvogel wie den Fischreier; es ist ihm wohl ebenso ergangen, wie mir, dass er aus seiner späten Beobachtung auf sein ebenso häufiges Brüten schloss. Dies scheint nun also nicht der Fall zu sein—übrigens auch Henrici sah Anfang Mai 14 Vögel, auch ohne ein Nest zu finden—, auch alles Nachfragen bei den Leuten der Gegend zeitigte kein sicheres Resultat, trotzdem möchte ich ein wenn auch nur vereinzelt Brüten und zwar wohl nicht in Kolonien sondern an unzugänglichen Stellen der Albufera in einzelnen Paaren annehmen, wie es auch Henrici tun möchte, zumal ich die Art bis in den Juni hinein sah und allabendlich hörte. Da aber ein sicherer Brutnachweis bisher durch Auffinden eines Geleges noch nicht erbracht ist, muss ich den Nachtreiber unter die fraglichen Brutvögel Mallorca's rechnen.—1921 schoss ich am 17. Mai ein Belegexemplar.

Botaurus stellaris (L.).

Die grosse Rohrdommel dürfte heute nur in der Albufera und Albufereta, aber hier in ziemlicher Anzahl, brüten. Ihr Rufen hört man allabendlich aber auch tagsüber. Wir sahen sie oft niedrig über das Rohr streichen, und 1913 schoss ich einen Vogel.—Lord Lilford fand Eier (vergl. Vogelf. I, II, Munn, Jourdain und Henrici).—Auf Menorca scheint sie nur auf dem Zuge vorzukommen, doch hält Munn auch hier an einigen Stellen ihr Brüten für nicht unwahrscheinlich.

Ixobrychus minutus (L.).

Das Vorkommen der Zwergrohrdommel, und zwar als Brutvogel wies ich zum ersten Male für Mallorca nach, indem ich 1921 ein Nest mit 5 Eiern in der Albufera fand und sowohl damals wie auch jetzt einige Male einen Vogel sah, leider ohne einen Schuss auf ihn abgeben zu können.—Munn sah ein Exemplar am 28. iv. 25 ebendort, und nach Ponseti zieht die Art selten auf Menorca durch.

Ardeola ralloides (Scop.).

Am 25. v. und 20. vi. 21 sah ich in der Albufera je einen Schopfreier, wodurch sein Brüten wahrscheinlich aber nicht sicher anzunehmen ist—der

einzigste Nachweis; denn auf Barcelós Behauptung, er sei häufiger Standvogel Mallorcas, ist nichts zu geben, wenn man bei vielen seiner Angaben nicht annehmen will, dass sich die Fauna seit seiner Zeit so wesentlich geändert hat, was sicherlich in den meisten Fällen nicht infragekommen kann.—Nach Ponseti wurde der Schopfreiherr selten auf Menorca gesehen (vergl. Vogelf. II, p. 528).

Ardea cinerea L.

Der Fischreiherr ist in der Albufera ein ziemlich zahlreicher Brutvogel; auch in der Albufereta sieht man ständig einzelne oder mehrere zusammen, aber hier dürfte er wohl kaum zur Brut schreiten oder doch nur in wenigen Paaren. Er horstet im Gebiet offenbar nicht auf Bäumen sondern in den mehr oder weniger unzugänglichen grossen Rohrbeständen auf dem Boden. Wenn Munn (nach Jourdain) meint, er brüte an den Klippen des Cabo del Pinar, wo er ihn oft sah, so ist das doch wohl sicherlich eine irrtümliche Vermutung.—Auch im Winter im Gebiete.—Auf Menorca soll er nach Ponseti nur durchziehen oder sich gelegentlich aufhalten, doch Munn glaubt auch an sein Brüten hier.

Ardea purpurea L.

Der Purpurreiherr scheint an Zahl den Fischreiherr zu überwiegen. Im Übrigen gilt von ihm das Gleiche wie von der vorigen Art. Er ist ein Sommervogel, der im Herbst fortzieht, um im April zurückzukommen.—Diesmal brachten wir 2 Belegstücke mit, ein Weibchen ad. und einen jungen Vogel, beide vom 1. Juli.—Ratcliff sammelte Mitte Mai Gelege (Jourdain, 1927, p. 84). Auf Menorca zieht er durch.

Egretta alba (L.)

Barceló behauptet, der Silberreiherr sei "ein häufiger Brutvogel Mallorcas," sicherlich ohne Grund. Munn sah einen einzelnen Vogel am 28. v. 23 bei Aleudia ostwärts fliegend (1925, p. 44)

Egretta garzetta (L.)

Honeyer sah den Seidenreiherr zur Brutzeit im Prat und in der Albufera, ich einen Vogel am 2. v. 1913 bei Salinas. Barceló nennt ihn ebenso häufig wie die vorige Art. Ob er je gebrütet hat, ist nicht erwiesen, heute jedenfalls tut er es nicht mehr.—Munn beobachtete einen einzelnen Seidenreiherr am 19. iv. 26 in der Albufera und wohl den gleichen im Juni an derselben Stelle, aber nur diesen einzelnen (1928, p. 20).

Bubulcus ibis (L.)

Munn sah einen Kuhreiherr am 12. i. 20 (Vogelf. II, p. 528) und je einen weiteren am 24. iv. 22 und 10. i. 23, die sich etliche Tage in der Albufera aufhielten. Vorher hatte ihn nur Ponseti als seltenen Durchzügler auf Menorca bezeichnet.

Ciconia ciconia (L.)

Während bisher nur Barceló den Storch als seltenen Zugvogel Mallorcas angegeben, und Saunders einen grossen Flug bei Menorca gesehen hatte (Vogelf. I, p. 122), schreibt Munn (1926, p. 475), dass nach Ponseti ein Storch im Mai 1919 auf Menorca erbeutet worden sei.

Phoenicopterus ruber antiquorum Temm.

Homeyer sah noch ein Paar Flamingos am 28.v. in der Albufera wo er sein Brüten annimmt. Nach mir von Kundigen gemachten Aussagen (vergl. Vogelf. I, p. 122) soll er tatsächlich früher hier und in der Albufereta gebrütet haben. Heute ist das nicht mehr der Fall, doch soll er sich im Frühjahr regelmässig in den verschiedenen Sumpfgebieten, so namentlich in grösserer Anzahl in dem grossen Sumpfe bei Salinas zeigen. Auch auf Menorca und den Pityusen ist er beobachtet worden. Munn sah einen Flamingo Anfang Mai 1924 bei Aleudia (1926, p. 472).

Plegadis falcinellus (L.).

Homeyer sah im Prat Mitte Mai eine Anzahl braune Siehler ; ich ein ausgestopftes Exemplar, angeblich von der Insel stammend, in Palma, und Ponseti nennt ihn einen seltenen Besucher Menoreas (vergl. Vogelf. I, pp. 122-23); der Name "*igneus*" war ein Irrtum Ponsetis (vergl. Munn, 1924, p. 461). Ein Paar steht im Museum in Mahon.—Munn sah einen einzelnen am 12.vi.26 in der Albufera (1928, p. 20); er war der Überlebende von dreien, während 2 vorher geschossen waren.

Platalea leucorodia L.

Nach Barceló käme der Löffelreiher sehr selten im Herbst auf Mallorca vor, aber kein anderer Autor erwähnt ihn. Barcelós Angabe ist zum mindesten mit einem Fragezeichen zu versehen.

Rallus aquaticus L.

Die Wasserralle ist in den Sumpfgebieten der Inseln nach allen Autoren ein häufiger Standvogel. Ich schoss ein ♀ ad. 1913, und wir hörten sie oftmals.

Crex crex (L.).

Der Wachtelkönig ist ein nicht häufiger Herbst- und Wintervogel im Gebiete.

Porzana porzana (L.).

Nach Barceló, Homeyer, Ponseti und Munn ist auch das Tüpfelsumpfhuhn ein nicht seltener Brutvogel Mallorcas und Menoreas. Ich bin der Art nicht begegnet.

Porzana pusilla intermedia (Herm.).

Angeblich ist auch das Zwergsumpfhuhn Standvogel (vergl. Vogelf. I, p. 124, und Munn, 1924, p. 466, wie in Chamberlin, p. 172), und ein ebensolcher :

Porzana parva (Scop.)

ohne dass Belegstücke bekannt sind.

Gallinula chloropus (L.).

Das Teichhuhn sahen wir diesmal in etlichen Paaren und einzelnen Stücken in der Albufera ; es war aber ausserordentlich scheu, und nur mit Mühe gelang uns am 10.vi. die Erlegung eines Vogels, als wir mit dem Nachen einen der

schmalen Kanäle befahren. Ich musste auf weite Entfernung schiessen, sodass es, nur geflügelt, sofort untertauchte und wir schliesslich schon das Nachsuchen drangeben wollten, als es dicht neben dem Nachen den Kopf zwischen den Sumpfpflanzen herausstreckte und ich es mit schnellem Griff fassen konnte.— Wir sahen die Art auch auf dem kleinen Gewässer bei der Höhle von Artá und einmal im Sumpfe bei Salinas, sonst nirgends. Sie ist Standvogel auf Mallorca und Menorea (vergl. Munn, Ponseti).—Am 20.v.27 fuhren wir im Wagen an dem grossen Sumpfe nördlich Salinas vorbei, als ein Teichhuhn den Weg kreuzte und sich im Graben versteckte. Wir griffen es; es ist ein vorjähriges, offensichtlich verkümmertes Weibchen mit ausserordentlich geringen Maassen (Flügel nur 15.0, Schwanz 7.4 cm.).

Fulica atra L.

Nicht minder scheu ist das Wasserhuhn, dem wir in der Albufera ziemlich oft begegneten und das wir noch öfter im Rohr hörten. Baron Bodman schoss schliesslich, nachdem wir oft vergeblich Jagd darauf gemacht hatten, am 13.vi. ein altes Männchen. Um seiner aber habhaft werden zu können, mussten wir einen schweren Nachen bei starker Hitze von einem Kanal herausheben, ihn über eine ziemlich breite morastige Stelle tragen, auf der anderen Seite ihn wieder herablassen, da hier der Sumpf zum Durchwaten zu tief war; als wir den Vogel dann glücklich hatten, dieselbe Procedur wieder zurück—aber wir wollten das einzige Belegstück nicht verkommen lassen. Dort sahen wir in den Tagen auch einige Dumenjunge. Das Wasserhuhn ist hier ziemlich häufig, hält sich aber sehr versteckt während der Sommermonate. Im Winter sollen grosse Mengen nordischer Zuwanderer sich in den Sumpfgebieten aufhalten. Im Sumpftale bei Artá sahen wir auch einige. Es ist Standvogel auf Mallorca wie Menorea.

Fulica cristata Lath.

Wenn Homeyer schreibt, er habe diese Art brütend im Part angetroffen und am 15. Mai ein Weibchen mit Jungen gesehen, so muss man dieser Angabe schliesslich Glauben schenken, wenn der Autor auch hervorhebt, dass er die vorige nicht beobachtet habe. Ausser ihm behauptet nur Barceló, dass der Vogel ein nicht häufiger Bewohner Mallorcas sei. Jourdain möchte daher annehmen, dass die Art durch *atra* verdrängt bzw. ersetzt worden ist (1927, p. 87; vergl. Vogelf. I).

Porphyrio caeruleus (Vand.).

Homeyer sah das Sultanshuhn zweimal im Prat und in der Albufera, Saunders gibt sein Vorkommen noch für das Jahr 1871 an, Ponseti nennt es durchaus nicht selten auf Menorea und der Erzherzog Ludwig Salvator erwähnt es von Ibiza. Wir haben es weder gesehen, noch kannte es irgend einer der Einwohner, und aus neuerer Zeit liegt keine Notiz mehr vor. Ich glaube jedenfalls (mit Munn), dass es jetzt nicht mehr, auch nicht in den abgelegenen Teilen der Albufera, im Gebiete lebt (vergl. Vogelf. I).

Grus grus (L.).

Der Kranich wurde selten im Frühjahr durchziehend beobachtet auf Mallorca (Barceló) wie Menorea (Ponseti).

Anthropoides virgo (L.).

Im Jahre 1718 wurde ein Jungfernkranich in der Porrassa geschossen, 1782 am 2. x. einer in der Albufera lebend erbeutet; zu gleicher Zeit befand sich ein ausgestopftes Exemplar in Palma (Barceló, vergl. Vogelf. I, pp. 125–26).—Die Angabe eines Vorkommens von *Balearica pavonina* aus derselben Zeit beruht zweifellos auf Verwechslung (vergl. Vogelf. I, p. 126).

Otis tetrax L.

Die Zwergtrappe ist nach Ponseti sehr selten auf Menorea gesehen worden. Ein ausgestopftes Weibchen steht im Museum in Mahon (Munn, 1924, p. 462).

Scolopax rusticola L.

Die Schnepfe ist ein häufiger Zugvogel im ganzen Gebiete, der im Oktober–November ankommt, den Winter über z.T. verbleibt und Ende März wieder verschwindet. Ich sah eine Schnepfe am 21. iii. 21.

Capella gallinago (L.).

Die Art ist ein sehr gemeiner Zugvogel, der in beträchtlicher Anzahl den Winter über bleibt. Ich sah ihn bis zum 15. Mai.

Capella media (Lath.).

Während bisher nur Barceló das seltene Durchziehen dieser Bekassine behauptet hatte, sahenechte Munn am 29. iv. 27 im Sunpfe Gambas bei Salinas einen Vogel mehrere Male auf (1928, p. 21).

Lymnocyptes minimus (Brunn.).

Zugvogel auf allen Inseln, aber weniger häufig als die erstgenannte Art.

Numenius arquatus (L.).

Der grosse Brachvogel zeigt sich vereinzelt wohl alljährlich im Frühjahr und Winter, auch soll er bisweilen das ganze Jahr über bleiben, ohne aber zu brüten (vergl. Munn).—Wir sahen ihn diesmal verschiedentlich, so Ende April in der Porrassa (wo Baron Bolman ein ♀ am 29. iv. schoss), am 10. v. an der Küste bei Puerto de Campos und am 10. vi. in der Albufera, jedesmal einen einzelnen Vogel.

Numenius phaeopus (L.).

Der Regenbrachvogel soll ein seltener Zugvogel auf Mallorca und Menorea sein. Munn sah ein Paar am 19. ix. 22 und einen einzelnen Vogel am 17. ix. 23 bei Aleudia (1925, p. 46).

Numenius tenuirostris Vieill.

Homeyers (und Barcelós) Angaben vom Brüten des dünn Schnäbligen Brachvogels im Prat, wo Ersterer ihn während des Sommers beobachtete, — ob es wirk-

lich diese Art war?—beruhen auf Irrtum, ebenso die meinigen, die sich auf diese bezogen (vergl. Vogelf. I und II), nachdem man weiss, dass seine Brutheimat Asien ist. Nach Ponseti zeigt er sich selten im Winter auf Menorca: ein Stück steht im Museum in Mahon (Munn, 1924, p. 463).

***Limosa limosa* (L.).**

Die Uferschnepfe wurde selten auf dem Zuge auf Mallorca wie Menorca festgestellt. Homeyer schloss irrtümlich aus der Beobachtung einiger Paare im Prat auf ihr dortiges Brüten. Ich selbst sah am 13.vi.27 einen Vogel in der Albufera zwischen Stelzenläufern herumspazieren; leider fehlte ihm mein Schuss.

***Limosa lapponica* (L.).**

Munn stellte als erster diese Art auf Mallorca fest, indem er am 5.ix.22 und 24.viii.25 drei Vögel bei Alcudia sah (1925, p. 45, 1926, p. 473).

***Tringa glareola* L.**

Wir beobachteten den Bruchwasserläufer verschiedentlich in der Albufera, im Sumpfe Gambas und bei Artá 1913 und 1921 zwischen dem 27.iii. und 2.v. und schossen 2 Belegstücke.

***Tringa nebularia* (Gunner).**

Homeyer sah den hellen Wasserläufer im Prat, Barceló nennt ihn wenig häufig im Winter und Frühjahr. Wir sahen 4 Vögel der Art am 5. und 9.v.27 in den Sümpfen bei Salinas.

***Tringa erythropus* (Pall.).**

Homeyer sah den dunkeln Wasserläufer bis Ende Mai im Prat, Munn einen einzelnen am 24.v.22 bei Alcudia (1925, p. 45) und wir drei am 5.v.27 bei Salinas.

***Tringa totanus* (L.).**

Wir beobachteten einzelne und kleine Flüge des Rotschenkels in der Albufera, Albufereta, Porrassa und bei Salinas auf allen drei Reisen vom 9. April bis 15. Mai. Auch Munn, der auch einen Vogel auf Menorca sah, schreibt, dass immer einige das ganze Jahr anzutreffen seien, dass die Art aber nicht auf der Insel brüte, während Homeyer und Bareeló—offenbar aus späten Beobachtungen wie auch Munn anfänglich—irrtümlich auf vereinzelt Brüten schlossen. Gosse sah ein Exemplar auf Formentera.—Ich schoss ein Belegstück am 9. Mai.

***Tringa ochropus* L.**

Munn beobachtete als erster den Waldwasserläufer vereinzelt im Winter und noch bis Ende Mai auf Mallorca und schreibt, dass er selten auch auf Menorca vorkomme. Gosse erwähnt ihn von Alcudia und Ibiza (vergl. Vogelf. II, p. 530, und Munn, 1924, p. 463).

Tringa hypoleucos L.

Ich zweifle nicht an dem sporadischen Brüten des Flussuferläufers auf den Balearen, da wir ihn des öfteren einzeln oder in Paaren während des Frühjahrs und später zur Brutzeit sahen immer wieder an derselben Stelle, so oft wir dahin kamen. Nester fand man allerdings von ihm bisher nicht. Munn sah ihn auch das ganze Jahr, im Winter häufiger.—Ich schoss 2 Paare.

Philomachus pugnax (L.).

Homeyer beobachtete den Kampfläufer bis Ende Mai im Prat, nach ihm und Barceló soll er im Winter und Frühjahr häufig sein, nach Ponseti dagegen nur selten auf dem Zuge auf Menorca.—Munn sah ihn auch bis Anfang April und nennt ihn selten. Wir begegneten ihm nur einmal am 4. und 5. Mai 27, wo sich drei Kampfläufer im Sumpfe Gambas bei Salinas herumtrieben.

Erolia alpina (L.).

Der Alpenstrandläufer wurde von Homeyer nicht selten gesehen, ich beobachtete ca. 15 Vögel am 15. v. 13 in der Porrassa und etliche Anfang Mai 27 bei Salinas; auch Munn stellte ihn verschiedentlich fest. Nach Ponseti wurde einer im April 21 auf Menorca erbeutet (Munn, 1926, p. 475).

Erolia minuta (Leisl.).

Am 2. v. schoss ich in der Porrassa einen Zwergstrandläufer aus einer Schar von 20-30 und sah ebensoviele Anfang Mai 27 bei Salinas, wo wir wieder 2 erlegten.—Munn sah ihn noch am 26. Mai. Auch auf Menorca ist er auf dem Zuge nicht selten. Nach Munn bleiben einige den Sommer über (1925, p. 45).

Erolia temmincki (Leisl.).

Am 15. v. 24 hielt sich eine kleine Schar einige Zeit bei Alcudia auf (Munn, 1926, p. 473).

Erolia ferruginea (Brünn.).

Der bogensehnäblige Strandläufer ist ein häufiger Durchzugsvogel im Frühjahr (Mai), weniger zahlreich—wie der Alpenstrandläufer—im Herbst (September). Einige bleiben nach Munn den Sommer über zurück, um sich im Herbst ihren nordwärts kommenden Vetteren auf ihrem Zuge nach dem Süden anzuschließen. Wir sahen ihn diesmal bei Salinas und schossen Anfang Mai 4 Vögel, von denen drei im roten Übergangskleid waren; Homeyer hatte auch 2 mitgebracht.

Erolia canutus (L.).

Der isländische Strandläufer wurde erstmalig von Munn im Oktober und November 1920 in einigen Exemplaren bei Alcudia für die Balearen nachgewiesen (Vogelf. II, p. 530).

Crocethia alba (Pall.).

Nach Munn sah Witherby einen Sanderling im Juli 1919 bei Alcudia (Vogelf. II, p. 530) und Munn selbst einige in der Albufera Anfang Mai 22 (1925, p. 45).

Himantopus himantopus (L.).

Der Stelzenläufer war 1913 noch ein ziemlich häufiger Brutvogel in der Porrassa, wo ich 6 Vögel schoss; heute hat er hier infolge der weit vorgeschrittenen Trockenlegung keine geeigneten Brutplätze mehr, und wir sahen jetzt auch nicht ein Stück mehr dort. Dagegen fanden wir ihn diesmal noch häufiger in der Albufera, wo wir ihn damals nicht antrafen, und wo er nun zahlreich brütet. Allenthalben, wenn wir mit dem Naehen die Kanäle des grossen Sumpfes befuhren, begleiteten uns mit lautem Geschrei Flügel dieses sonderbaren Vogels. —Mitte Mai 25 fand Munn in den Kolonien alle Nester mit Eiern belegt und am 10. vi. viele ausgebrütete Eier (Jourdain, 1927, p. 86). Der Stelzenläufer trifft nach Munn im April ein und zieht Ende August fort (vergl. auch Munn, 1926, p. 473).—Homeyer sah einzelne im Prat, lässt aber die Frage ihres Brütens offen. Wir sahen einen einzelnen am 23. vi. auf Formentera und 2 Paare am 9. v. im Sumpfe Gambas bei Salinas. Menorca berührt er nur auf dem Zuge (Ponseti).—Diese Art scheint in den letzten Jahren entschieden an Häufigkeit zuzunehmen.

Recurvirostra avosetta L.

Die Avosette ist nach Barceló und Ponseti ein seltener Gast Mallorcas und Menorcas.

Haematopus ostralegus L.

Nach Barceló ein seltener Besucher Mallorcas.—Munn sah einige Austernfischer bei Aleudia vom ii. iv. bis 3. v. 20.—Einer wurde im April 1921 auf Menorca geschossen (Munn, 1926, p. 476).

Arenaria interpres (L.).

Homeyer sah den Steinwälder einige Male unweit Palma am Strande; nach Barceló selten im Frühjahr und nach dem Erzherzog ebenso auf Ibiza (Vogelf. I, p. 131). Beobachtungen aus neuerer Zeit liegen nicht vor.

Cursorius cursor (Lath.).

Nach Ponseti ist der Rennvogel ein sehr seltener Gast Menorcas (Vogelf. I, p. 131).

Glaucopis pratensis (L.).

Homeyer schoss ein Paar Brachschwalben am 13. Mai 1861 auf Mallorca; Barcelós Angabe die Art betreffend ist kein Glaube zu schenken. Ponseti nennt sie einen seltenen Zugvogel Menorcas (Vogelf. I, pp. 131–32). Am ii. v. 25 scheinete Henrici bei Salinas ein Pärchen auf, konnte aber kein Nest finden (1927, p. 100). Munn sah einen einzelnen Vogel am 31. Mai 27 bei Aleudia, "evidently on migration" (1928, p. 21).—Ob die Brachschwalbe ein sehr seltener Brutvogel oder nur ein Zugvogel ist, ist somit bisher nicht zu entscheiden, ich möchte aber Ersteres eher nicht glauben.

Charadrius apricarius L.

Munn sah Goldregenpfeifer im Winter und im frühen Frühjahr auf Mallorca (meine Angaben über Munn's Beobachtungen in Vogelf. II, p. 591, dieser Art

sind leider ein Versehen, diese beziehen sich auf die folgende Art). Nach Ponseti kommt dieser Regenpfeifer im Winter auch auf Menorca vor. Ich sah einen ausgestopften in Palma, der von der Insel stammen soll.

Squatarola squatarola (L.).

Am 17. Mai 1921 schoss ich einen Kiebitzregenpfeifer bei der Albufera: Munn sah dort am 14. xi. 19 sieben und am 18. xi. 20 einen Vogel (Vogelf. II). Nach Ponseti ein nicht häufiger Wintergast Menorca's, wo Munn am 21. v. 24 drei feststellte.

Charadrius hiaticula L.

Homeyer beobachtete den Sandregenpfeifer und sagte, er brüete auf Mallorca. Ich sah ihn auch am 15. v. 13 in der Porrassa, wo er "augenscheinlich brütete" (Vogelf. I, p. 132). In meiner 2. Arbeit (p. 531) schrieb ich dann, dass ich an seinem Brüten doch zweifle, denn es waren uns 21 keine Vögel zu Gesicht gekommen, ebensowenig auf der letzten Reise. Es ist nun zweifellos, dass er tatsächlich im Gebiete nicht brütet, sondern vielmehr ein nicht zahlreicher Durchzügler im Mai auf den Inseln ist (vergl. Munn).—Homeyer schoss ein ♀ (Berliner Museum).

Charadrius dubius curonicus Gm.

"Der seltenste Regenpfeifer" schreibt Homeyer (vergl. Vogelf. I, p. 132).—Ich sah ihn 1913 gar nicht, 1921 wenige Male in der Albufera und schoss einen Jungen am 21. vi.—Munn fand Gelege am 16. iv. 4 und 21. v.; er gab in seiner ersten Arbeit eine eingehende Beschreibung des Nestes und der Eier (Vogelf. II). Dann fand er ein Gelege am 12. v. 23 auf Menorca, der erste Brutnachweis von dieser Insel (1924, p. 464). Henrici nahm 2 Gelege in der Albufera (1927, p. 100).—Ich selbst sah wenige Paare in der Porrassa, in den Sümpfen bei Salinas und schoss ein ♀ am 24. v. 27 an der Ostküste bei Artá, wo er offensichtlich brütete.—In Chamberlin schreibt Munn, dass diese Art früher auf Mallorca sehr selten gewesen sei und von Menorca erst kürzlich nachgewiesen wurde, und glaubt, dass sie den viel häufigeren Seeregenpfeifer langsam verdränge. Diese Meinung kann ich nicht ganz teilen, ich möchte eher annehmen, dass ersterer, der auch heute nur sehr wenig verbreitet ist, früher nicht erkannt oder nicht unterschieden worden ist von den wenigen inbetracht kommenden Beobachtern.

Charadrius alexandrinus L.

Der Seeregenpfeifer ist ein sehr häufiger Brutvogel an allen ihm zusagenden Plätzen. Ich sammelte einige Vögel, darunter ein ♀ am 26. iii. mit bereits grossem Brutfleck. Jetzt fand ich am 4. v. bei Salinas ein Nest mit 2 frischen Eiern, am 6. v. ein stark bebrütetes und am 23. vi. auf Formentera ein frisches Gelege; die Art scheint also mindestens zweimal zu brüten. Das erstgenannte Gelege von Salinas hielt ich für eins der vorigen Art, da auch in seiner unmittelbaren Nähe dauernd aufgeregt ein Paar solcher alten Vögel herumlief, kein anderes Nest in der Nähe war und etliche *alexandrinus* sich erst in weiterer Entfernung herumtrieben; es scheint sie aber doch um kleine Eier letzterer Art zu handeln (Näheres hierzu vergl. in Koenigs demnächst erscheinender Arbeit über meine Eieraushüte).—Munn sammelte eine ganze Reihe Gelege und gibt eine eingehende Schilderung des Brutgeschäfts (vergl. auch Vogelf. II,

pp. 531–32, Jourdain, 1927. p. 86, besonders Henrici, 1927, pp. 100–01).—Auf Menorca war er bisher nicht gefunden, doch gelang dies Munn, der am 21. v. 24 ein Nest mit drei Eiern fand; er ist hier aber bedeutend seltener als auf Mallorca. Eine Anzahl überwintert im Gebiete.

Vanellus vanellus (L.).

Den Winter über bis Anfang März ist der Kiebitz ein sehr häufiger Gast der Inseln.—Ein ausgestopfter Vogel von Mallorca steht in der Sammlung des Seminars in Palma.

Burhinus oedicnemus saharae (Rehw.).

Wir trafen den Triel an allen, den vielen ihm zusagenden Plätzen auf allen Inseln recht häufig an (vergl. Vogelf. I, II) und schossen noch vier weitere, im ganzen liegen also jetzt von dort 8 Stücke vor. Er brütet vom April an; wir fanden bei Artá ein frisches Gelege noch am 31. v. 27.—Henrici sah am 11. v. zwei Junge in Starengrösse (1927, p. 101).—Vergleicht man grosses Material, so findet man bei der Nominatform und bei *saharae* wechselseitig wohl einzelne angleichende Exemplare (vergl. Vogelf. I, p. 133). *saharae* ist aber vor allem durch die bedeutend hellere, mehr sandfarbene Oberseite im allgemeinen sehr gut unterschieden. Die Breite der Schaftstrieche der Oberkopffedern schwankt übrigens auch bei *saharae* beträchtlich, wenn auch bei den Extremen ein Unterschied besteht. Die 3 Vögel, von denen ich 1913 schrieb, dass sie mit der nördlichen Form übereinstimmten, sind doch auch noch heller als diese, alle übrigen aber sind sofort aus einer Serie der Nominatform herauszugreifen durch ihren viel helleren Rücken, wenn der Baleare auch anscheinend nicht so hell wird wie typische *saharae*. Ich habe geschwankt, ob ich den Balearen nomenclatorisch trennen sollte, da er eigentlich zwischen beiden steht, wenn auch der n. afrikanischen Form viel näher; ich tat es nicht, da grösseres Material doch vielleicht die völlige Gleichheit zeigen wird und der jetzt anscheinend bestehende Unterschied sehr klein ist; keinesfalls aber ist er mit der Nominatform zu identifizieren. Auch lag der Gedanke nahe, den balearischen Triel mit einer Mischformel (*oedicnemus* × *saharae* oder *oedicnemus* < *saharae*) zu bezeichnen. Dies ist aber m. E. nur zulässig bei Individuen, die tatsächlich aus einer Mischung hervorgegangen sind oder sein können, nicht dagegen bei Individuen einer Population, die als Standvogel eine Insel bewohnt.

Nach den von mir gemessenen Vögeln ist *saharae* deutlich kurzflüglicher als die Nominatform, und der Baleare schien mir noch kleiner. Ich maass: *oedicnemus* 238–52, Schwanz 11,8–12,9; Hartert 240–55 bzw. 12,0–13,2; Mss. Meinerzhagen (in ihrer Monographie, *Ibis*, 1924) dagegen 228(!)–53. Ich maass *saharae* (10 Stücke): 233–39; 11,5–12,6; Hartert (30 Stücke) 233–45 (keine Schwanzmaasse angegeben); Meinerzhagen dagegen 233 (1 × 224!)–52. Die Balearenvögel messen: 230–35; 11,2–12,4.

Nach Hartert beginnt also *oedicnemus* (ich maass Minimum 238) mit 240, nach Meinerzhagen mit 228! Diese und die anderen Differenzen sind auffallend, da wir wohl nach gleicher Methode messen. Nach Meinerzhagen beständen also überhaupt keine Grössenunterschiede. Vielleicht ist geographisch ungleiches Material gemessen worden und bestehen auch geographisch noch andere Grössendifferenzen. Vorläufig lässt sich also jedenfalls nichts Weiteres sagen.

Mergus merganser L.**Mergus serrator** L.**Mergus albellus** L.

“ Die drei Sägerarten zeigen sich selten in kalten Wintern nach Barceló und Ponseti auf dem Meere bei Mallorca und Menorca, am seltensten der Gänse-säger ” (Vogelf. I, p. 134).—Nach Munn hielt sich eine Anzahl der beiden ersten Arten im Winter 1920–21 an der Küste bei Alcudia auf (Vogelf. II, p. 532).—Ein Paar serrator wurde nach Ponseti im Oktober 1907 bei Mahon getötet ; eine grössere Zahl derselben Art zeigte sich im November und December in der Bucht von Alcudia, wo auch ein Erpel geschossen wurde (Munn, 1924, p. 461, 1925, p. 44).

Oxyura leucocephala (Scop.).

Barceló behauptet, dass die Ruderente im Winter und Frühjahr sehr selten bei Mallorca vorkomme (Vogelf. I, p. 134), die einzige Angabe über diese Art.

Nyroca fuligula (L.).

Die Reiherente hält sich wohl regelmässig zur Zugzeit auf und bei den Inseln auf (vergl. Vogelf. I, II, Munn u.A.).

Nyroca nyroca (L.).

Nach Barceló soll die Moorente im Winter häufig sein ; Munn beobachtete (1925, p. 43) die Art am 23. x. 1921.

Nyroca ferina (L.).

Die Tafelente ist ein häufiger Wintervogel des Gebietes (Barceló, Ponseti).—Munn beobachtete sie u.a. am 23. x. 21, im Februar 23 und ein Paar Ende Mai 23 bei Alcudia und vermutet ihr Nisten (1925, p. 44).—Am 13. Juni 27 machten wir in einem der Kanäle der Albufera vergebliche Jagd von Nachen aus auf einen Erpel der Art, der infolge Mauserung flugunfähig war, aber immer in solcher Entfernung vor dem Boote tauchte, dass einige Versuchsschüsse ihn nicht tödlich trafen ; schliesslich gegen Ende des Kanals tauchte er wieder, und wir sahen ihn plötzlich im klaren Wasser dicht vor dem Nachen, aber so tief, dass ich ihn nicht fassen konnte, erst weit hinter dem Boote kam er wieder an die Oberfläche.—Nach Aussage der Fischer brüten immer einige Paare in der Albufera.

Nyroca marila (L.).

Am 5. xi. 24 sah Munn eine Bergente an der Küste bei Alcudia, der erste Nachweis.

Netta rufina (Pall.).

Homeyer hatte die Kolbente brütend im Prat festgestellt und ein junges Stück erbeutet (vergl. Vogelf. I, p. 135), ich selbst sah ein ad. Männchen am 11. v. 21 in der Albufera, wo sie nach Aussage der Fischer auch jetzt noch vereinzelt brüten soll.

***Spatula clypeata* (L.).**

Bisher hatte nur Barceló angegeben, dass sich die Löffelente häufig im Winter bei den Inseln aufhalte; nun sagt auch Munn (1925, p. 43), dass sie nicht häufig im Gebiete vorkomme.

***Anas platyrhyncha* L.**

Die Stockente ist ein verbreiteter Brutvogel der Sumpfgebiete Malloras, namentlich der Albufera, soll aber auch auf Menorca und Ibiza leben. Ich fand Nester und sah Junge; Munn nahm Gelege im März und April, Henriei fand solche am 4. und 5. Mai (vergl. Vogelf. I, II). Sie überwintert in grossen Schaaren.

***Anas strepera* L.**

Nur Barceló behauptet, die Schnatterente zeige sich im Winter bei Mallorca—was natürlich keinen Nachweis bedeutet.

***Anas penelope* L.**

Die Pfeifente ist nach Barceló, Ponseti und Munn ein gemeiner Wintervogel.

***Anas querquedula* L.**

Nach Munn in geringer Anzahl im Frühjahr im Gebiete; Gosse sah sie auf Ibiza.

***Anas crecca* L.**

Gemeiner Herbst-, Winter- und Frühjahrsvogel, der aber nicht hier brütet.

***Anas acuta* L.**

Häufig im Winter, doch bleibt sie nach Munn bis Mitte April, wenn alle anderen Entenarten schon fortgezogen sind.—Wir fanden jetzt Anfang Mai in der Porrassa vertrocknete Überreste einer Spiessente, die offenbar von einem Raubvogel geschlagen war.

***Tadorna tadorna* (L.).**

Munn (1926, p. 471) beobachtete eine männliche Brandente bei Aleudia, die sich hier bei kaltem, stürmischem Schneewetter im Februar 1924 einige Zeit aufhielt—der erste Nachweis dieser Art für das Gebiet.

***Anser anser* (L.).**

Wir sahen eine auf Mallorca erlegte ausgestopfte Graugans, die nach Barceló häufig durchziehen soll, in Palma (Vogelf. I, p. 137). Munn (Vogelf. II, p. 533) stellte sie zuweilen fest.

***Anser fabalis* (Lath.).**

Die Saatgans soll nach Barceló und Ponseti selten durchziehen.

Anser albifrons (Scop.).

Die Blässgans sah Munn einmal in einem Exemplar am 19. ix. 21 bei Aleudia —der erste und einzige Nachweis.

Cygnus cygnus (L.).

Nach Barceló hielten sich im April 1864 eine ganze Anzahl Schwäne in der Albufera auf (Vogelf. I, p. 137).—Munn sagt (1924, p. 460), der Schwan komme in kalten Wintern selten auf beiden Inseln vor, ein ausgestopfter von Menorca stehe im Museum in Mahon.

Pelecanus onocrotalus L.

Im Jahre 1773 wurde ein Pelikan in der Albufera gefangen (Vogelf. I, p. 137).

Sula bassana (L.).

Ein Töpel wurde an der Küste Menorcas gefangen (Ponseti, Vogelf. I).

Phalacrocorax carbo subcormoranus (Br.).

Der grosse Kormoran ist ein häufiger Bewohner der Felsenküsten aller Inseln. Ich brachte ein Belegexemplar mit.

Phalacrocorax graculus desmarestii Payr.

Auch diese Form der Krähenscharbe ist ein sehr häufiger Brutvogel; wir trafen sie allenthalben an den Küsten der verschiedenen Inseln, sowohl auf den Felsen sitzend wie auf dem Meere. Ich schoss einen Vogel.—Nach Munn brütet sie zu ganz verschiedenen Zeiten, er traf im December Junge und sah aber auch Alte im Mai auf dem Neste in kleinen Felsenhöhlen der Küste (1925, p. 43, Henrici, 1927, pp. 101–02).

Stercorarius skua (Brünn.).

Homeyer sah eine grosse Raubmöve auf der See zwischen Barcelona und Mallorca und Munn eine am 29. iii. 20 zwischen Mallorea und Menorca (Vogelf. I, II).

Larus argentatus michahellesii Bruch.

Diese westmittelmeerländische Silbermöve ist ein verbreiteter Brutvogel der Küsten der Inselgruppen, und täglich sieht man sie auch über den Sümpfen fliegen oder in kleineren und grösseren Schaaren auf deren Sandflächen Nahrung suchend. Wir schossen einige.—Auf der kleinen Felseninsel Conejera fanden wir in der ersten Hälfte Mai eine Brutkolonie von ca. 30 Paaren. Die Nester standen in grösseren Abständen zwischen den Felsblöcken der Hochfläche. Am 4. v. 27 brachte uns ein Fischerjunge von dort ein frisches Dreiergelege, und am 12. v. entnahmen wir einem Nest 2 Eier, in dem schon grosse Junge waren und in anderen Nestern befanden sich bereits einige Tage alte Junge. Einen Pullus balgte ich.—Am 25. vi. schoss Baron Bodman am Strande von Ibiza mit einem Schuss 2 Juvenes, von denen ich einen präparierte, der andere

war stark defekt, hatte aber sehr merkwürdige Ruder (die ich abtrennte und mitnahm): An beiden Füßen fehlten die Schwimmhäute fast vollständig, nur bei genauem Zusehen finden sich ganz schmale, knapp 1 mm breite Säume; die Nägel der 3 grossen Zehen sind verküppelt, die Schilderung ist fleckig d.h. teilweise ohne Pigment, an den Zehen fehlen die Schilder mit Ausnahme der Mittelzehe, wo sie teilweise vorhanden aber auch verkümmert sind.

Larus marinus L.

Nach Barceló und Munn zeigt sich die Mantelmöve selten im Winter.

Larus fuscus L.

Nach Barceló im Winter häufig, nach Munn selten.

Larus canus L.

Nach Barceló und Ponseti soll die Sturmmöve im Herbst und Winter häufig sein, Munn sah sie nicht.

Larus melanocephalus Temm.

Wenn Ponseti behauptet, diese Art sei gemein auf Menorea, so hat sicherlich Munn recht, der glaubt, dass sie höchstens als seltener Gast die Inseln besuche; er sah einen Vogel am 11.iv.21 (Vogelf. I, II).

Larus genei Brème.

Munn schreibt 1921, dass er am 21.v.21 eine Möve dieser Art beim Hafen von Alcudia gesehen habe, und nach Ponseti kommt sie selten auf Menorea vor.

Larus ridibundus L.

Lachmöven sahen wir des öfteren, und am 31.iii.13 schoss ich ein Belegstück. Sie ist im Winter häufig und verlässt das Gebiet im April.

Larus audouini Payr.

Homeyer will diese " wohl eigentlich nordamerikanische " (!) Möve dreimal an der Küste Mallorcas gesehen haben; Barcelos und Saunders' Angaben fassen wohl auf dieser (vergl. Vogelf. I, pp. 139-40). Ihr Vorkommen ist daher nur mit einem Fragezeichen versehen anzuführen, auch wenn sie als Erster Bonaparte 1857 von den Balearen nennt (Vogelf. II, p. 534).

Larus minutus Pall.

Munn sah zum ersten Male die Zwergmöve und zwar von Ende März bis Anfang April 21 im Hafen von Alcudia (Vogelf. II, p. 543). Dann schreibt er (1925, p. 46), dass sich ein weiterer Vogel am 27.x.21 im gleichen Hafen aufhielt, und dass nach Ponseti im April 21 ein Stück in Menorea erbeutet wurde (1926, p. 476).

Larus glaucoides Meyer.

Munn gibt an, dass er im März 22 mehrere Tage diese seltene Möve zwischen Heringsmöven im Hafen von Palma gesehen habe. "It must be of very unusual occurrence in the Mediterranean" (1925, p. 46).—Nach Hartert streicht die Polarmöve (Heimat: arktisches Nordamerika, Grönland, Jan Mayen; Munn nennt sie "Iceland Gull") vereinzelt bis zur Westküste Frankreichs und soll einmal auf Madeira vorgekommen sein; dagegen geht die Eismöve (circumpolar, Island), *Larus hyperboreus* vereinzelt bis zum Mittelmeer; sie ist der Polarmöve sehr ähnlich, und ob Munn sie wirklich im Freien sicher unterscheiden konnte? —Ich sprach ihm schriftlich meine Bedenken aus, er antwortete mir aber, dass er die Art *s i e h e r* angesprochen habe ("it is a white-winged gull") und dass keine Verwechslung mit der Eismöve oder einer anderen Art vorliege.—Trotzdem kann ich meine Bedenken nicht ganz unterdrücken.

Rissa tridactyla (L.).

Die Angabe Weylers (1854) vom Vorkommen der Stummelmöve auf den Balearen, welche Notiz auch Barceló erwähnt, ist die einzige und daher nur als fraglich zu bezeichnen.

Gelochelidon nilotica (Gm.).

Barceló gibt an, die Lachseeschwalbe komme selten im Frühjahr und Sommer auf Mallorca vor; spätere Daten liegen nicht vor (Vogelf. I, p. 140).

Sterna sandvicensis Lath.

Die Brandseeschwalbe soll nach Barceló ein seltener Gast Mallorcas sein (Vogelf. I, p. 140).

Sterna hirundo L.

Barceló nennt die Flusseeschwalbe einen häufigen Standvogel Mallorcas (Vogelf. I). Sie brütet heute keinesfalls mehr im Gebiete. Munn beobachtete die Art am 11.iv.21 bei Alcudia (Vogelf. II), ferner am 17.v.22 und 13.iv.25 (1926, p. 473).

Sterna albifrons Pall.

Nach Homeyer und Barceló ist die Zwergseeschwalbe ein nicht häufiger Brutvogel Mallorcas (Vogelf. I, p. 141); heute brütet auch sie nicht mehr hier. Munn schreibt (in Chamberlin, p. 171), sie sei jetzt ein sehr seltener Zugvogel im Frühjahr, dagegen 1928, p. 21, er habe am 30.iv.26 drei Vögel im Hafen von Alcudia gesehen bei stürmischem Wetter und dies sei die erste Beobachtung der Art seit der Homeyers im Jahre 1861.

Sterna dougallii Mont.

Nach Saunders war eine Paradiesseeschwalbe in der Sammlung Tristrams, die aus der Gegend von Menorea stammte (Vogelf. II, p. 534, und Munn, 1926, p. 476). Ob die Angabe stimmt?

Hydroprogne tschegrava (Lep.).

Munn sah eine Raubseeschwalbe am 28. iv. 20 über die Albufera nordwärts fliegen (Vogelf. II) und ein Paar am 14. vi. 22 (1925, p. 46).

Chlidonias nigra Raf.

Homeyer nannte die Trauerseeschwalbe einen häufigen Brutvogel des Prat und der Albufera. Nach Barceló war sie das ganze Jahr über auf Mallorca und Menorca, nach Ponseti auf letzterer Insel aber nur ein seltener Gast (Vogelf. I, p. 144). Heute brütet sie jedenfalls nicht mehr auf der Insel. Munn sah am 10. ix. 23 einen jungen Vogel bei Alcudia (1925, p. 47), einige Tage später wieder; dann einen Flug Ende August 25, und am 24. viii. 25 fand er ein junges Stück, das wohl gegen einen elektrischen Draht geflogen war. Henrici beobachtete am 9. v. 24 ein Exemplar über der Albufereta (1927, p. 102).

Chlidonias leucoptera (Temm.).

Diese Seeschwalbe brütete nach Homeyer und Barceló gleichfalls auf Mallorca: Saunders erlegte einen Vogel hier im Mai (Vogelf. I, p. 441).—Nach Munn ist sie ein seltener Durchzügler; er sah einige am 7. v. 24 in der Albufera (1926, p. 474).

Chlidonias leucopareia (Temm.).

Die weissbärtige Seeschwalbe beobachteten wir an mehreren Tagen hintereinander, Anfang Mai 27, in 3–7 Exemplaren über dem Sumpfe Gambas, leider immer grade ausser Schussweite.—Munn sah etliche über der Albufera am 9. ix. 24 und einen einzelnen Vogel ebendort am 19. v. 25 und wieder einen Flug an der Südküste am 26. v. 25 (1926, p. 474).—Ein Exemplar wurde nach Ponseti im April 1912 auf Menorca erbeutet (Munn, 1926, p. 476).—Munn schreibt, dass die letztgenannten drei Arten Seeschwalben in den letzten Jahren häufiger beobachtet werden und meint, dass sie vielleicht demnächst wieder ihre alten Brutplätze beziehen werden, wenn man ihnen, was kaum der Fall sein würde, nicht nachstellt (Chamberlin, p. 171).

Puffinus kuhlii (Boie).

Diesen Sturmtaucher sieht man allenthalben in kleineren und grösseren Flügen auf dem Meere in nicht allzugrosser Entfernung von der Küste; auf offener See z. B. auf der Fahrt von Mallorca nach Ibiza trifft man ihn nur vereinzelt. Er brütet in grösserer Zahl an den Felsküsten der kleinen und der grossen Inseln, namentlich an der Cabrera, Conejera, etc.—Ausser dem 1913 erhaltenen Vogel schossen wir jetzt zwei weitere vom Nachen aus am 11. v. in der Nähe der Cabrera. Munn fand im 19. v. 24 eine grosse Kolonie an der Küste von Menorca, zu welcher Zeit erst wenige Eier gelegt waren, während am 27. v. 27 die meisten Nester Eier enthielten (Munn, 1926, pp. 476–77, 1928, p. 22). Am 20. v. 24 fand Henrici am Strande von Formentera eine zerbrochene Eischale (1927, p. 102).

Puffinus puffinus mauretanicus Lowe.

Auch diese Art sieht man allenthalben, aber doch nicht so häufig wie die vorige. Sie brüdet an den gleichen Ortlichkeiten. Am selben Tage 1927 schossen wir auf der gleichen Fahrt auch 2 Exemplare und erhielten von den Fischerjungen am 4. v. einen Pullus, den er auf der Conejera gegriffen hatte.

Hydrobates pelagicus (L.).

Sowohl auf der Fahrt nach der Cabrera wie nach Ibiza sahen wir etliche Sturmschwalben am ii. v. und 20. vi. 27, leider aber bogten sie in ihrem schnellen Fluge immer ausserhalb der Schussweite ab. Wie die Fischer uns sagten, sollen auch sie auf den kleinen Felseneilanden brüten. Munn schreibt (1925, p. 47), dass ein Vogel im Museum in Mahon stehe, der von Menorea stammen soll, während Ponseti die Art nicht aufführt; er beobachtete die Sturmschwalbe im Sommer 21 und April 22 bei Mallorea.—Murphy begegnete der Art oft auf der See in der Nähe der Balearen zwischen dem 16. und 30. Juli 26 und schoss einige für sein amerikanisches Museum.

Oceanodroma leucorhoa (Vieill.).

Murphy schoss einen jungen gabelschwänzigen Sturmvogel am 16. vii. 1926 etwa 53 Seemeilen n. westl. Menorea (1926, p. 554).—Munn sah einen einzelnen Vogel am 11. vi. 24 und einen anderen am 28. viii. 25 in der Bucht von Alcudia (1928, p. 21).

Colymbus stellatus (Pontopp.).

Nach Ponseti ist der Nordseetaucher ein seltener Gast auf dem Meere bei Menorea in strengen Wintern (Vogelf. I, p. 142).

Colymbus arcticus L.

Henrici gibt an, dass am 20. v. 24 im Hafen von Formentera ein Polar-taucher dicht neben seinem Boote auftauchte " von Rüdiger bestimmt diagnosti-ci-ert."

Colymbus immer Brünn.

Nach Ponseti wurde ein Eisseetaucher im Januar 1917 bei Menorea erbeutet (Munn, 1926, p. 477).

Podiceps cristatus (L.).

Die Behauptung Barcelós, der Haubentaucher brüte vereinzelt in der Albufera, lässt sich nicht nachprüfen, heute jedenfalls ist er nur ein seltener Besucher, als welchen ihn auch Ponseti für Menorea bezeichnet (Vogelf. I, p. 142); Munn sah einige Haubentaucher im Winter 20-21 bei Alcudia (Vogelf. II, p. 535).

Podiceps nigricollis Br.

Munn vermutet das Brüten des Schwarzhalstauchers in der Albufera wo ich am ii. v. 21 auch einen sah, den ich—ohne Sicherheit—für diese Art hielt (Vogelf. II); im Winter hält er sich nach Munn in geringer Zahl an der Küste bei Alcudia auf. Nach Ponseti ein seltener Gast Menoreas.

Podiceps ruficollis (Pall.).

Nach Barceló, Ponseti und Munn ist der Zwergsteissfuss ein nicht grade seltener Standvogel beider Inseln. Wir sahen ihn diesmal öfters auf den Kanälen der Albufera, wo ich am 13. vi. einen jungen Vogel schoss. Am 16. v. beobachtete ich ein ♂ im Prachtkleid in dem kleinen Sumpfe bei den Höhlen von Artá, wo er auch brütet.

Podiceps griseigena (Bodd.).

Munn sah im November 1921 einige Rothalstaucher bei Alcudia (Vogelf. II, p. 535).

Was das angebliche Vorkommen (nach Barceló) des Ohrensteissfusses, *Podiceps auritus* (L.), angeht, verweise ich auf Vogelf. I, p. 143; ein Nachweis ist nicht erbracht.

Alca torda L.

Wir sahen 1913 einige ausgestopfte, von Mallorca stammende Tordalke (Vogelf. I, p. 143) und ich beobachtete einen Vogel am 16. v. in der See bei der Porrassa, der wohl diese Art war.—Nach Barceló und Ponseti seltene Gäste an den Küsten beider Inseln.—Munn beobachtete im Juli 21 mehrere Male 5 Stücke am Cabo del Pinar, und nach ihm wurde am 10. i. 23 ein Vogel im Hafen von Alcudia gefangen. Er hält sein Brüten im Gebiet nicht für unmöglich, eine Meinung, die er auch in Chamberlin, p. 171, wiederholt; das ist natürlich ausgeschlossen.

Uria aalge (Pont.).

Die Trottellumme soll nach Barceló und Ponseti sehr selten bei Mallorca und Menorea gesehen sein (Vogelf. I, p. 144), eine Angabe, die Munn wiederholt; ein Beweis ist nicht erbracht, und ich glaube eher an eine Verwechslung.

Fratercula arctica meridionalis (Jordans).

Wir kamen auch dieses Jahr wieder zu spät, um noch Papageitautauher anzutreffen; allerdings waren sie nach Mitteilung der Fischer noch bis Mitte April in einzelnen Flügen vor der Ostküste Mallorcas. Im Spätherbst kommen sie an, und den Winter über sind sie alljährlich in grossen Mengen—die Fischer sagten mir, in Schwärmen von hunderten und aberhunderten—vor allen Küsten der Inseln, aber selten nahe dem Lande. Wie mir immer wieder versichert wurde, sollen aber einzelne Paare und kleinere Flüge auch den Sommer über auf der See anzutreffen sein. Verschiedene Angaben vom Brüten und bestimmten Brutplätzen erwiesen sich als falsch, wahrscheinlich—wenigstens in 2 Fällen konnte ich das ziemlich sicher feststellen—wurde uns das nur berichtet in der Annahme, uns damit einen Gefallen zu tun! Woher diese Mengen kommen, ist immer noch ein Rätsel.—Wir fanden verschiedentlich an der Küste im Süden Mallorcas und auf Ibiza am Strande angetriebene mehr oder weniger vollständige, vertrocknete Reste des Vogels.—Eingehendere Ausführungen findet man in meinen beiden ersten Arbeiten.

Ein alter Fischer erzählte uns folgende Mär, als ich ihn nach seinen jahrzehntelangen Beobachtungen des "Que de fet" ausfragte: Im späten Frühjahr, wenn die Brutzeit beginne, zögen die Scharen langsam immer weiter von den

Küsten fort aufs offene Meer oder in ganz einsame Buchten, wohin nie ein Mensch, nicht einmal der Fischer käme. Daher sähe man sie dann nie mehr in der Nähe der Inseln, wo man ihnen die ganze übrige Jahreszeit allenthalben begegne. Hier teilten sie sich in kleine Gesellschaften oder auch in einzelne Paare, und nun begänne die Brut. Einzelne Vögel treffe man aber auch zu dieser Zeit weit draussen, und das seien Vögel, die entweder noch nicht fortflugfähig wären oder beschädigte Flügel hätten oder aber solche, deren Männchen bezw. Weibchen umgekommen seien. Eier könne man niemals finden, denn—der Vogel brüte auf dem Boden des Meeres!—Ich stellte aus weiteren Fragen fest, dass der Mann mir dies nicht etwa erzählte, um zu hören, was ich eigentlich in Wirklichkeit von der Vogelwelt verstehe, oder um mich zum Besten zu halten, sondern dass dies seine wirkliche Meinung war, die ich auch von anderen so alten und erfahrenen Fischern, wie er einer sei, bestätigt hören würde.—Man mag aus dieser Erzählung ersehen, wie vorsichtig man mit Angaben sein muss, die einem von anscheinend glaubwürdigen Leuten dort berichtet werden; glauben kann man nur solchen, die man wirklich kennt und deren Zuverlässigkeit man bei anderen Gelegenheiten selbst nachprüfen konnte.

Hier möchte ich zum Schlusse noch eine andere, schöne Sage erzählen, die mir ein durchaus zuverlässiger Mann, ein eifriger Jäger und guter Vogelkenner, in ehrlicher Überzeugung ihrer Wahrheit berichtete, als ich ihn nach dem Brüten oder Nichtbrüten einiger Sumpfvögel auf den Balearen fragte:

“Die Bekassine brütet hier nicht, es wurde nie ein Nest von ihr gefunden. Aber auch Sie aus dem Norden, wo viele andere Vögel brüten, die sich bei uns nur auf dem Zuge aufhalten, werden ebensowenig wie ein anderer Mensch je ein Nest von ihr gefunden oder ihre Eier gesehen haben; denn diese gibt es auch in keiner Sammhung der Welt.” Auf meine Entgegnung, dass ich allerdings selbst noch kein Nest gefunden habe, da sie noch weiter im Norden brüte, als wo ich lebte, dass ich aber wohl schon viele Eier von ihr gesehen hätte, ich auch selbst solche besässe, wurde der alte Mann ernst und sagte: “Glauben Sie das nicht! Die Eier, die man Ihnen als solche angab und vielleicht zu hohem Preis wegen ihrer Seltenheit verkaufte, stammen von irgend einem anderen Vogel, dessen Eier Sie nicht kernen, und weshalb Sie dann glaubten, dass sie von unserem Vogel, der Bekassine—er meinte aber sicher den dort auf dem Zuge so häufigen bogenschmäßigen Strandläufer in seinem blutroten Übergangs kleid—stammten. Denn: “Als Christus sein Kreuz trug und seine Blutstropfen auf die Erde fielen, liefen zwei Bekassinen hinter ihm her und wischten mit ihrer Brust das Blut vom Boden, um die Schmach zu tilgen, die die Menschen ihrem Gotte antaten. Da wandte sich Christus um, blieb stehen und sagte ergriffen zu diesen Tieren: “Dafür, dass Ihr Tiere die Schmach Eures Gottes nicht sehen mochtet und ihre Spuren zu tilgen versucht, dafür soll nie ein Mensch Euer Nest finden, um Euch Leid's anzutun.”—Sehen Sie, daher weiss ich, dass man Sie betrog!”—Ich hütete mich, an solchen, schönen Glauben zu rühren.

Daher, so schloss der Erzähler, der alte mallorquinische Spruch, der sagen will, dass kein Sterblicher trotz allen Suchens je das Nest der Bekassine finden wird:

“Ni qui es nat,
Ni qui nechera
Niu de Sequo
No trobera.”

Hiermit schliesse ich den speciellen Teil und füge noch einige Übersichten an in Ergänzung und teilweiser Berichtigung der in Vogelf. II, gegebenen.

Verzeichnis der bisher aus dem Gebiete beschriebenen endemischen Vogelformen :

1. *Muscicapa striata balearica* Jordans.
2. *Cettia cetti salvatoris* Jordans.
3. *Sylvia atricapilla koenigi* Jordans.
4. *Sylvia sarda balearica* Jordans.
5. *Cisticola juncidis intermedius* Jordans.
6. *Luscinia megarhynchos luscinioides* Jordans.
7. *Parus maior mallorcae* Jordans.
8. *Parus coerules balearicus* Jordans.
9. *Regulus ignicapillus balearicus* Jordans.
10. *Galerida theklae polatzeki* Hartert.
11. *Troglodytes troglodytes mülleri* Jordans.
12. *Chloris chloris mallorcae* Jordans.
13. *Carduelis carduelis propeparva* Jordans.
14. *Loxia curvirostra balearica* Homeyer.
15. *Fringilla coelebs balearica* Jordans.
16. *Petronia petronia balearica* Jordans.
17. *Passer domesticus balearoibericus* Jordans.
18. *Emberiza tschusii witherbyi* Jordans.
19. *Otus scops mallorcae* Jordans.
20. *Tyto alba kleinschmüdti* Jordans.
21. *Alectoris rufa laubmanni* Jordans.
22. *Streptopelia turtur loëi* Jordans.

Nicht endemisch :

23. *Fratercula arctica meridionalis* Jordans.

Die endemischen Formen der Balearen—Pityusen zeichnen sich aus z.T. durch ihre *Kleinheit*, wie es bei Inscrassen ja meist der Fall ist, ausserdem aber durch *Helligkeit* und Verdrängung brauner Färbungen durch *grau e*, während sonst Inselformen meist dunkler sind als ihre Festlandsvertreter.—Die Fauna des Gebietes—nicht nur die Vogelfauna—steht der südostspanischen und n.w. afrikanischen bedeutend näher, als der nordspanischen und vor allem der tyrrhenischen. Schwierige Einzelfragen der Verbreitung mancher Vogelarten harren noch der Lösung.

Verzeichnis der bisher als sicher brütend auf den Balearen—Pityusen festgestellten Vogelarten und = formen :

1. *Lanius scutor badius* Hartl.
2. *Muscicapa striata balearica* Jordans.
3. *Cettia cetti salvatoris* Jordans.
4. *Acrocephalus arundinaceus arundinaceus* (L.).
5. *Acrocephalus scirpaceus scirpaceus* (Herm.).
6. *Luscinola melanopogon* (Femm.) subsp. ?
7. *Sylvia atricapilla koenigi* Jordans.
8. *Sylvia melanocephala melanocephala* (Gm.).

9. *Sylvia sarda balearica* Jordans.
10. *Cisticola juncidis intermedia* Jordans.
11. *Turdus merula hispaniae* Kleinschm.
12. *Monticola saxatilis* (L.).
13. *Monticola solitaria solitaria* (L.).
14. *Oenanthe oenanthe nivea* (Weigold).
15. *Saxicola torquata rubicola* (L.).
16. *Luscinia megarhynchos luscinioides* Jordans.
17. *Troglodytes troglodytes mülleri* Jordans.
18. *Parus maior mallorcae* Jordans.
19. *Parus coeruleus balearicus* Jordans.
20. *Regulus ignicapillus balearicus* Jordans.
21. *Calandrella brachylactyla brachylactyla* (Leisl.).
22. *Galerida theklae polatzeki* Hart.
23. *Budytes flavus fasciatus* Zander.
24. *Anthus campestris campestris* (L.).
25. *Chloris chloris mallorcae* Jordans (Balearen).
26. *Chloris chloris aurantiiventris* Cab. (Pityusen).
27. *Carduelis carduelis propeparva* Jordans.
28. *Acanthis cannabina mediterranea* Tsch.
29. *Serinus canaria serinus* (L.).
30. *Loxia curvirostra balearica* Hom.
31. *Fringilla coelebs balearica* Jordans.
32. *Petronia petronia balearica* Jordans.
33. *Passer domesticus balearoibericus* Jordans.
34. *Emberiza calandra calandra* L.
35. *Emberiza cirrus cirrus* L.
36. *Emberiza tschusii witherbyi* Jordans.
37. *Corvus corax hispanus* Hart. & Kleinschm.
38. *Hirundo rustica rustica* L.
39. *Delichon urbica meridionalis* (Hart.).
40. *Riparia riparia* (L.).
41. *Riparia rupestris rupestris* (Scop.).
42. *Apus apus* (L.).
43. *Apus pallidus illyricus* (Tsch.).
44. *Apus melba* L.
45. *Merops apiaster* L.
46. *Upupa epops* L.
47. *Cuculus canorus bangsi* Oberh.
48. *Caprimulgus europaeus meridionalis* Hart.
49. *Otus scops mallorcae* Jordans.
50. *Tyto alba kleinschmidti* Jordans.
51. *Falco peregrinus* (subsp. ?).
52. *Falco eleonora* Géné.
53. *Falco tinnunculus* L. (*Falco tinnunculus intercedens* Br.).
- *54. *Aquila chrysaetos homeyeri* (Sev.).
55. *Hieraaëtus pennatus* (Gm.).
- *56. *Hieraaëtus fasciatus* (Vicill.).
57. *Circus aeruginosus aeruginosus* (L.).

58. *Milvus milvus* (L.).
59. *Pandion haliaëtus* (L.).
60. *Neophron percnopterus* (L.).
61. *Aegyptius monachus* (L.).
62. *Alectoris rufa laubmanni* Jordans.
63. *Coturnix coturnix* (L.).
64. *Columba palumbus* L.
65. *Columba livia* subsp. ?
66. *Streptopelia turtur loëi* Jordans.
67. *Botaurus stellaris* (L.).
- *68. *Ixobrychus minutus* (L.).
- *69. *Ardea cinerea* L.
70. *Ardea purpurea* L.
71. *Rallus aquaticus* L.
- *72. *Porzana porzana* (L.).
73. *Gallinula chloropus* (L.).
74. *Fulica atra* L.
75. *Himantopus himantopus* (L.).
76. *Charadrius dubius curonicus* Gm.
77. *Charadrius alexandrinus* L.
78. *Burhinus oedicnemus saharae* (Rchw.).
- *79. *Anas platyrhynchos* L.
80. *Phalacrocorax carbo subcormoranus* (Br.).
81. *Phalacrocorax graculus desmarestii* Payr.
82. *Larus argentatus michahellesii* Bruch.
83. *Puffinus kuhlii* (Boie).
84. *Puffinus puffinus mauretanicus* Lowe.
85. *Podiceps ruficollis* (Pall.).

* Kein Belegexemplar in meiner Sammlung.

Verzeichnis der bisher als brütend im Gebiete angegebenen, aber nicht sicher als solcher festgestellter Arten und solcher, die früher anscheinend gebrütet haben, dies aber heute nicht mehr tun¹:

- *1. *Acrocephalus aquaticus* (Gm.).
- *2. *Sylvia hortensis hortensis* (Gm.).
3. *Sylvia communis communis* Lath.
- *4. *Sylvia borin borin* (Bodd.).
5. *Oenanthe oenanthe (nivea* Weigold) (Balearen).
6. *Phoenicurus phoenicurus* (L.).
- *7. *Acanthis citrinella* (L.).
8. *Oriolus oriolus* (L.).
9. *Iynx torquilla* L.
- *10. *Athene noctua* (Scop.).
- ? †*11. *Falco naumanni* Fleisch.
- *12. *Circus cyaneus* (L.)
13. *Nycticorax nycticorax* (L.).
- *14. *Ardcola ralloides* (Scop.).

¹ Diese durch † kenntlich gemacht.

- †*15. *Egretta garzetta* (L.).
- †*16. *Phoenicopterus ruber antiquorum* Br.
- *17. *Porzana pusilla intermedia* (Herm.).
- *18. *Porzana parva* (Scop.).
- †*19. *Fulica cristata* Lath.
- †*20. *Porphyrio caeruleus* (Vand.).
- 21. *Tringa hypoleucos* L.
- *22. *Glaucola pratincta* (L.).
- *23. *Nyroca ferina* (L.).
- *24. *Netta rufina* (Pall.).
- *25. *Larus melanocephalus* Temm. (Menorca).
- †*26. *Sterna hirundo* L.
- †*27. *Sterna albifrons* Pall.
- †*28. *Chlidonias nigra* Raff.
- †*29. *Chlidonias leucoptera* (Temm.).
- *30. *Hydrobates pelagicus* (L.).
- †*31. *Podiceps cristatus* (L.).
- 32. *Podiceps nigricollis* Br.

Verzeichnis der als mehr oder weniger regelmässige Durchzügler festgestellten Arten
und Formen :

- 1. *Lanius senator senator* L.
- 2. *Muscicapa striata striata* (Pall.)
- 3. *Muscicapa hypoleuca hypoleuca* Pall.
- 4. *Phylloscopus collybita collybita* (Vieill.).
- 5. *Phylloscopus trochilus trochilus* (L.).
- *6. *Phylloscopus bonelli* (Vieill.).
- 7. *Phylloscopus sibilatrix sibilatrix* (Bechst.).
- 8. *Sylvia atricapilla atricapilla* (L.).
- 9. *Sylvia communis communis* Lath.
- 10. *Sylvia cantillans cantillans* Pall.
- 11. *Sylvia undata undata* Bodd.
- *12. *Turdus pilaris* L.
- *13. *Turdus viscivorus* L.
- *14. *Turdus philomelos* Br.
- *15. *Turdus musicus* L.
- *16. *Turdus torquatus* L.
- 17. *Oenanthe oenanthe* (L.).
- 18. *Oenanthe hispanica hispanica* (L.).
- 19. *Saxicola rubetra rubetra* (L.).
- 20. *Phoenicurus phoenicurus* (L.).
- 21. *Phoenicurus ochruros ater* (Br.).
- 22. *Luscinia svecica cyaneola* (Wolf).
- ? *23. *Luscinia luscinia* L.
- 24. *Erithacus rubecula rubecula* (L.).
- 25. *Prunella modularis modularis* (L.).
- *26. *Regulus regulus* (L.).
- *27. *Alauda arvensis* L.

- *28. *Lullula arborea* (L.).
- 29. *Budytes flavus borealis* Sund.
- *30. *Budytes flavus flavus* (L.).
- 31. *Motacilla alba alba* L.
- 32. *Motacilla cinerea* Tunst.
- 33. *Anthus trivialis trivialis* (L.).
- 34. *Anthus pratensis pratensis* (L.).
- 35. *Coccothraustes coccothraustes* (L.).
- *36. *Acanthis spinus* (L.).
- *37. *Fringilla montifringilla* L.
- 38. *Emberiza hortulana* L.
- *39. *Emberiza schoeniclus schoeniclus* (L.).
- 40. *Oriolus oriolus* (L.).
- *41. *Sturnus vulgaris* L.
- 42. *Apus melba* L.
- 43. *Upupa epops* L.
- *44. *Alcedo atthis* L.
- 45. *Lynx torquilla* L.
- 46. *Cuculus canorus canorus* L.
- *47. *Asio flammeus* Pontopp.
- *48. *Falco subbuteo* L.
- *49. *Falco columbarius aesalon* Tunst.
- *50. *Buteo buteo* (L.).
- *51. *Accipiter nisus* (L.).
- *52. *Circus cyaneus* (L.).
- 53. *Coturnix coturnix* (L.).
- *54. *Streptopelia turtur turtur* (L.).
- 55. *Nycticorax nycticorax* (L.).
- *56. *Phoenicopterus ruber antiquorum* Temm.
- *57. *Crex crex* (L.).
- 58. *Fulica atra* L.
- *59. *Scolopax rusticola* L.
- *60. *Capella gallinago* (L.).
- *61. *Lymnocyptes minimus* (Brünn.).
- 62. *Numenius arquatus* (L.).
- *63. *Limosa limosa* (L.).
- 64. *Tringa glareola* L.
- *65. *Tringa nebularia* (Gunner).
- *66. *Tringa erythropus* (Pall.).
- 67. *Tringa totanus* (L.).
- *68. *Tringa ochropus* L.
- 69. *Tringa hypoleucos* L.
- *70. *Philomachus pugnax* (L.).
- 71. *Erolia alpina* (L.).
- 72. *Erolia minuta* (Leisl.).
- 73. *Erolia ferruginea* (Brünn.).
- *74. *Glareola pratincola* (L.).
- *75. *Charadrius apricarius* L.
- 76. *Squatarola squatarola* (L.).

- *77. *Charadrius hiaticula* L.
- *78. *Vanellus vanellus* (L.).
- *79. *Mergus merganser* L.
- *80. *Mergus serrator* L.
- *81. *Mergus albellus* L.
- *82. *Nyroca fuligula* (L.).
- *83. *Nyroca nyroca* (L.).
- *84. *Nyroca ferina* (L.).
- *85. *Spatula clypeata* (L.).
- *86. *Anas platyrhynchos* L.
- *87. *Anas penelope* L.
- *88. *Anas querquedula* L.
- *89. *Anas crecca* L.
- *90. *Anas acuta* L.
- *91. *Anser anser* (L.).
- *92. *Larus marinus* L.
- *93. *Larus fuscus* L.
- *94. *Larus canus* L.
- 95. *Larus ridibundus* L.
- *96. *Larus minutus* Pall.
- *97. *Sterna hirundo* L.
- *98. *Chlidonias nigra* Raff.
- *99. *Chlidonias leucoptera* (Temm.).
- *100. *Chlidonias leucopareia* (Temm.).
- *101. *Podiceps cristatus* (L.).
- 102. *Mormon arcticus meridionalis* Jordans.

Verzeichnis irregulärer Gäste :

- *1. *Lanius excubitor meridionalis* Temm.
- ? *2. *Muscicapa albicollis* Temm.
- *3. *Acrocephalus schoenobaenus* (L.).
- *4. *Sylvia conspicillata* Temm.
- *5. *Sylvia curruca curruca* (L.).
- *6. *Turdus dauma aureus* Hol.
- 7. *Oenanthe oenanthe leucorrhoa* (Gm.).
- *8. *Tichodroma muraria* (L.).
- *9. *Motacilla alba yarellii* Gould.
- ? *10. *Anthus spinoletta spinoletta* (L.).
- ? *11. *Anthus spinoletta obscura* (Lath.).
- ? *12. *Passer montanus* L.
- *13. *Emberiza citrinella* L.
- ? *14. *Emberiza cia* L.
- *15. *Sturnus unicolor* Temm.
- ? *16. *Corvus corone* L.
- *17. *Corvus cornix* L.
- ? *18. *Corvus frugilegus* L.
- *19. *Pyrhocorax pyrrhocorax* (L.).
- *20. *Coracias garrulus* L.

- *21. *Clamator glandarius* (L.).
- ? *22. *Asio otus* (L.).
- ? *23. *Strix aluco* L.
- *24. *Falco vespertinus* L.
- ? *25. *Falco naumanni* Fleisch.
- ? *26. *Aquila heliaca adalberti* Br.
- 27. *Circus pygargus* (L.).
- 28. *Circus macrourus* (Gm.).
- *29. *Milvus migrans migrans* (Bodd.).
- *30. *Pernis apivorus* (L.).
- ? *31. *Haliaeetus albicilla* (L.).
- *32. *Gyps fulvus* (Hablitzl.).
- ? *33. *Francolinus francolinus* (L.).
- *34. *Columba oenas* L.
- *35. *Ardeola ralloides* (Scop.).
- *36. *Egretta alba* L.
- *37. *Egretta garzetta* (L.).
- *38. *Bubulcus ibis* (L.).
- *39. *Ciconia ciconia* (L.).
- *40. *Plegadis falcinellus* (L.).
- *41. *Platalea leucorodia* L.
- *42. *Megalornis grus* (L.).
- *43. *Anthropoides virgo* (L.) (im 18. Jahrhdt.).
- *44. *Otis tetrax* L.
- *45. *Numenius phaeopus* (L.).
- ? *46. *Numenius tenuirostris* Vieill.
- *47. *Limosa lapponica* (L.).
- *48. *Erolia temmincki* (Leisl.).
- *49. *Erolia canutus* (L.).
- *50. *Crocethia alba* (Pall.).
- ? *51. *Recurvirostra avosetta* L.
- *52. *Haematopus ostragelus* L.
- *53. *Arenaria interpres* (L.).
- ? *54. *Cursorius cursor* (Lath.).
- ? *55. *Oxyura leucocephala* (Scop.).
- *56. *Nyroca marila* (L.).
- ? *57. *Anas strepera* L.
- *58. *Tadorna tadorna* (L.).
- ? *59. *Anser fabalis* (Lath.).
- *60. *Anser albifrons* (Scop.).
- *61. *Cygnus cygnus* (L.).
- *62. *Pelecanus onocrotalus* L. (einmal 1773).
- *63. *Sula bassana* (L.).
- *64. *Stercorarius skua* (Brünn.).
- *65. *Larus melanocephalus* Temm.
- *66. *Larus genei* Brème.
- ? *67. *Larus audouini* Payr.
- ? *68. *Larus glaucoïdes* Mayer
- ? *69. *Rissa tridactyla* (L.).

- ? *70. *Gelochelidon nilotica* (Gm.).
 ? *71. *Sterna sandvicensis* Lath.
 *72. *Sterna albifrons* Pall.
 ? *73. *Sterna dougallii* Mont.
 ? *74. *Hydroprogne tschegrava* (Lep.).
 *75. *Oceanodroma leucorhoa* (Vieill.).
 *76. *Colymbus stellatus* (Pontopp.).
 *77. *Colymbus arcticus* L.
 *78. *Colymbus immer* Brünn.
 *79. *Podiceps griseigena* (Bodd.).
 *80. *Alca torda* L.
 ? *81. *Uria aulge* (Pont.).

Verzeichnis einiger Arten, die zwar für das Gebiet angegeben wurden, tatsächlich aber nie vorgekommen sind:

Parus ater L.
Sitta europaea L.
Certhia brachydactyla Br.
Calandrella minor (Cab.).
Chersophilus duponti Vieill.
Acanthis linaria cabaret (P. L. S. Müll.).
Passer domesticus italiae Vieill.
Pyrhocorax graculus (L.).
Dryobates minor (L.).
Alectoris graeca (Meyer).
Alectoris barbara (Bonn.).
Balearica paronina (L.).

Die in Vogelf. II, pp. 197 und 200, auf Grund der dort vorangestellten Listen angegebenen Gesamtzahlen sind entsprechend den jetztigen Übersichten zu ändern, dabei ist aber zu berücksichtigen, dass ich diesmal infolge anders formulierter Überschriften einige wenige Arten doppelt einfügen musste.

Zum Schlusse dieser Arbeit gebe ich eine Zusammenstellung (vergl. Vogelf. I und II) aller bisher über das Gebiet veröffentlichten ornithologischen Arbeiten und Notizen:

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¹ Nebst Anhang von A. KOENIG über die Ergebnisse seiner Untersuchungen der vom Autor mitgebrachten Eier.

A RUSH THROUGH TUNISIA, ALGERIA, AND MAROCCO, AND COLLECTING IN THE MAROCCAN ATLAS, IN 1927.

By ERNST HARTERT.

(Plates VIII-IX)

ON March 14, 1927, I left London with Mr. Lancelot Turtle. Though the train was very late at the Gare de Lyon in Paris, we had time to dine in the excellent restaurant at the station in the company of Monsieur Heim de Balsac. Next morning we were most kindly received at Marseille by Dr. Fromols-Rakowski and, according to plan, met the Hon. Masauji Hachisuka. Together we all visited the beautifully situated Museum, where Professor Vayssière most obligingly showed us what we wanted to see and discuss, chiefly the Falcons. We had a wonderfully quiet crossing over to Tunis on the comfortable S.S. *Gouverneur Général Grévy*, but arrived in Tunis in a cold rain. On the "canal" Flamingoes were seen close by, which are as common as they used to be in olden times. Messrs. Lavauden and Blanchet kindly awaited us on the pier, notwithstanding the early hour of our arrival, and helped us through the custom house with our guns and cartridges. With these two ornithologists we visited the neighbourhood of Tunis, especially the ruins of Carthage—i.e. what little is left of them—and saw their collections. While Monsieur Lavauden's birds are nearly all (mounted!) in the Museum of Grenoble, Monsieur Blanchet has in his house in Hammam Lif a beautiful and rich collection, partly mounted, partly in skins, of Tunisian (and Algerian) birds, all most conscientiously labelled and named.

Near Carthage we visited the very interesting "Station océanographique de Salammbó," where we, among others, were shown two live young Mediterranean Shags, *Phalacrocorax aristotelis desmaresti*, which were taken from a nest on the islet of Chickli in the Lake of Tunis as early as March 12, 1927, so that the eggs must have been laid in February. On the Lake of Tunis we saw, among other birds, fine adult *Larus melanocephalus*.

In Tunis Mr. Hachisuka bought an excellent Citroën car, and on the 20th we left Tunis for Sfax. We passed the beautiful ruins of El-Djem, and at Sousse, in the outskirts of the town, we saw a pair of *Streptopelia senegalensis phoenicophila*, which now ranges along the coastal region to Sousse and even to Cape Bon. Grey Shrikes we found strikingly more numerous than in most parts of Algeria, all *Lanius excubitor dodsoni*, but north of Sfax already typical *L. e. elegans* occurs.

In Sfax we were most kindly received by Monsieur Paul Bédé, and looked over his collection of skins, and his zoological garden of birds and animals, chiefly of Africa Minor. With Monsieur Bédé we made an excursion south-westwards of Sfax, far out into the semi-desert. *Lanius excubitor elegans* was common, also Crested Larks, but bird life was not very rich. *Oenanthe moesta* was once met with, one pair, but I tried in vain to find the nest. From Sfax we went northwards again to Sousse, where we met Monsieur Lavauden, and saw the beautiful collection of Messrs. Gouttenoire, very well mounted, all from the neighbourhood. Much of the country is taken up by olive-trees



COMALITIS EREMITA FLYING OVER THEIR NESTS.

in which *Fringilla c. spodiogenys* is common, and several times we saw *Falco biarmicus erlangeri*, a female being shot from the car by Turtle.

The night we spent in a sufficiently comfortable hotel in Kairouan—once a forbidden town for infidels—and next day made a delightful excursion to the Djebel Cherichera, with Monsieur and Madame Blanchet, Lavauden of Tunis, and Alfred Vaucher from Switzerland, my correspondent of many years, whom I had never met in person. The Djebel Cherichera is a very interesting locality and a beautiful mountain stock. Monsieur Blanchet, who knows it well, called our attention to the fact, that there one could on a single day come across forms peculiar (in Tunisia) to the north and to the south of the country. For example,

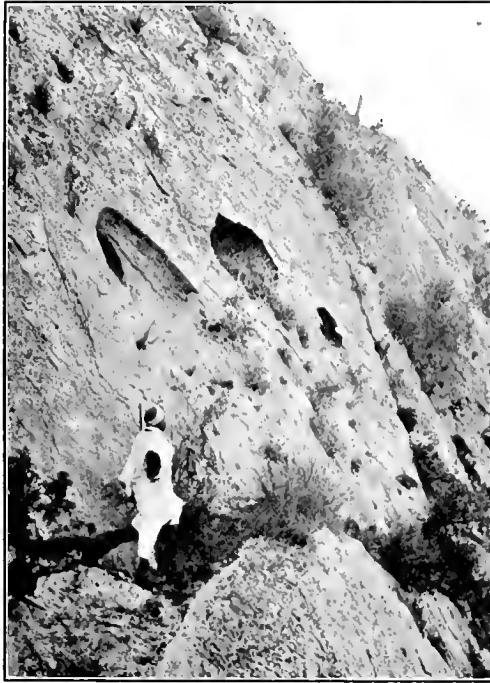


FIG. 1.—NEST OF GOLDEN EAGLE ON MT. CHERICHERA.

one could find the northern *Pycnonotus barbatus barbatus* and the southern *Ammomanes deserti algeriensis*, *Emberiza striolata sahari*, and *Turdoides fulvus fulvus*. Though it was a beautiful day, when we were there, we found the ornithology rather poor, but observed *Aquila chrysaetos homeyeri (occidentalis)*, flying about near an empty nest, *Bubo (bubo) ascalaphus*, Crested Larks (*theklae*), and the *Ammomanes*. The scarcity of birds, our kind guides think, must be due to the unusual dryness of the locality.

From Kairouan we returned, via Sousse, to Tunis; after a couple of days we said au revoir to our friends and motored to the Kroumirie, the forested mountain district, with extensive woods, chiefly of oaks (*Quercus suber* and *Q. mirbeckii*), *Arbutus*, Ash, *Erica arborea*, Ivy, and a rich undergrowth, where the North African forest birds abound. Unfortunately cold and steady rain set

in and we stayed only one day. We found Woodpeckers, Titmice, Wrens, Jays, and the Robins quite common near the little hotel "Les Sources" and the larger one (full as usual) of "Les Chênes." The drive over the Medjerda Mountains down to the frontier station of Ghardimaou and the town of Souk-Ahrâs in East Algeria was very cold. In Souk-Ahrâs the hotel was full, but we found clean bedrooms near by; at the frontier there was of course delay and formalities about the car as well as about the guns and cartridges, but fortunately I had corresponded and arranged about the latter through the kind help of H.M. British Consulate in Alger. The road over the high mountain range between Souk-Ahrâs and Ghardimaou was for a long way above the forest zone, covered

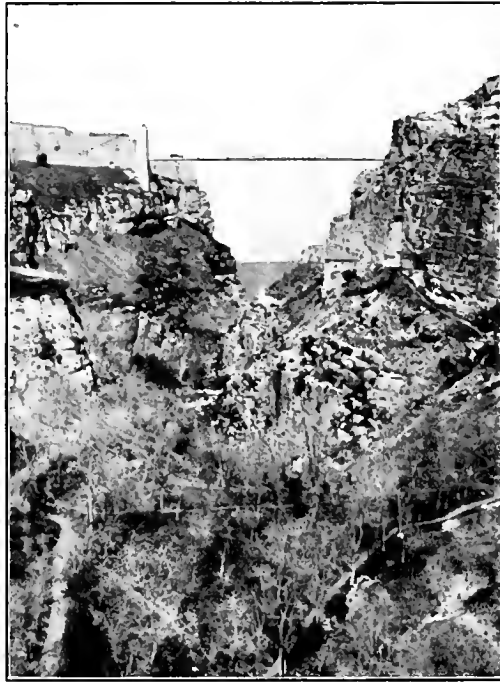


FIG. 2.—GORGE OF RUMMEL WITH SUSPENSION BRIDGE.

with halfa, and snow patches were still seen on a slope close to the road, which was none of the best, though the scenery is grand. Of birds only Crested Larks (*theklae*), Ravens, and *Diplootocus moussieri* were observed.

From Souk-Ahrâs we went to Constantine, where we again admired the stupendous gorge of the Rummel, in which Jaekdaws, Kestrels, Storks, and Egyptian Vultures were observed.

From Constantine we had a delightful day going to El-Kantara, seeing on the way a big flock of *Grus grus* south of Constantine, also Buzzards (*Buteo rufinus cirtensis*), Black Kites, and other common birds. In picturesque El-Kantara we spent two days, but we did not see any unusual birds.

On April 3 we went to Biskra, seeing a fine adult Lämmergeyer (*Gypaëtos*) on the Col de Sfa, from where one descends down into the Biskra plain. In

Biskra we stopped a few days, going over the ground so familiar to me. It was drier than I had seen it before, and there seemed to be less birds, the result of several dry years. In the Mouleïna, near the river, a few *Merops persicus chryso-cercus* were seen, *Oenanthe moesta* was in its accustomed haunts, also *Aluemon alaudipes alaudipes* and others of our old friends. We did not see *Streptopelia senegalensis phoenicophila*, but did not go about very much in the oasis, and this beautiful Dove has become scarcer than it used to be, though it still inhabits the Biskra palm groves. In Biskra we found comfortable quarters again in the Hôtel du Sahara.

On April 6 we travelled over the mountains to Bou Saada, the finest day's journey so far, though actually hot. We passed the big oasis of Zaatcha and Tolga, coming across *Turdoides (Crateropus, Argya) fulvus fulvus* among the same *Zizyphus*-bushes before Zaatcha, where Lord Rothschild and I saw it for



FIG. 3.—♂ HOUBARA BUSTARD SHOT ON WAY TO BOU-SAADA.

the first time in 1909. Not very far from Zaatcha the road—which is rather bad in places—ascends the mountains and affords beautiful views. From the summit of the pass towards Bou Saada one passes over a treeless plateau on which Bustards (*Chlamydotis undulata undulata*) and Doreas Gazelles are found. It would have been interesting to explore this plateau, but our time was too short. As it was, we reached Bou Saada in the dark, but found quite comfortable rooms in one of the less pretentious hotels, avoiding as usual the large and splendid but expensive hotel Transatlantique. Bou Saada is picturesquely situated on terraces above the Oued Bou Saada, which runs into the Chott-el-Hodna, with fine palm gardens, and not far from an extended group of high sand dunes which, so far away from the real Sahara, have, of course, some of the desert plants and creatures, but not all. In fact, in the one day we were able to spend at Bou Saada we saw none of the real desert birds peculiar to the Saharan dunes; we shot a pale form of the *theklae* group of Crested Larks (see list). In the river-bed were numerous House Martins, but probably still on migration.

On April 8 we left Bou Saada with regrets. The good road passes over the most typical Algerian Haut Plateau, with much *Artemisia herba-alba*. Birds were fairly numerous. Except Crested Larks—no *cristata* observed—we saw numerous *Melanocorypha calandra calandra*, *Ammomanes deserti algeriensis*, I heard and Turtle shot *Chersophilus duponti duponti*, *Diplootocus moussieri* were not rare in places, *Oenanthe hispanica hispanica* were seen, a flock of Black-bellied Sandgrouse (*Pterocles orientalis* L.), and the usual Waders on a little swamp, including *Himantopus*. Somewhere along this road Monsieur d'Abadie (whom we had met already in Tunisia, and whom we saw again en passant at luncheon in Djelfa) had shot *Eremophila alpestris bilopha*, which we did not observe.

In Djelfa we stopped for luncheon in the old hotel, and then proceeded to Berrouaghia, where we arrived rather late in the dark. We were warned that Boghari was rather full of bugs, and so did not stop there as we had intended, and also because we did not care to arrive too late at Alger the next day, as the continually winding road up to the nearly 1,000 m. takes a rather long time and is tiring for the driver. We passed the cliffs south of Boghari, where in Loche's time and recently *Comatibis eremita* nested, but apparently the little colony was not frequented in 1927. We could not devote much time to the exploration of these rocks, but Mr. Jourdain visited them also a bit later and found not a single bird there, though he explored them well.

In Alger we visited our old friend Dr. Nissen, and witnessed the tail-end of the violent gale which did so much damage along the western part of the north coast of Africa Minor, especially at Melilla, where quite a number of ships were lost. Here Mr. Turtle left us, to our regret, as he had to go back to Cambridge.

April 12 Hachisuka and I left Alger by the western road, which runs close to the sea-shore as far as Ténès and offers many beautiful views. The gale had abated and it was a magnificent day. The country contains vineyards, fields and woods of Aleppo pines, which were full of *Fringilla coelebs africana* Lev., but no specially remarkable birds were observed.

In Orléansville House Martins nested in numbers, all on one building opposite the hotel in which we passed the night. They were already building their nests, of which I counted between thirty and forty. Sparrows took possession of barely finished nests. Black Swifts only were seen, as before in Alger—where in 1908 and 1909 Pallid Swifts nested also, though in smaller numbers—and later on in Mascara.

April 14 we had an easy run over good roads to Mascara, over Haut Plateau country, though not steppe, but fertile, mostly cultivated land with many vineyards and olive gardens, especially in the plain of Egris, where the beautiful Mascara wines come from, which are perhaps the best of Algeria. As no train was running next day we had to stay the whole of it in Mascara, which, notwithstanding a comfortable hotel, was somewhat wasted, as the agricultural plain did not contain many desirable birds. Chaffinches, Goldfinches, Greenfinches, and *Passer domesticus* (*P. hispaniolensis* was not observed) were common, Stonechats and Red-headed Shrikes were seen, *Oenanthe hispanica* rather frequent in the vineyards (? nesting there), and in a small gorge *Athene noctua glaux* was shot by Hachisuka.

We went by the slow but fairly comfortable train down to Colomb Béchar, as we were strongly advised not to risk the car on the bad and sandy roads.

Leaving Aïn-Sefra the railway goes round the Djebel Mekter, in a semi-circle, through fine scenery, and then enters a seemingly endless plain. The vegetation gets poorer and poorer, the aspect more and more desert-like. Near Beni-Ounif, the Algerian settlement south of Figuig in Marocco, the peculiar little hillocks of *Anabasis aretioides* become visible, and farther south are sometimes almost the only plants seen from the train for long distances; they vary in size from small bolsters of the size of a fist to others of three and even sometimes four feet across. Even small plants are almost impossible to pull up, as the roots extend very deep. In other places *Artemisia herba-alba* abounds, but the monotony is often relieved by river-valleys, in which grow the fresh-looking green "Harmal," *Peganum harmala* L., *Zizyphus* bushes, and now and then an



FIG. 4.—LARGE PLANT OF *ANABASIS ARETIOIDES*, SMALLER ONES IN THE DISTANCE.

isolated Terebinth tree, or an oasis with date-palms. On the whole the farther south the more bare and dry, desert-like the country became.

Colomb Béchar, in the south-westernmost corner of Algeria, but more Moroccan than Algerian, is quite a desert town. The surroundings are bare and desert-like, the native villages, mostly in date-palm groves along the river-bed, are picturesque, and fine sand dunes extend some distance to the south. The surrounding mountains are bare and rocky. The resident bird population is not rich. In the town were a few, in the palm groves plenty, of House Sparrows, but no sign of any *hispaniolensis*, a few House Martins were seen, probably nesting, but no nests found, Sand Martins in the river-bed—possibly nesting somewhere on the river bank, but more likely still on migration. The testes were still small. *Corvus corax* once seen, probably *ruficollis*. *Upupa epops* several. *Emberiza striolata sahari* in the town. *Carduelis carduelis africana* and *Erythropsiza githaginea* (once) seen in gardens and on the river. Hachisuka shot one Crested Lark, *Galerida cristata macrorhyncha*, but no others were observed. *Alaemon alaudipes* was once seen south of the town, but not obtained. *Oenanthe deserti* was not rare in the desert, *Oenanthe leucopyga* inhabits the bare

rocks. *Falco biarmicus erlangeri*, *Falco tinnunculus*, *Gyps fulvus*, and *Neophron percnopterus* near the town. *Ammomanes phoenicurus arenicolor* were seen commonly, but still in flocks, testes and ovaries still small, in plain and on sand-covered rocks. *Ammomanes deserti payni*, judging from size of sexual organs, already nesting, or short time before laying. Hachisuka saw *Cursorius*, in the river-bed a pair of Storks. Swallows were numerous.

In spite of the late date (April 17 and 18) migrants were still numerous, flocks of 20-30 of *Calandrella brachydactyla*, quite a number of *Oenanthe oenanthe oenanthe*, flocks of *Motacilla flava flava* on and among the sheep in the river-bed, several *Motacilla alba alba*, *Phylloscopus trochilus* in the gardens of the oasis, *Phoenicurus phoenicurus phoenicurus* common in the gardens. Sand Martins in the river-bed. Hachisuka saw two species of waders, which, however, were not identified.

The stay in Colomb Béchar was not over pleasant, the hotel being not very good, the rooms smelly of leaking acetylene-gas pipes (fortunately the weather was hot and one could open windows and doors), the service—during the Easter holidays—poor. Nevertheless, we regretted that we could not stay longer, as longer excursions, with the help of cars or horses even, might have been very interesting.

On April 19 we took the train back northwards as far as Béni-Ounif. This we found a pleasant place, there being the choice of the excellent but expensive Hôtel Transatlantique and two other, less pretentious, but comfortable and quiet hotels. The ornith was, however, hardly any less poor than at Colomb Béchar. On the way there, north of Colomb Béchar, I observed from the train flocks of *Merops persicus chrysocercus*, *Emberiza striolata sahari*, and twice Houbara Bustards (*Chlamydotis undulata undulata*). French officers in the train told us that the "Poule de Carthage," *Otis tetrax tetrax* L., was not at all rare east of Colomb Béchar, along the Oued Sousfana and in the steppes thereabouts. As they gave a recognisable description and said they knew the Houbara as well, there must be some truth in this, but it seems strange that this Bustard should occur so far south, though it is well known in West Marocco.

At Béni-Ounif House Sparrows, Swallows, and a few Martins were seen in the place, *Corvus corax* (apparently *ruficollis*) in the distance, *Neophron percnopterus*, *Ammomanes deserti payni*, *Ammomanes phoen. arenicolor*, where there were *Zizyphus* a few Grey Shrikes (*Lanius e. elegans*), a flock of *Cursorius cursor cursor*. There were still a good many migrants: *Phylloscopi* (mostly *trochilus*), ♂♀ *Muscicapa luctuosa luctuosa*, *Calandrella brachydactyla*, *Oenanthe oenanthe oenanthe*, *Phoenicurus phoenicurus phoenicurus*.

A delightful excursion is to the Berber town of Figuig in Marocco. This is a large oasis of over 15,000 inhabitants, and beautifully situated on a steep hill, the whole place surrounded by crenellated walls and full of fine gardens with tall date-palms and other fruit-trees. The houses are often built in two stories, as I have only seen them in the villages of the Great Atlas in Marocco, but not usually in the more northern parts of Marocco. In the palm gardens we looked in vain for *Streptopelia senegalensis phoenicophila*, the palm Dove so well known from the northern Algerian Sahara, while Turtle Doves were common. The people in the oasis were very friendly though not at all cheeky. In one of the gardens we saw a Great Tit, but could not shoot it. On a building in the outskirts I saw an *Oenanthe leucura syenitica* at close quarters and we

observed *Merops apiaster* and several *Merops persicus chrysocercus*, of which I had never seen a specimen in West Algeria or from Marocco.

Passer domesticus tingitanus and *Emberiza striolata sahari* were common.

Near Béni-Ounif migrants were still observed: *Phoenicurus phoenicurus phoenicurus*, *Phylloscopus*, Pied Flycatchers, as late as April 22.

From Beni-Ounif we continued our journey northwards to Aïn-Sefra. We found hotel accommodation worse than in 1913. Birds were less numerous, probably on account of the drought. Two days diligent search in the well-known localities did not reveal *Rhamphocorys clot-bey*, nor did the Rev. F. C. R. Jourdain

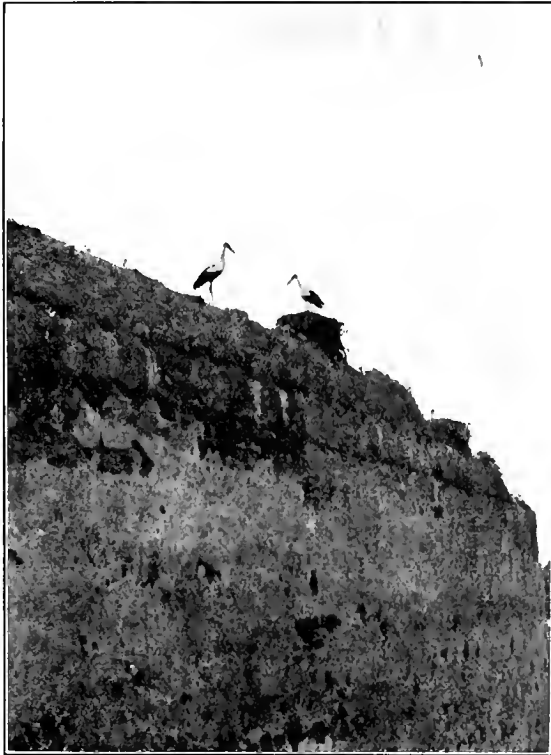


FIG. 5.—STORKS ON OLD WALL OF EL-HAJEB.

find it there! *Oenanthe deserti* and *Erythrospiza githaginea* were present, but less numerous, both species of *Ammomanes*, *Scotocerca*, *Oenanthe moesta* were found. Of the latter Hachisuka shot a male, while I have neither note nor recollection of having seen it in 1913 at Aïn-Sefra. Also Ravens, obviously *C. c. tingitanus*, were seen several times, though in 1913 we never observed a single one.

From Aïn-Sefra we returned to Mascara, thence we motored to Sidi-bel-Abbès, where we passed a comfortable night. Sidi-bel-Abbès, known as the headquarters of a regiment of the Foreign Legion, is a town of about 38,000 inhabitants, and is situated in one of the most fertile plains of Algeria. For an

ornithologist the surroundings are even less interesting than those of Mascara, as they are mostly fields of wheat, also fruit-gardens and vineyards. From this town we motored to Oudjda crossing the Maroccan frontier soon after Lalla Marnia, where there was the usual delay at the customs house, though we were very considerably treated. At Tlemcen we enjoyed the beautiful scenery and had luncheon in the excellently situated Transatlantique Hotel outside the town. West of Oudjda the country became drier—we entered what I called (cf. *Nov. Zool.* xxxiv, 1927, p. 46) the "Desert Wedge," i.e. hammada-like country with very few trees. The end of this "wedge" reaches right up to north of Guercif, and a little west of Guercif occurs *Oenanthe moesta moesta*, of which Hachisuka shot a young of the year. West of Oujda I shot two *Galerida cristata* of very different aspect, one being much darker than the other (see list).



FIG. 6.—OLD WALL OF EL-HAJEB WITH HOLES IN WHICH NEST *FALCO NAUMANNI* AND ROLLERS.

The Angad plain I found more cultivated, with more corn growing, than in 1913, when we visited the eastern parts of it.

After passing the Moulouya at Guersif and two little affluents to the latter, a change was very obvious, as we entered more fertile country again, when we saw the first river flowing westwards, a tributary of the Oued Sebou, which enters the Atlantic Ocean near Mehedia—we had entered the West Maroccan zone! After a number of mishaps to the car we reached the wonderful city of Fez (Fès) after eight o'clock in the evening and found comfortable quarters in the Hôtel Transatlantique. It is not here the place to describe this most interesting and peculiar Maroccan town of far over 100,000 inhabitants. Of birds we observed great numbers of Alpine Swifts—of the dark form (see list), only Black Common Swifts, and a few Lesser Kestrels. On April 29 we went to Meknès, visited General Freydenberg, and proceeded to El-Hajeb, on the north-western slopes of the Middle Atlas. Besides the small colony of *Comatibis eremita*, dis-

covered by Bédé near this picturesque little place, there is a bigger one near by. We could not reach the nests, nor could we get any boy to climb up, because everybody attended the great "fantasia," in the plains; great numbers of natives assembled there, thousands of shots were fired for several days, singing and furious riding, feasting, etc., so no native help could be obtained. On the old walls of El-Hajeb Storks nested in numbers, and in the holes numerous Lesser Kestrels and Rollers.

From El-Hajeb we returned after a couple of days to Meknès and thence to Rabat, where we saw our old friends again, and fetched Frederick Young from Casablanca on May 4.

On May 5 we visited again the swamp at the mouth of the Bou Reg-reg, where *Circus pygargus* nest, and again I found *Asio capensis tingitanus* and



FIG. 7.—SIGNPOST ON ROADS IN WESTERN FRENCH MAROCCO, VISIBLE FROM FAR.

Cisticola and saw half a dozen *Numenius arquatus arquatus*. On May 6 we travelled down to Marrakesh. In the Rehamna, not very far north of Marrakesh, we saw some *Cursorius*, but more were observed in June, when returning for the second time from Marrakesh. The Short-toed Larks in the Rehamna plain, which we formerly thought were *Calandrella rufescens minor*, seemed all to be *C. brachydactyla hermonensis*, at least those we shot belonged to the latter. We had some delay at Casablanca, an uninteresting city for a naturalist, where, however, the excellent restaurant called "Le Roi des Bières" is a redeeming factor. The main roads (not of course the side-tracks or "pistes") are very good in Morocco, even better than most of them in Algeria, and they are marked with very practical and conspicuous "signposts."

At Marrakesh the weather was glorious and not yet too hot. We spent three days there and collected in the immediate neighbourhood and on the Tensift River. The birds were of course the same as in 1925 (see *Mém. Soc. Sc. Nat. Maroc*, No. XVI, p. 4, 1927), but quite a number of *Muscicapa striata*

and *Sylvia borin* were apparently still on migration. On the Tensift River several Kingfishers were seen. Near Marrakesh the rare *Polyommatus phobus*, of which we saw only a few in 1925, was common in certain places, and for the first time I observed and caught *Euchloë charlonia* in this part of Morocco.

Via Rabat we went to Ouldjet-es-Soltane on the Upper Oued Beth, where we were kindly put up by the garde forestier, Monsieur Azam. I had been told that Guinea-fowls were common, but they were far away, and in spite of several long rides on excellent horses we did not see a single one, though I heard one from a distance, and Berbers brought in two damaged specimens, and I got a beautiful clutch of eggs. The ornithology of this part is rather rich. The first evening a heavy thunderstorm raged, so that for several days we could not cross the river. *Circus* and *Neophron* were seen every day. *Alectoris barbara* and Turtle-doves were common, Hachisuka shot in the twilight both *Caprimulgus ruficollis ruficollis* and *europaeus meridionalis*. Cuckoos were present, and lots of common birds. There were not so many Butterflies as I would have expected, but both species of *Gonepteryx* were seen.

There was only observed one species of *Parus*, i.e. *major*; the woods consisted mostly of *Callitris articulata* (Vahl.) Murb. (so named by Professor Maire),¹ and there were neither Cedars nor Oaks. The valley where Ouldjet-es-Soltane lies is very fertile, the corn was just being cut. A nasty kind of burr penetrated trousers and irritated legs. Of remarkable plants *Ephedra altissima* Desf. and *Asparagus altissimus* may be mentioned.

The migratory European birds had passed through, but *Oenanthe oenanthe oenanthe* was still obtained. One day we had dinner, lasting about two hours and a half, in a Berber tent, consisting of a number of dishes of mutton, the usual cuscus, and a kind of pancake, all very fat, and we had to drink seven glasses of very sweet mint-tea and dirty river water.

On May 18 we returned to Rabat, having luncheon with our friends the Poussiers in Khemisset, and enjoying their beautifully laid-out gardens with a wealth of flowers, vegetables, and fruit.

While the main road from Meknès to Rabat, and most main roads in Morocco are excellent, the "piste" to Ouldjet-es-Soltane was bad and often dangerous, but our friend Hachisuka managed it with the greatest skill and sang froid.

Mr. Hachisuka was obliged to return to Europe and left us, via Tanger.

In Rabat were this year several pairs of *Hirundo daurica rufula*, but the old nest I saw in 1925 was forsaken, though much enlarged again, having been used for three years.

May 23 Young and I went up again to El-Hajeb. Between Khemisset and the Oued Beth both of us clearly saw (not very far from the Oued Beth Valley) a *Merops persicus chrysocercus* sitting on a telegraph wire.

On the wonderful cliffs near El-Hajeb, where the *Comatibis* nest, Blue Rock Thrushes were not rare, there were also several pairs of *Oenanthe leucura syenitica*, and on the plains *theklae* Crested Larks. On May 23 I saw an *Aquila chrysaetos*, but on May 24 a pair of Eagles were observed, which, judging from the rich, almost orange-coloured underside, seemed to be *Aquila heliaca adalberti*! At least, I do not know what else they were; they could certainly not have been *Aquila rapax*! Unfortunately they were flying far and high, and on all the

¹ The plants of which I brought home samples were kindly named by Professor Maire in Alger, to whom my sincerest thanks are due.

subsequent days I did not see them again. On the 28th two *Anthropoides virgo* flew past El-Hajeb, calling loudly, in the direction of Meknès. I also saw a skin of *A. virgo* shot near Aïn-Leuh by the Commandant, Monsieur Ayard.

The weather was fine; the abundance of water caused this part of the country to look much fresher than the plains, and it was less hot than, for example, at Meknès; the nights, in fact, were sometimes quite cool, and there was heavy dew in the mornings. Many flowers adorned the rocks, among which *Bellardia trixago* var. *flaviflora* (Rouy) Maire, *Spergularia longipes* Lange and others seemed to me peculiar.

On the 30th we returned once more to Rabat. Passing through the forest of Mamora, we were pleased to see it nearly all green, only here and there, and



FIG. 8.—ROCKS WHERE *COMATIBIS* NEST FROM DISTANCE.

in one limited place many oak-trees being defoliated by the caterpillars of *Porthetria dispar*, while in 1924, at the same time of the year, nearly every oak-tree I saw was bare.

On June 2 we rode down again to Marrakesh in a C.T.M. car. We left Rabat at 10, arrived Casablanca at 12, left Casablanca at 1.30, and arrived in Marrakesh at 7.15 in the evening. North of Marrakesh we saw a number of *Cursorius*. I wanted to visit Telouet, the Pasha of the Glaoui's place, but did not get permission to do so, because smallpox and typhoid had broken out there. I went, however, into the Great Atlas, south-east of Marrakesh, up the valley of the Oued Rdat. Passing the (then) highest military poste of Areg-n-Anon (or simply called Areg), we met Lieutenant Olive, who most kindly assisted us by sending a bed, blankets, and sheets, so that we could stay in a large tent with a wooden floor by the river under the village of Taddert, 1,650 m. high. We got good food in the "cantine" at Taddert, only about ten minutes away, though we had to cross the river on not too convenient stepping-stones, and to climb up or slide down a steep stony slope with loose slabs of stone.

Monsieur Dereims, the cantinier, cooked as well for us as it could be possible in this isolated spot, but unfortunately our tent was alive with many hundreds of fleas, not to mention an occasional, nasty, but quite rare flat and smelly insect, to relieve the monotony of the countless "fathers of the jump," which seem to swarm all over the Great Atlas in the summer months. This part of the Atlas is not wooded, only in one spot farther down we passed a thin wood of Oaks. The road in the valley of the Rdat runs with the river and the slopes on both sides are usually steep and bare, only in some side valleys were little tributaries come down, but are mostly dry in summer, one sees some junipers. The wild vegetation was fairly rich, high bushes of *Retama dasycarpa* Coss. em. Maire being very numerous, also *Adenocarpus anagyriifolius* var. *leiocarpus* R. Lit. et



FIG. 9.—ON SIDE OF ROAD IN THE RDAT VALLEY, TO SHOW STEEP SIDES.

Maire, which from a distance reminds one of the *Cytisus battandieri* of the Middle Atlas. The villages have many old Walnut trees of often enormous size and stems sometimes several metres thick. Many are damaged by wind or lightning and have grown in strange shapes. Unfortunately at Taddert there would be no Walnut this year, as a late frost had destroyed all young fruit, but at Areg, 220 m. deeper down, they were not touched. The scenery is beautiful, mountains towering high on either side, and the weather was perfect. There were, however, not very many birds, and no rare species. Though the river seemed to be ideal for them, there are no *Cinclus* in the valley, but one saw now and then a Grey Wagtail or two (*Motacilla cinerea (boarula)*). There were no Sparrows and no Sahara- (or House-) Buntings (*Emberiza striolata sahari*) in the villages. Among the Walnut trees lived a few *Fringilla coelebs africana*, Goldfinches, very few *Parus major lynesi*, some *Muscicapa striata*, and one pair of *Serinus*, a few *Coracias garrulus*. Once in the evening a *Caprimulgus europaeus meridionalis* flew along the village road, and sometimes Kestrels were seen. On the mountains one saw

Buteo rufinus cirtensis, *Milvus migrans*, *Neophron* and Ravens, by the river a few Nightingales and Blackbirds. On the rocks above the road nested *Diplootocus moussieri* and *Oenanthe leucura*, while a dog that used to accompany us put up several times some *Alectoris barbara barbara*.

On June 10 I accompanied Lieutenant Olive on a ride to the Tizi N' Tichka, 2,425 m. high, often along steep mountain-sides with wonderful scenery. We passed a very high waterfall with very little water, which earlier in the year must be a magnificent sight. The Tizi N' Tichka is a pass over a pleasant grass-covered plateau with a splendid view all round, but specially of the 3,575 m. high Djebel Aouldjedit or Bou Ouriou, still with extensive patches of snow. The Tizi N' Tichka is on the watershed between the streams flowing



FIG. 10.—TIZI N'TICHKA PASS AND DJEBEL BOU OURIOU'L.

northwards towards the Rdat, and those running southwards to the upper reaches of the almost unknown and legendary Oued Dra! The Tizi is only 12 km. in a straight line, and 26 km. by the road, from Telouet, the mediaeval castle of the powerful Pasha of the Glaoui. Over the Tizi I saw a large flock of Red-billed C'ough, *Pyrhocorax pyrrhocorax*, but no other remarkable birds. The vegetation differed a great deal from that of Taddert, which is about 770 m. lower. Instead of the *Retama dasycarpa* Coss. em. Maire, common near Taddert, I found golden yellow bushes of *Genista florida* var. *maroccana* Ball, and, to my great surprise, *Artemisia herba-alba*, a plant of the Haut Plateaux of Algeria, but not of the mountains above 2,000 m., I thought. Other plants of the Tizi N' Tichka were *Glaucium corniculatum* Curt., *Campanula filicaulis* Dur. = *C. maroccana* Ball, *Papaver atlanticum* (Ball), *Orchis elata* Poiret, *Helianthemum glaucum* Pers., *Dianthus caryophyllus virgineus* R. et F. var. *godronianus* Briq., *Armeria allioides* Boiss., the very pretty *Mentha gattefossei* Maire, *Pterocephalus depressus* Coss., *Thymus saturcioides* var. *pseudo-mastictina* Ball, but my time—

a few hours!—was too short to make any adequate collection! It is strange that the number of Lepidoptera was not greater! There were some species in fair numbers in the valley of the Rdat, but nothing very wonderful. On the Tizi N' Tichka it was probably too early; I caught, of course, what I could, and obtained one single *Zygaena*, while there were none found at Taddert, notwithstanding most diligent search. I saw also a form of *Satyrus abdelkader*—a single individual—but could not catch it as it flew down an awe-inspiring steep cliff of several hundred metres.

Also near Taddert, \pm 1,700 m., the Butterflies were not remarkable for the number of species, and apparently some of the rarest forms were not yet out—in fact Lieut. Olive wrote me that in August they were much more numerous. On the *Retama dasycarpa* the caterpillars of *Apopetes spectrum* Esp. were exceedingly common, in all sizes, also a large species of a Cicada, very very numerous, and when one touched a bush they flew off with a loud rattling noise. Several species of large *Buprestidae* occurred, one of them a rare one, restricted, my friend Théry tells me, to the Great Atlas.

On June 12 we returned to Marrakesh and spent the 13th catching butterflies. *Palyommatus phoebus* was still in existence, but specimens were getting worn. Though I measured at 6 p.m. only 30° C. it was very close, the sun not appearing before 10 a.m. The vegetation in the open was fast drying up, but in the new gardens many flowers were in bloom, among which I particularly admired the introduced foreign *Jacaranda mimosifolia* and *Parkinsonia aculeata*. On June 14 motored again into the Great Atlas, through a fine river-valley to Tagadirt-N' Bour. This valley too had very steep sides, hardly any butterflies were seen, and bird-life consisted only of the forms known to me. Over the village (kasbah) we saw a *Gypaëtus*, apparently two years old, and near by some Blue Rock Thrushes. The room we were told we could get at the Sheik's place was occupied by a French painter, and no other decent place was available. While we had tea with the son of the Sheik, in a hole not fit for human beings, fleas ran up our legs and the smell of goats and worse things was abominable. So we returned to the region of Asni, almost opposite, on the other side of the river, to Asselda, where we stayed in 1925, and found rooms in a new, very modest, but decent hotel, the "Asni Hotel."

The Berbers were just cutting their corn, and the population was mostly out in the fields. Great flocks of Wood Pigeons, Rock Doves, and Stock Doves fell into the fields to eat the corn—as there were no woods with suitable nesting-places, the Stock Doves must have come from far away. Also *Bubulcus ibis* came to the river, a big flock, but they are said to occur there only rarely. Young of the year of *Muscicapa striata*, *Motacilla alba subpersonata*, *Oenanthe hispanica*, *Diplootocus moussieri*, Stonechats, and other common birds were observed, but nothing very remarkable, nor anything wonderful in butterflies, while no moths came to the light.

June 17 returned to Marrakesh, where we found it rather hot. I don't think the thermometer went above 33° C., but we missed the fresh mountain air of the Atlas. The drive to the coast, to Casablanca and Rabat was also hot, and so was Rabat.

From Rabat we returned to Gibraltar, and from there to England. Thus ended another most interesting and pleasant tour in Africa Minor, the land which I love.

NOTES ON CERTAIN BIRDS COLLECTED AND OBSERVED.

Corvus corax tingitanus Irby.

At Aïn-Sefra in West Algeria Ravens were not rare, while in 1913 we never saw one there.

Ravens observed at Colomb Béchar and Beni Ounif were probably *C. c. ruficollis*.

Pica pica mauritanica Mallh.

Not rare on the Upper Oued Beth, near Ouldjet-es-Soltane.

Pyrrhcorax pyrrhcorax pontifex Stres. (?).

It is strange that the Chough has not been recorded from Tunisia since Salwin's visit there, but Monsieur Blanchet has recently had information about the probable occurrence in North-West Tunisia, near the Algerian frontier.

In the Great Atlas I have only once seen a flock, and that was on June 10, at 2,400 m. on the Tizi-N-Tichka, when a large flock was seen high overhead.

The subspecies of the Chough have not been worked out satisfactorily. In *Vög. pal. Fauna*, i, p. 36, 1903, I had insufficient material, and refrained from seriously discussing them. Everybody, myself included, has so far shirked the study of their forms, but *P. p. himalayanus* and *P. p. brachyppus* have recently been recognised as distinct (Kleinschmidt, Meinertzhagen, La Touche, Stresemann). In fact, the latter two subspecies are the most distinct ones, the others being more difficult to distinguish. Recently Stresemann separated two more subspecies, *P. p. pontifex* from North Persia, and *P. p. centralis* from the Tian-Shan Mountains.

In naming *P. p. pontifex* he has not helped his brother ornithologists much, as he does not say how far he thinks that this subspecies extends! It seems to me that it is the widest spread and thus "commonest" form of the Chough.

Stresemann's *P. p. centralis* is a very well-marked subspecies, but it is rather misleading to compare it with the large *himalayanus*, as one of its most striking peculiarities are the small feet; therefore it should have been compared with *brachyppus*, which, however, has a thicker bill and less pointed wing. As far as I can at present construct the subspecies of the Chough—though I do not say that this review is final!—I think the following forms can be distinguished:

Pyrrhcorax pyrrhcorax pyrrhcorax (L.).

Described by Linnaeus as coming from England and Egypt; the latter locality being doubtful, I have in 1903 restricted the terra typica to England.

This is the smallest form, bill 50-58, wing 253-260 and 276 mm. maximum.

I know this form only from Great Britain (where it has become rare and is now restricted to a few localities in the south and west) and Ireland, where it is still fairly common.

Pyrrhcorax pyrrhcorax erythrorhamphus (Vieill.).

This name refers to the Alpine form and must be accepted, if this form is separated from the British one. Unfortunately this species is now so very

rare in the Alps (apparently it was formerly more numerous), that specimens are rare in collections; I could therefore measure only 5 good specimens. Their bills measure 51-57, wings 278, 287, 288, 291 mm., a maximum which is not reached in the British Isles. I believe the Spanish form is the same as the Alpine form, but about this I am doubtful. Certainly Pyrenean specimens agree.

***Pyrrhocorax pyrrhocorax pontifex* Stres.**

Pyrrhocorax pyrrhocorax pontifex Stresemann, *Journ. f. Orn.* 1928, p. 343 (Elburs Mountains, North Persia).

It seems to me impossible that this is an isolated Elburs form. In fact, it seems to be widely spread, possibly from Palma (Canary Islands) through Marocco, Algeria, Palestine, Crete, Asia Minor, Palestine to Persia. I measured as follows:

- Palma 290, 291, 295 mm. (Eight.)
- Marocco 280-313 mm., bill 54-69. (Series.)
- Algeria 288-307 mm., bill 59-64, 66. (Series.)
- Crete ♂ 311, ♀ 293 mm.
- Asia Minor (Taurus) 304, 323 mm.
- Luristan ♂ 305, 308 mm.
- Persia (East Persia) ♀ 290, 294, ♂ 310, 320 mm.
- Persia (Shiraz, East Persia) 288, 314, 316 mm.
- Persia (Elburs) 305, 317; 293, 305, 318, 320, 327 mm.
- Palestine 290-313, 326 mm., bill 52-59.
- Simien, Abyssinia, 308 mm.

It will be seen that the specimens from nearly all countries mentioned come very close to the Elburs ones, of which only one surpasses them. But we must remember that, except from the British Isles (Ireland), Algeria and Marocco, anything like a sufficient series is available from nowhere, and that therefore we do not know the maxima, which by accident might have been found among the few from the Elburs, and possibly the large bird from there was an exceptional giant.

The small size of the Palma birds might, if confirmed by a larger series, force us to recognise the Palma form as a special subspecies, but I had formerly a very large measure of a Palma specimen—unfortunately I have no note how I got that measure, but I believe from Sharpe, in litt.

Abyssinian specimens I have not examined, except the one in the British Museum, that came from Petherick; that skin passed through Gould's hands, and it surely never came, as Sharpe said (p. 148, *Cat. B. Brit. Mus.* iii), from the Kitch country "west of the Nile." "Lemien" means doubtless Semien, where alone in East Africa the species is found, and it was possibly given to Petherick by Heuglin, who collected specimens in Semien.

All these birds have more or less greenish wing-coverts, but a purplish tinge is sometimes discernible in Persian examples.

***Pyrrhocorax pyrrhocorax himalayanus* (Gould).**

This race has a somewhat bluish or purplish gloss on the wings, more distinct than in Persian ones, and is large, wings 305-327 mm., sometimes smaller, according to Kleinschmidt down to 278 mm., and has generally a large bill.

On an average it surpasses toponymical *pontifex* in size of wings and bill, but some specimens are not distinguishable, except by the *generally* more bluish wing-coverts. Bill 59–65 mm.

Himalaya, at great elevations, eastwards to Yunnan and Szechuan.

***Pyrrhonorax pyrrhonorax centralis* Stres.**

Pyrrhonorax pyrrhonorax centralis Stresemann, *Journ. f. Orn.* 1928, p. 344 (Tian-shan).

These birds are on an average smaller than most *pontifex* and *himalayanus*, but many do not differ in length of wing. They have the greenish outer aspect of the wings, but their feet are as small as those of *brachypus*, from which, however, they differ by the more pointed wing, the distances between the tips of the fifth and sixth primaries being greater! They are apparently common in parts of Turkestan, near Djarkent, mountains near Lake Issik Kul, Karakol, and doubtless many other places. Wings of the specimens in Tring 278–313 (once), according to Stresemann 276 (♀) to 319 (♂, once) mm.

***Pyrrhonorax pyrrhonorax brachypus* (Swinh.).**

North-East Chinese Choughs are very much like *P. p. centralis*, but the tip of the wing is shorter (distance between tips of fifth and sixth primaries smaller), and the bill is generally thicker. Wings 273–305 (twice) mm. Feet smaller than all except *centralis*.

North-East China, apparently north to Transbaikalia, Shansi, Shensi.

Swinhoe gave this form 1871 the name var. *brachypus*. Sharpe (*Cat. B.* iii) quotes the name "var. *orientalis*," as of Dybowski, *Journ. f. Orn.* 1868, p. 332, but this is incorrect; Dybowski there described the small feet, but does not give a name! The name "var. *orientalis*" is given by Taczanowski, *Journ. f. Orn.* 1872, p. 454 (not by Dybowski, p. 445 as Taczanowski quoted in his posthumous great work, p. 539), but without any kind of characterisation or reference, and is therefore a nomen nudum.

It inhabits the mountains of Chihli, and Weigold brought one home that was collected in Shansi, where Swinhoe had formerly also found it.

I have not examined Mongolian specimens.

***Sturnus vulgaris vulgaris* L.**

Still seen in small flocks on the Algerian Plateau between Constantine and les Lacs on April 1.

***Bucanetes githaginea zedlitzii* Neum.**

As already pointed out by Lavauden (*Voy. Babault, Ois.* p. 50), this species ranges in Tunisia north to the Djebel Cherichera, north-west of Kairouan. We did not find it during the hours we were there, probably because of the drought at the time, but both Lavauden and Blanchet have collected it there, and the latter presented me with a skin from there. This pretty Finch seems to need water, for it visits wells and cisterns, as observed by Lynes and myself. The flocking together in spring is probably done for going to places where they can drink—apparently these flocks go for miles to water.

I think we must agree with Lynes, who said that the specimens he collected in the stony plain near Tiznit—and the one I mentioned before as doubtful from Tizi in the Great Atlas—belong to *B. g. amantum* (Hart.) which inhabits the Canary Islands. In shortness of wing and thickness of bill they are *amantum*, but their back is (in worn plumage) lighter! On the other hand, those collected near Aïn-Sefra in West Algeria are *B. g. zedlitzii*, which is a very distinct subspecies.

In Marocco this bird seems also to be restricted to the south of the Great Atlas; I never came across it in the Great Atlas, but two officers described it to me as having been seen on the south slopes of the Atlas.

As I have said, *zedlitzii* is a quite distinct subspecies, but the specimen said to be from "Constantine," in the Berlin Museum, most certainly never came from the neighbourhood of Constantine town, though from the province of Constantine. What I said about the length of the wings is perfectly correct, that of the female being about 5 mm. shorter, and if there are supposed pairs shot by Zedlitz with wings equal in the sexes, there must be some error about this.

Passer hispaniolensis hispaniolensis Temm.

When formerly writing about the Sparrows of Africa Minor I had not realised the fact that in Eastern Tunisia no *domesticus tingitanus* occurs, while *hispaniolensis* is very common in the towns (where, as a rule, they roost) and in the agricultural parts of the country. Only in the south of Tunisia we find that these Sparrows lose the stripes, which are the most characteristic feature of *hispaniolensis*, to a great extent, and in places entirely. Among these red-headed sparrows without stripes on the sides, there are, however, some that have stripes, so that this race is not absolutely fixed (*Ibis* Suppl. 1927, pp. 60–66). In none of those from South Tunisia is there an obvious admixture of *domesticus*!

How do these facts now agree with our theory that the *flückigeri*-type is the result of hybridisation of *hispaniolensis* and *domesticus*, established on observations and collections made in Algeria?

That hybridisation takes place is, in my opinion, not doubtful; not only do we—except in South Tunisia—never find these varieties (red-headed without stripes and males with crowns partially grey, partially red) in places where only either *hispaniolensis* or *domesticus* is found, but we also find many intermediate specimens (cf. *Nov. Zool.* xviii, 1912, and xx, 1913). How can it be explained, then, that in El-Oued only the *flückigeri*-type was found, and this is also the case in most of the South Tunisian oases? I think we can assume, that in El-Oued, as well as (more or less) in Ouargla and nearly so in Tonggourt, the parents have died out, and that this bastard-race, which breeds true, or nearly so, became established, and that this bastard-race has spread eastwards through South Tunisia. There can hardly be any doubt that in the course of time this race will become exclusive in these southern regions; I do not see how we can avoid recognising it **in that case**, by a name, the oldest of which is *flückigeri*! It will then perhaps be treated as a subspecies of *hispaniolensis*, though it is not, strictly speaking, of the same footing as other subspecies, which we regard as geographical forms, the results of surroundings, climate, and other local conditions.

Some modern ornithologists look upon *Passer hispaniolensis* and *domesticus*

as subspecies. This is, in my opinion, most misleading. Subspecies are geographical forms representing each other.

These two Sparrows, however, do not do this. Except on a few small islands and along the coast-stripe of eastern Tunisia *hispaniolensis* does not represent *domesticus* anywhere; in the range of *Passer domesticus* it inhabits similar geographical areas from the utmost west eastwards to Turkestan, Afghanistan, and Kashmir, but in northern regions and in tropical India *domesticus* becomes the exclusive form!

How did it happen that in Algeria such broadcast hybridisation took place? We cannot definitely say this, but it seems to me that it originated in their living together in the same conditions. In other countries this is apparently not the case. In Spain, Palestine, etc., *P. hispaniolensis* breeds chiefly in bushes and trees, gardens, and Eucalyptus growths, away from the towns, making the free nests which we know so well in our countries as those of *P. domesticus*, which is, however, more or less a frequenter of towns and nests to a large extent on buildings, also usurping swallows and martins' nests, nesting-boxes, water-pipes, and other unwelcome sites. Now where these two species live together, I would be more astonished if they never hybridised. They have females so much alike that one can hardly distinguish them, they have the same notes, except that that of *hispaniolensis* is a little higher, mellower, and they have the same dimensions.

In spite of continual attention I have never seen *Passer hispaniolensis* in Marocco, except in April 1901 in the Mehuila, the extended orange wood on the banks of the Oum-er-Rebbia east of Mazagan, where it is common. Riggenbach sent it from Bou Laouane on the Oum-er-Rebbia south-east of Mazagan, Djebel Chedar, and Mogador, also from the Mehuila. Bédé records it from Oudjda in North-East Marocco, near the Maroccan boundary.

***Emberiza striolata sahari* Lev.**

Nests in Figuig and Béni-Ounif, as well as in Aïn-Sefra. While it is so common and tame in Marrakesh, where it sometimes enters restaurants, pecking up crumbs, and sitting on the tables, or bedrooms, nesting chiefly in native houses, and is found at Asselda in the Great Atlas, it was not observed at or near Taddert in the valley of the R'dat.

***Calandrella brachydactyla hermonensis* Tristr.**

The specimens of *Calandrella* we shot in the Rehamna north of Marrakesh were this and not *rufescens minor*. Possibly the birds seen there by Lynes and myself and which we thought might have been *rufescens minor* were all *brachydactyla*!

***Ammomanes phoenicurus arenicolor* (Sundl.).**

Common near Colomb Béchar on April 17 and 18, but still in flocks: testes and ovaries winter size or very very little enlarged.

A few were also seen at Béni-Ounif, where it has also been recorded by Messrs. Foley and Gérard, under the name of "*cinctura*," a name referring to the subspecies from the Cape Verde Islands!

Anmmomanes deserti payni Hart.

We found this bird at Ain-Sefra and Béni-Oumif. Monsieur Bédé (*Mém. Soc. Sci. Nat. Maroc*, No. xvi, p. 67, 1927) says that Admiral Lynes informed him that he had collected *A. phoenicurus arenicolor* at Misour on the Muluya River, but this was a slip of the pen of the Admiral, the birds he saw and collected being *A. deserti payni*. The birds mentioned by Bédé (l.c.) as *A. deserti algeriensis* from Outat-el-Hadj on the Muluya were also *payni*, as our friend would see, if he again compared them with Tunisian specimens.

Messrs. Foley and Géard (*Bull. Soc. Hist. Nat. Afrique du Nord*, xviii, p. 181) recorded from Béni-Oumif both *A. deserti algeriensis* and *A. deserti intermedia* Heim de Balsac, both from other parts of Algeria, neither of them being found at Béni-Oumif.

Galerida cristata.

The knowledge of the forms of Crested Larks grows gradually, if slowly. In 1903-4 when I wrote about the *Galeridae* in my *Vôg. pal. Fauna*, I still united North Tunisian long-billed *Galeridae* with *macrorhyncha*. These were afterwards, 1905, separated as *G. c. carthaginiis* by Kleinschmidt & Hilgert, though the type was *not* shot near Carthage, but was a specimen from the neighbourhood of Tunis, bought from Monsieur Blanc—a very dangerous and censurable proceeding. This form was, as far as I am aware, never found outside of Tunisia. It is common along the Sahel and south to the plain of Achichina south of Sfax, being replaced by the so-called *G. c. gafsae* Kleinschm. & Hilg. farther southwards. Here, too, the two authors called the type of the subspecies from the Seggi *gafsae*, not a specimen shot at Gafsa! In this case this has caused much misunderstanding, as the form from Gafsa is *arenicola*!

Erlanger had *carthaginiis* from Tunis, Kairouan, and west of Souk-el-Arba. I also shot it on the slopes west of Souk-el-Arba, close to the Algerian frontier. Further west it was not known! In spite of diligent search Lord Rothschild, Hilgert, and myself have never turned up a Long-billed Crested Lark, *G. cristata*, in North Algeria proper, i.e. in the Tell-region. Yet I have no doubt that it will be found sparingly along the Tell from Tunisia to Morocco, because I have last year shot an adult male, April 14, west of Orléansville, and another adult male on April 27 west of Oudjda, west of the plain of Angad, in North-West Morocco. In each case two were seen, evidently pairs, but only one could be obtained. It is not astonishing that the occurrence of *cristata* in the coastal plains and hills has been overlooked. It is probably only a bird of the plains, not of the hills, it is obviously rare, and at a distance it is difficult or impossible to distinguish it from the common *theklae* forms found in the same places. And, worst of all, very little collecting has been done in these northern regions—most modern collectors, from Koenig to the present day, have been attracted by the southern desert-countries and neglected the northern belt as well as the highest mountains!

After shooting the specimens of *G. c. carthaginiis* west of Oudjda Haebisuka and I were on the look out for more Long-billed Crested Larks, but, unfortunately that day, April 27, we made by far the longest journey, from Oudjda to Fez, in one day! Therefore we could not delay for hours, where it would have been desirable, and we had to go too fast for careful observation. Nevertheless, we looked at every Crested Lark, but all seemed, and doubtless most of them were,

short-billed *theklae*, not *cristata*. But a little west of the Muluya River, not far from Guereif, we saw again two long-billed *cristata* and shot one of them. This, however, is much darker than the one from west of Oudjda, and it is in fact *Galerida cristata kleinschmidti* Erl., hitherto known from the Tanger region, near the forest of Mamora, and in the upper reaches of the Bou-regreg River.

While we saw no Long-billed *Galeridae* near Aïn-Sefra and near Béni-Ounif. Haehisuka shot a male (breeding condition) among the sand dunes and date-palms at Colomb Béchar on April 18. This is the only Crested Lark seen there by us with certainty, and it belongs to the southern subspecies, *G. cristata macrorhyncha* Tristr. (represented farther eastwards by the very closely allied *arenicola*).

It seems therefore that the distribution of the forms of *G. cristata* in Africa Minor is as follows :

G. cristata déprimozi Lavaud. : Kerkennah Islands.

(We have a few specimens from Monsieur Bédé, but unfortunately they are either bad skins or collected end of June, when in horrible condition).

G. cristata gafsae Kleiusehm. & Hilg. : From the island of Djerba to the eastern Bled Seggi.

G. cristata carthaginis Kleiusehm. & Hilg. : Northern Tunisia to North-West Marocco—probably sparingly all along the Tell.

G. cristata randonii Loche : Hauts Plateaux of Algeria (so far only known from Aïn-Oussera between Alger and Laghouat) to Missouri on the Muluya.

G. cristata arenicola Tristr. : From Gafsa in Tunisia to about N'goussa north of Ouargla and the plain of El-Outaya south of El-Kantara.

G. cristata macrorhyncha Tristr. : This very closely allied form replaces *arenicola* farther west, in the Mزاب country, and is common in and about Ghardaïa, Laghouat, etc. It evidently extends westwards into Marocco, as we got one at Colomb Béchar, near the Maroccan boundary.

G. cristata kleinschmidti Erl. : North Marocco eastwards to the watershed between Muluya and Sebou (waters running to Mediterranean and Atlantic respectively), south to upper reaches of Oued Beth and Bou-Regreg, Mamora, and probably farther southwards.

G. cristata riggenbachi Hart. : Replaces the former from the valley of the Oum-er-Rebbia southwards to the Sous (Lynes), but absent from high altitudes.

Galerida theklae.

Generally the Short-billed *theklae* vary more individually than the fairly constant *cristata* and they are therefore somewhat difficult to limit. The "dusting" in sand and soil colours the plumage in the same way as the *cristata* forms.

Galerida theklae harterti Erl. : In North Tunisia *G. theklae harterti* Erl. is common. It extends over North Algeria, i.e. the coastal plain and Atlas Mountains (Tell), westwards to the neighbourhood of Oran and Tlemcen, south to the northern Atlas range, as far as Berrouaghia (at least) and Mascara.

Galerida theklae erlangeri Hart. : Replaces *G. t. harterti* further westwards, in North Marocco (Tanger, Yebala), south to the region of Azrou (Middle Atlas), Upper Oued Beth, Upper Bou-Regreg, Tafoudait, Mamora, and probably farther southwards.

This form is very closely allied to *G. t. harterti* of North Tunisia and North Algeria, but has a much smaller and finer bill.

Galerida theklae ruficolor Whit.: Replaces *G. t. erlangeri* from the Oum-er-Rebbia south to the Sous, but does not ascend, in the Great Atlas, over 4,600 feet, in the narrow valleys south of Marrakesh not 1,000 metres. It extends north-eastwards by Meknès, Fez (Fes), to Lalla Marnia in North-West Algeria.

***Alauda arvensis harterti* Whit.**

An adult male in nesting condition was shot 26.iv.1927 west of Tlemeen, near Oudjda. Several were singing, and these Skylarks were doubtless breeding on the plain of Angad. It seems to me that the same subspecies breeds there as well as on the Hauts Plateaux of the Middle Atlas, the plains of Tunisia, and the Algerian Plateau, and that it is more the condition of wide plains than the elevation they care for.

***Chersophilus duponti duponti* (Vieill.).**

On the plateau between Bou Saada and Djelfa I heard the peculiar song and Mr. Turtle shot a specimen. This is the same plateau, with much *Artemisia* and *Thymus*, on which we found this bird not rare farther north, near Ain-Oussera, in 1914. In Tunisia we were not far enough south to come across *C. d. margaritae*.

Mr. Bannerman's notes in *Ibis*, 1927, Suppl. pp. 108-111, require some comment. It is valuable to have specimens in spirits, though there could never be any doubt that *Chersophilus* is a Lark! I cannot find the plate in Whitaker's *B. of Tunisia* at all good, but I would not call it too yellow. The district where Bannerman shot two specimens was about the same in which Koenig discovered this subspecies, and the skins from there are somewhat intermediate, not as bright as those from Medenine, Tatahouine, Cyrenaica, and Sollum. Bannerman deplored that no one had a sufficient series to discuss the subspecies of this bird. It is true that the British Museum had only a very small series and he obtained two, one of which was skinned. But had he seen the series of 44 skins of the two subspecies in the Tring Museum, he would perhaps not have said so. The species is entirely a bird of North Africa, and the few specimens known from Portugal, Spain, and the Provence must have been astray, for it does apparently not breed there. Bannerman again mentions specimens from the "Balearic Islands," but it is known that no *Chersophilus* occurs there. The supposed Balearic specimens were bought on the market by one of the Brothers Gal (Gal Frères) in Nice and labelled "Iles Baléares." They were not "collected by Schutter," but bought from the German dealer Wilh. Sehlüter, who had received them from Gal Frères. The birds came from North Algeria or Tunisia. Gals' wrong locality has disturbed many ornithologists. I thought we had published the facts, but this does not seem to be the case. All we find about it is in Jordans' *Vogelfauna Mallorca*, pp. 64, 65, 1914.

***Rhamphocorys clot-bey* (Bp.).**

Hachisuka, myself, and Jourdain have, in 1927, in vain searched for it near Ain-Sefra, in the places where it was fairly common in 1913.

The species, however, has recently been recorded (Foley & Céard, *Bull. Hist. Nat. Afrique Nord*, xviii, 1927, p. 180) from Béni-Ounif and Colomb Béchar, and Heim de Balsac found it 50 km. north of Aïn-Sefra in Morocco (H. de B. in litt.).

Motacilla flava iberiae Hart.

I found this, the Spanish, subspecies again, evidently on the breeding-ground, on a wet meadow with tamarisk bushes on the Oued Tensift near Marrakesh on May 8. A male with the white superciliary line narrower and shorter was shot at Biskra on April 3.

Motacilla alba subpersonata Meade-Waldo.

Observed on the Tensift River north of Marrakesh.

Lanius excubitor dodsoni Whit.

It seems that nearly all the dark Shrikes of Tunisia belong to *dodsoni*, and that *algeriensis* is usually only found rarely in North Algeria and common in North Morocco, where it ranges down to about Casablanca, and is not rare on the Upper Oued Beth, but from the Oum-er-Rebbia southwards it is everywhere replaced by *dodsoni*.

Lanius excubitor elegans Swains.

A few Grey Shrikes were seen near Beni Ounif, and specimens shot belong to *elegans*, and this form was also found by Heim de Balsac north of Figuié. A Grey Shrike seen by Lord Rothschild near Aïn-Sefra, in 1913, was then probably also *elegans*.

Erithacus rubecula witherbyi Hart.

Erithacus rubecula witherbyi Hartert, *Vög. pal. Fauna*, i, p. 753 (1910—Northernmost Tunisia (Camp de la Santé), North Algeria (Hammam R'hira and Blidah Glacière) and Moroccan Atlas. The latter statement wrong, the Moroccan form being slightly different again: *E. r. atlas* Lynes).

Erithacus rubecula lavaudeni Bannerman, *Bull. B.O. Club*, xlvii, p. 24 (1926—Les Sources, Aïn-Draham); *Ibis*, 1927, *Suppl.* p. 140.

It was from specimens from the Kroumirie, Camp de la Santé, a few miles from "Les Sources" and North Algeria, that I described *E. r. witherbyi*, and this has been accepted by MM. Lavauden, Blanchet, and Bédé and others, and is correct. The differences which Bannerman pointed out are either individual, or due to his comparing birds shot later, when they fade considerably. Even ours shot 29.iii are a slight tinge lighter than his from March 7. We took care to collect half a dozen Robins at "Les Sources," the exact place where Bannerman collected his "*lavaudeni*." Robins were common near Camp de la Santé (only a few miles from Les Sources), in the same vast forest and at Les Sources, and we could have shot more, if it had not rained all the time we were there. All our skins are alike, and they do not differ from the type of *witherbyi*, except that the upperside is a *slight shade* darker, due to their being shot a month earlier. The Camp de la Santé specimen is not, as Bannerman says, "difficult to separate from *E. r. witherbyi*," but not at all separable, except that it is, due to the date

when shot, slightly *lighter*, but not darker, as it should be, if Bannerman's *lavaudeni* was separable. There is no difference in size either, nor does the bill differ constantly. Much as I regret, that I must reject Lavauden's name and Bannerman's supposed subspecies, I must decidedly state that *lavaudeni* is a synonym of *witherbyi*.

The European form winters in Africa Minor, in fair numbers, from Marocco to Tunisia. The Robins at Les Sources were evidently "at home," singing in spite of the rain and cold.

Hirundo rustica.

When we were in Colomb Béchar I was struck by the great tameness of the Swallows in the hotel yard. They used to come and sit on railings and wires so that one could almost take them in the hand, but in the evening, when the light was turned on, I actually took several in my hands and put them back on the wire from which I had taken them.

Delichon urbica meridionalis Hart.

In Orléansville 14.iv.1927 we observed a colony on a large house in the town. The birds were building and apparently repairing old nests. A male shot had testes 5 mm. long and was very fat. It is very typical *meridionalis* with very short tip of the wing, the left wing measuring 101 mm.

In Bou-Saada, April 7, House Martins swarmed in the river-bed, but they were probably still on migration.

Riparia rupestris rupestris (Scop.).

Several were flying on the rocks of El-Kantara on April 2, but whether they were breeding there or not I could not say. The neighbourhood of El-Kantara is, however, the only place where the Rock-Martin is known to breed, except (teste Heim de Balsac) the Gorge de Chiffa in North Algeria.

Riparia riparia riparia (L.).

A flock in the river-bed at Colomb Béchar, April 17, testes small, probably still on migration. Wing 108 mm.

Riparia paludicola mauritanica (Meade-Waldo).

These little Sand Martins were flying about near the Tensift River north of Marrakesh, and sat on the telegraph wires by hundreds. All these were either young (with pale rufous-sandy edges to the feathers of the upperside), or adults in full moult, after the breeding season, sexual organs very small, quite reduced. The old feathers are quite pale sandy, the new ones dark mouse-grey. On June 2, when we passed the same place, not a single one could be seen.

Apus melba.

The forms of the Alpine Swift are not easily understood. In 1912 (*Fög. pal. Fauna*, p. 835) I did not admit *Apus melba tuneti*, described by Tschusi as a paler subspecies from Tunis. Later on I recognised *tuneti*.

In 1926 (*Mém. Soc. Scienc. Nat. Maroc*, No. xvi, p. 20, publ. 1927) I called attention to the fact that a specimen from Meknès, taken from the nest May 26, is darker than the others from that town, which are typical *tuneti*, and might pass for *A. m. melba*. In 1927 I found the Alpine Swift as common in Fez as in Meknès, and (as I could not shoot in the crowded streets of the town) got a boy who caught six in their nests, and who also brought two clutches of three eggs each, all fresh. Now these six Swifts (three in the Museum at Tring, three in Hachisuka's possession) were all perfectly alike, dark, and indistinguishable from the darkest *A. melba melba*!

This, however, does not induce me to suggest that *A. m. melba* and *tuneti* are to be "lumped." In fact, in Tunisia all specimens nesting in various parts of the country, of which Monsieur Blanchet has a very fine series, are pale, while one, obviously on migration, passing over the plain at the foot of Djebel Cherichera in Middle Tunisia on March 25, and shot in my presence by Monsieur Lavauden, differs from all these and belongs to the dark *melba*. To the pale form belong also those nesting in Constantine. It is, however, very strange that Fez (Fès), only 55 km. east-north-east from Meknès, has a population of dark *melba*, while those of Meknès, or at least the majority of them, are pale *tuneti*.

Comparing all our Alpine Swifts, I find further that a series from Somaliland, from Hargeisa, 4,000 feet, and Bihendula, 2,000 feet, are of the pale *tuneti* type, but very much shorter in the wing and tail. While *tuneti* have wings of 217 to 229 mm., the Somaliland ones have wings of 195 to 207 mm. I therefore name this small race

***Apus melba archeri* subsp. nov.**

Type: ♂ ad. Hargeisa, 28.vi.1918, No. 1107, collected by Sir Geoffrey Archer, in the Tring Museum. The specimens were collected in June and March. At least one of the June specimens is in moult. Named in honour of Sir Geoffrey Archer, formerly Governor of British Somaliland.

As long ago as 1880 Legge called attention to small dark Alpine Swifts obtained in Ceylon, apparently nesting on the island. I mentioned them again in the *Vög. pal. Fauna*, 1912, and Baker in 1927 described them, but cautiously did the same as I did, i.e. deferred action until material of breeding birds would be at hand. This I approve of heartily, as a rule, but I have now seen so many *Apus melba* from many localities, that it is evident to me that such small and at the same time dark birds, as I have seen from Ceylon, with wings only 200, 203, 207, 212 mm. (thus like *archeri* but dark!) are not found elsewhere. I therefore name the bird apparently nesting in Ceylon

***Apus melba bakeri* subsp. nov.**

in honour of my friend E. C. Stuart Baker. Type: An adult bird from Catton Estate, Ceylon, 4,500 feet, 1866, collected by S. Bligh, ex Mus. E. Holdsworth in the Tring Museum. Three others in the British Museum.

Probably there is another unnamed though distinct form, of pale colour, like *tuneti* and *archeri*, but larger than the latter, and with the white throat patch reduced as in *A. m. africanus*. These seem to breed in the mountains of India,

and we have a specimen collected in South Arabia, in June!, by Bury. These birds require further investigation, we must have series from breeding-places before we can do more.

***Apus affinis galilejensis* (Antin.).**

The little white-rumped Swift seems to be spreading northwards, for, as we know from Lavauden, it nests now every year on the cathedral of the town of Tunis, where it was formerly unknown. In Marocco it now nests on a house in a busy thoroughfare in Rabat, where a few years ago it was not known, and Lynes tells me that he saw a number in the air from his bedroom window in a



FIG. 11.—S.W. GATE OF MARRAKESH UNDER WHICH WHITE-RUMPED SWIFTS (*APUS AFFINIS*) NEST.

hotel in the centre of the town of Casablanca. In Marrakesh they nest under gateways of the ports of the town, in clusters over a well, and in subterranean watercourses outside the city walls.

There is no doubt that these birds are generally migratory, i.e. in Tunis and Rabat, while in Marrakesh, according to information given to Lynes by Mr. Muir, they are only entirely absent for about two months in the winter.

The specimens from Marocco cannot be separated from *A. a. galilejensis* (Antin.). This paler form is also found in Persia and North-West India. There are, however, birds which are darker, with darker and longer tails, which Baker rightly called *nipalensis* (Hodgs. 1836). Baker unites with this the apparently still darker and perhaps smaller Ceylon form, which Madarász described as *Apus singalensis*—unfortunately not quoted by Baker, as he left out synonyms, but, of course, one does not know if he did this purposely, or whether he did not know the name *singalensis*. There are, unfortunately, only two specimens in the British and only one at Tring from Ceylon, but it will be better not to close the door and to keep the Ceylon form doubtfully different.

In North Africa, south to Aïr (Asben) we find *A. affinis galilejensis*, but in the tropics, West Africa and East Africa, lives a darker form which seems not to differ in any way from the Indian *A. affinis affinis*. Breeding birds from Somaliland require attention. They are pale, like *galilejensis*, but seem to have shorter wings?

Again, on the islands of Sao Thomé and S. Principé a different form is found, which is still blacker than *A. a. affinis*, and has a longer tail.

I name this subspecies

***Apus affinis bannermani* subsp. nov.**

in honour of Mr. David Bannerman, who has written about the birds of these islands, and who confirmed the differences from the specimens in the British Museum and supplied the measurements of the latter.

A. a. bannermani differs from its allies as follows: They are darkest of all, on head, back, and abdomen, agreeing in their dark colour, especially dark black-brown forehead and blackish tail only with *singalensis*. The tail and wing is longer, though in the length of the tail *nipalensis* is about the same. All the specimens have more or less distinct blackish or brown shafts to the white feathers of the rump and dark brown shaft-lines on the throat. In other *A. affinis* the rump-feathers and throat are quite white and have only very rarely and quite exceptionally indications of dark shafts. The measurements are as follows (Mr. Bannerman having kindly supplied those of the British Museum examples):

Wings: Princes Island: ♂ 137, ♀ 136 mm.

San Thomé: ♀ 134, 137, not sexed 135.5, 142.5 mm.!

Bill: Princes Island: 6, 6 mm.

San Thomé: 6, 7, 7, 7 mm.

Tail: Princes Island: ♂ 46, ♀ 43 mm.

San Thomé: ♀ 43, 45, not sexed 45, 47 mm.

In *A. a. nipalensis* from Nepal and Sikkim the wings measure 126, 129, 129, 130, 130, 131, 132, 133, 133 mm., tails 43, 43, 43, 44, 44, 44, 45, 45, 45.5 mm.

In *A. a. nipalensis*, however, the crown and forehead are paler brown, not so blackish, the mantle is not so deep blue-black, but brownish black, the rump feathers without dark shafts, while the tails are also dark and long.

Type of *A. a. bannermani* adult, Pedroma, San Thomé, November 1899, A. Mocquerys coll., in Tring Museum.

We would therefore distinguish the following forms:

Apus affinis affinis (Gray) (probably valley of Ganges).

Western and Central provinces of India to Deccan and great parts of tropical Africa. (Specimens from Somaliland require further study, Abyssinian birds are not separable.)

Apus affinis galilejensis (Antin.) (Lake of Galilee).

From Syria to Marocco, locally distributed, nesting in colonies, Sind and North-West Provinces of India. (Nesting Sind.)

Apus affinis nipalensis (Hodgs.) (Nepal).

Nepal to Bhutan and Kamrup in Assam, Bengal Duars, Orissa to Madras and, according to Baker, to Belgaum, Mysore, and Travancore.

Apus affinis singalensis Mad. (Madarász, *Ann. Mus. Nat. Hungar.* ix, p. 420, 1911—Ceylon).

Apparently restricted to Ceylon, and requiring further confirmation, but nesting Ceylon.

Apus affinis bannermani Hart. (San Thomé and Princes Island).

Apparently restricted to these islands.

Apus affinis subfurcatus Blyth (Penang).

Assam to Burma and western China west to Chittagong and Comilla in East Bengal, Siam to Malay Peninsula, Sumatra, and Borneo.

Merops apiaster L.

I never saw so many Common Bee-eaters as on April 23 in the plantation at the bottom of the sand dunes at Aïn-Sefra. Late in the afternoon hundreds were sitting on the sand dunes, other hundreds on tamarisk-trees, others again on tall poplars, fig-trees, and others. They evidently were going to roost there, still being on migration.

Merops superciliosus chrysocercus Cab. & Heine.

On April 5 a few were seen in their old haunts on the Oued Biskra south of Biskra, where later on they nest.

On April 19 a number were seen in various places from the train between Colomb Béchar and Béni-Ounif, and we saw several in Figuig, westernmost Morocco.

On May 23 Young and I saw most clearly an adult *M. s. chrysocercus* sitting on a telegraph wire between Khemisset and the Oued Beth, not far from that river; the colours and the long tail were very conspicuous—but what was this bird doing so far away from any of its known breeding-places, which are in the desert?

I am afraid we cannot avoid treating *M. persicus* (and therefore, of course, also *chrysocercus*) as a subspecies of *M. superciliosus*!

Falco biarmicus erlangeri Kleinschm.

We observed this Falcon several times between Sousse and Sfax in Tunisia, and Turtle shot a beautiful adult female from the car. Several times I saw it at a distance in Algeria, but we had no time to locate nests or to shoot specimens. Between Tlemcen and Oudjda we saw one, evidently an adult female, take a chicken, perhaps three-quarters grown, from a farm-yard, close to us; we could not see the actual striking of the bird, as it was done beyond a wall, but it flew over our heads with its quarry, and was soon out of sight behind a hill.

Falco biarmicus nests in southern Spain, but I am not aware that there are skins in any Museum, except one in Norwich! Egg-collectors have probably got their eggs, but they are scientifically quite useless if the parents are not obtained. A lot of unnecessary collecting is unfortunately done by egg-collectors

who do not preserve birds. There are, for example, a number of eggs of Goshawks from Spain and Tanger, or its wider neighbourhood, in collections, but I believe Witherby is the only collector who has an adult Goshawk from Spain in his collection.

Falco peregrinus pelegrinoides Temm.

The above name must be used for the Lesser Peregrine of North Africa. We did not obtain specimens, though probably the bird was seen once near El-Kantara and in the Middle Atlas of Marocco, in the distance.

Falco peregrinus brookei Sharpe.

Monsieur Paul Bédé presented me with an adult male in his collection. It was captured at sea between Sfax and Kerkennah 29.x.1926 and kept in Bédé's aviary until 1.xii.1926, when it died suddenly. It was found to be full of ascarids. This bird has no red nape patch and is underneath white, with the usual dusky cross-bars, and the very faintest creamy tinge along the middle of the abdomen, throat white, jugulum with a few blackish shaft-stripes, upper-side dark.

It is wrong to use the name *punicus* for this or any other Falcon. The much-discussed plate of *Falco punicus* Levaillant jun. (to which no text appeared) represents *Falco per. pelegrinoides*; several ornithologists with whom I have discussed the question (with specimens for comparison) agree with me. We have several specimens which agree closely with the plate, while I have not seen any *brookei* like it. When Monsieur Lavauden was at Tring, he was astonished to see our plate of *Falco punicus*, saying he could now understand my explanation of the plate, but the plate in his copy (or the one he had consulted) was very different. Therefore his copy must be wrongly coloured (there is no text to this plate!), for I have now seen two other copies in London which are exactly like our copy in Tring.

Kleinschmidt's idea, that it represents another subspecies, different from *brookei*, requires confirmation. Neither are our skins from Tanger very different from others from Sardinia in colour (except that they are in less fresh plumage, and therefore a bit faded), nor are they noticeably smaller. Kleinschmidt's own measurements only suggest them to be smaller, as he measures (and his measurements are exceedingly correct) "*punicus*" wings ♂ ad. 274-290, ♀ 325-339, "*brookei*" ♂ 290-299, ♀ 328-348 mm. Surely a few mm. in a Peregrine are not of any importance, if only such few specimens are examined.

It is regrettable that Kleinschmidt did not mention the South Spanish Peregrines, which I find in every way indistinguishable from those from Tanger and not essentially different from Corsican and Sardinian ones. Wing ♂ ad., Aquilas near Murcia 12.iv.1899, Gray coll., on the label correctly called "Mediterranean Peregrine." Besides this we only have a young female from the same locality. A pair still nests on the Rock of Gibraltar, where it is protected.

Of North Africa we only know the following: Formerly Olcese and Favièr used to obtain many specimens on the northern Peninsula of Marocco, and it nested at Cap Spartel (teste Irby). Specimens are also occasionally obtained on the coasts of Tunisia, mostly through Monsieur Blanc. Vaucher obtained

one at Rabat, May 1898, and according to Kleinschmidt, Flückiger one at Kerrata in North Algeria.¹ Others evidently nest not only on Corsica and Sardinia, but also on Mallorca, Elba, Monte Cristo, and apparently near Marseille (specimen in Marseille Museum). It seems therefore that *F. p. brookei* is the nesting form in North Marocco (while farther south breeds *pelegrinoides*), but for Algeria and Tunisia, as far as I know, the nesting has not been proved.

Falco naumanni naumanni Fleisch.

Very numerous at El-Hajeb. On the walls of Chella and Sallé they had, I am sorry to say, considerably decreased against 1924 and 1925, but I do not know the reason. Though I have seen an irresponsible boy shooting two near Sallé in the month of May, I do not think that these pretty and useful Falcons are much persecuted by the European gunners, but that there may have been some natural causes for a (temporary) diminution of the species.

? **Aquila heliaca adalberti** Brehm.

One morning at the cliffs of El-Hajeb Young and I saw two large eagles flying over in the distance, which had the underside orange fawn-colour. I do not know what they could have been if not *A. h. adalberti* in the juvenile dress. Unfortunately they were not seen again. Though this bird is very rare and perhaps not a regular inhabitant of Marocco, it has once nested near Larache, where Vaucher took the eggs and shot the female. These two big eagles were certainly not *chrysaetos*, nor could any Maroccan *rapax* appear so bright underneath—almost yellowish orange-brown.

Milvus milvus.

In *Mém. Soc. Sciences Nat. Maroc.* No. xvi, p. 36, Monsieur Paul Bédé has given the name *M. milvus harterti* to the supposed subspecies of the Red Kite in Marocco, but the type (shot by himself near Aïn Leuh) is not adult, and the slight difference in size is not a proof that this form is really smaller than European specimens.

Comatibis eremita (L.).

There are two colonies, not very far from each other, near El-Hajeb, one of which, the smaller one, was discovered by Paul Bédé, in consequence of a fortunate breakdown of the car in which he travelled from Meknès to Azrou. The rocks are very rugged and full of smaller and larger caves and holes, in which the Ibises nest. The biggest colony must consist of nearly fifty nests. The nests are inaccessible, except with elaborate climbing gear, and perhaps for lithe Berber boys accustomed to these rocks, which they climb occasionally for honey. Unfortunately no boys were available during my first visit with Hachisuka, as a big "fantasia" with endless riding, shooting, and feasting was going on near by, and when I returned there four weeks later, the Ibises had

¹ This specimen, now in Koenig's collection, I have since examined. In opposition to the specimens seen from North Marocco and Tunisia it has as large rufous patches at the back of the head as *pelegrinoides* usually has, and I think it is a strongly marked *pelegrinoides*. This specimen was shot in the breeding season.

young, as was clear from fresh pieces of egg-shells, out of which young had emerged, so I did not care to risk a life.

Once we saw the Ibises feeding close by on an inundated field, but generally one saw no sign of them until one was close to the rocks, when they came out of their holes with an audible rustle of wings, flew straight away from the cliff, then turned round and flew round and round, not entering their caves until one went away some distance or was hidden quite out of sight. When flying round their wings were quite extended, but after some time, when coming nearer to the nests, the wings were much more bent, and this was generally suddenly done by a flock. Neither while they were sitting on ledges nor when flying round was any sound ever heard by us, and certainly Bédé was mistaken when he thought that he believed that they continually kept on crying like curlews! In fact, they usually utter no sound whatever, neither when they leave the nest, nor when they fly about, nor when they walk on the ground in search of food. Only very rarely can one hear a very soft whistle, which Heim de Balsac likens a little to that of *Milvus migrans*. This latter gentleman has, however, heard also a deep, hollow croak, difficult to describe.

The food at this season consists very largely of beetles; in every stomach I found beetles, also more or less stones. In one stomach I found eight *Buprestidae* (*Julodis anoperdi*), some small *Carabidae*, several grasshoppers, several large caterpillars, ants' "eggs," and stones. *Orthoptera* are, of course, a favourite food.

Sir Geoffrey Archer shot a male in much worn plumage on September 21 at Tug Wujaleh, Somaliland, 5,000 feet high. Major Flower observed six or eight miles south of Singa on the Blue Nile on February 11, 1922, several hundred, perhaps over a thousand, of these Ibises; one was shot, and is now in the Giza Zoological Museum; he had seen specimens twice before on the Blue Nile, but never such large numbers of individuals (cf. *Ibis*, 1922, p. 598).

1923 and 1924 these Ibises, as Monsieur Heim de Balsac tells us, have certainly nested on the old cliffs south of Boghari, while in 1925 and 1927 they did not nest there, and of 1926 there seems to be no information. The theory that they nest in years with more rainfall, and therefore with many orthoptera, is probably correct. In that case they should nest again in 1928, the year—according to Heim de Balsac, in litt.—being exceptionally humid and locusts having been observed.

Chlamydotis undulata undulata (Jacq.).

Seen (and shot) on the plateau between Tolga and Bou-Saada, and observed twice from the train between Colomb Bèchar and Béni Ounif.

Anthropoides virgo (L.).

On May 28 two were seen flying in the direction of Meknès near El-Hajeb, loud calling. I also saw one that was shot by Captain Ayard near Aïn Leuh in the Middle Atlas.

Columba oenas oenas L.

In June these Pigeons came with *Columba livia* and *palumbus* in flocks to the cornfields, just being cut, on the river near Asni in the Great Atlas.

They must have come from some distance, as there seemed to be no breeding-place near.

Cursorius cursor cursor (Lath.).

A few were found (in small flocks) by Hachisuka near Beni-Ounif. Quite a number were observed north of Marrakesh in June, where a small flock was also seen in May.

Glareola pratincola pratincola (L.).

On May 10, on a small lake between Rabat and Fedhala, we found a good number, evidently on breeding ground, but they had not yet any eggs. Later, when passing along in the large omnibus of the C.T.M., the water seemed to have disappeared, and no birds were seen—though of course we could not make sure that they had deserted the place.

Numenius arquata arquata (L.).

May 5 half a dozen at the mouth of the Bou Regreg near Rabat.

Numida meleagris sabyi Hart.

I had been told it would be easy to come across Guinea-fowls near Ouldjet-es Soltan, but there are none near that post, and we saw not one. Some Berbers, however, brought in two for Hachisuka. The crop of one of them was full of beetles: several Buprestids of the species *Aurigena unicolor* var. *igniventris*, *Julodis anoperdi* var. *algerica*, and *Lydlus marginatus* F.

A clutch of eight eggs was found near the Upper Oued Beth on May 14. It was somewhat incubated. The eggs measure 49×39 , 50.5×39 , 51×38.5 , 51.3×39 , 51×39.5 , 52.5×38.5 , 53.5×37.7 , and 54×39 mm.

As I proposed to treat all real Guinea Fowls as subspecies of one species, the name of the Moroccan form remains *N. m. sabyi*. Linnaeus, when creating the name *Phasianus meleagris* (*Syst. Nat.* ed. x, i, p. 158, 1758), took this from his own "*Gallina (Meleagris)*" in Hasselquist's *iter Palaestinum*, p. 274, where a specimen is described which came from Nubia: "Subjectum descriptum ex Nubia erat allatum, ex Mercatoribus Nubiis," etc., and the bristles on the forehead are described. It is therefore perfectly adequate to refer to the work on Hasselquist's voyage, edited by Linnaeus, after Hasselquist's death, and the name of a bird that came from Nubia and has bristles on the forehead cannot be accepted for one from West Africa without bristles!

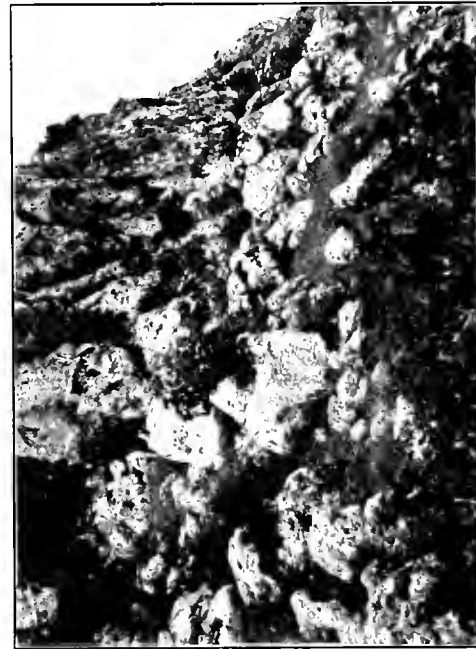
In an excellent "Monografia delle Galline di Faraone (Numididae)" Professor Alessandro Ghigi (1927) kindly admits that my view might be taken, but, he adds, that the change is not really necessary in obedience to the principle of priority, and that the Guinea Fowl's names should not be changed because these birds did not belong exclusively to the ornithologists, but belonged also to agriculturists and scientific men working in applied zoology. To this I must reply, that the acceptance of the name *meleagris* for the Nubian Guinea Fowl is not only possible but unavoidable. Agriculturists will not worry about this, and surely none of them has noticed it, though it is now in use for a number of years; they will call it Gallina di Faraone, like English farmers call it Guinea



E. Hartert photo.

VIEWS FROM THE GREAT ATLAS, MAROCCO.





E. Hartert photo.

ASPECTS OF THE ROCKS ON WHICH COMATIBIS EREMITA NESTS NEAR EL-HAJEB, MAROCCO.



Fowl, Germans Perlhuhn, French Pintade, etc., etc., and men working in applied zoology will do the same, or else will get over the change soon enough, and if they do not accept, it will not matter much.

From Professor Ghigi we learn that about 2,300 years ago the Guinea Fowls were found in much the same part of Marocco as now! For in Hanno's *Periplus* it is said that near the Lake Cephesis, which is the modern Merdja Ras-er-Daoura, between the Oued Sebou and the Atlantic Ocean, the Guinea Fowls were found, while they still live on the upper Oued Beth, which is only a tributary of the Oued Sebou.

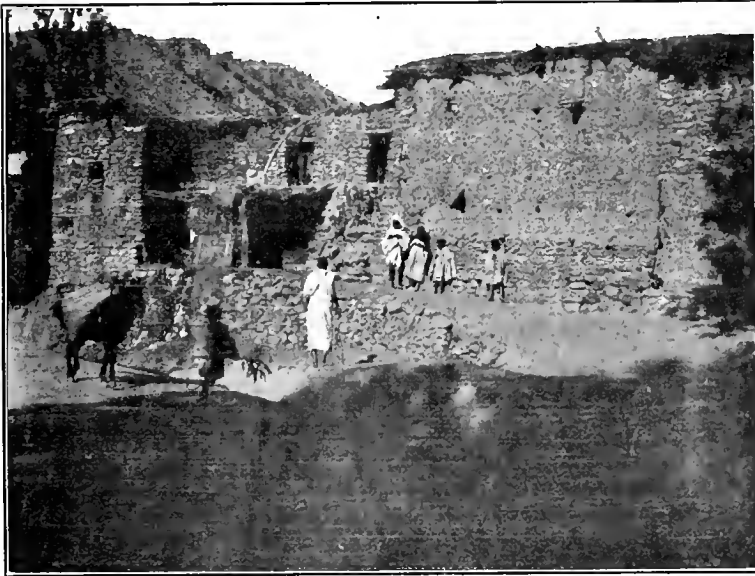


FIG. 12.—BERBER HOUSE IN TADDERT, GREAT ATLAS, BUILT IN TWO STORIES.

BIRD NOTES.

BY GREGORY M. MATHEWS.

Pseudolalage gen. nov.

Differs from *Lalage* in having rectal bristles ; the bill is more slender. The feathers on the rump not so sleek. The feathers of this bird are fluffy, not hard as in *Lalage*.

Type : *Lalage banksiana* Gray.

Analisoma gen. nov.

Differs from *Edolisoma* Pucheran, in having a thicker, heavier bill, and from *Graucalus* in having the nostrils not covered with feathers, and placed differently.

Type : *Campephaga analis* Verreaux et des Murs, 1860.

Lisomada gen. nov.

Differs from *Edolisoma* Pucheran, in having the sexes alike. The tail is also shorter in proportion to the wing measurement.

Type : *Volvocivora inspirator* Finseh.

Lophomyiagra gen. nov.

Differs from *Myiagra* in having a crest of feathers ; the nostrils are placed farther from the base of the bill, not partially hidden.

Type : *Myiagra azureocapilla* Layard 1875.

Oscarornis gen. nov.

Differs from *Lalage* Boie in having a distinct bill, showing it to be the most primitive form.

Type : *Lalage sharpei* Rothschild.

Melanopitta Bonaparte, *Ateneo Italiana*, vol. ii, No. 11, p. 317 (*Consp. Voluc. Anisod.* p. 7), before August 28th, 1854, was introduced for certain birds, amongst which, as first species, was *Pitta cucullata* of Hartlaub. The next year Gray, p. 144, designated this as type. No black *Pitta* was known then.

In 1871, Schlegel, in *Ned. Tijdschr. Dierk.* vol. iv, p. 47, described a new genus and species as *Melampitta lugubris* from Arfak, N.W. New Guinea.

In 1885, Stejneger in the *Standard Nat. Hist.* vol. iv, p. 466, introduced the genus *Mellopitta* for *lugubris* Schl. only.

In 1888, Selater, writing the *Catalogue of Birds in the British Museum*, vol. xiv, used on p. 449 *Coracopitta*, and in a footnote adds *Melampitta* in its correct form. *Melanopitta* is already in use for a subgenus of *Pitta*. I propose therefore to replace it by *Coracopitta*.

Edolisoma melan goodsoni subsp. nov.

Differs from *E. melan* (Müller) in having the male with steel-green, not purplish, reflections, more noticeable on the wings and under surface. In the female, the upper and under surface is distinctly darker, the bill is longer, and the lores blackish.

Type in Tring Museum, collected on Trangan Island, in the Aru Group by H. Kühn. Type female September 21st, 1900.

Distribution : Aru Islands.

Artamides welchmani bougainvillei subsp. nov.

Differs from *A. w. welchmani* (Tristram) in being distinctly lighter above and below : the throat is blacker and the bill smaller. Wing 184.8.

Type : a male, collected on Bougainville Island, Solomon Group, on April 20th, 1904, by A. S. Meek. In Tring Museum.

Submyiagra ferrocyanea cinerea subsp. nov.

Differs from *S. f. ferrocyanea* (Ramsay) in the female, by having a grey chin and throat : the bill is also wider.

Type : Collected on Bougainville Island by A. S. Meek on January 18th, 1908.

Rhipidura rufidorsa kumusi subsp. nov.

Differs from *R. r. rufidorsa* Meyer, in having a lighter head (more greyish) and the back and rump being lighter brick red.

Type : a male, collected on the Kumusi River, south-east New Guinea, on August 22nd, 1907, by A. S. Meek. Type in Tring Museum.

NOTES ON *IOLAUS*, *ARGIOLAUS* AND RELATED GENERA,
WITH DESCRIPTIONS OF NEW SPECIES, SUBSPECIES AND
A NEW GENUS (LEP. LYCAENIDAE).

BY N. D. RILEY.

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(With Plates X, XI.)

THE following notes are intended to be supplementary to the excellent account of the genera concerned given by Aurivillius in Vol. XIII of Seitz, *Macrolepidoptera of the World*. The material upon which they are based was not available to him, and in the main has only recently been received by the British Museum through the acquisition of the Oberthür collection and the gift of much material from Mr. Bethune Baker's collection. In addition to the resources of the British Museum, through the kindness of Lord Rothschild I have been able to examine the whole of the material in the Tring Museum, which has proved of the greatest assistance. Notably the hitherto unknown male of *Argiolaus maesa* was discovered in Lord Rothschild's collection, and further a number of new forms which will be found referred to below. Mr. Joicey also most kindly lent me all the types of *Iolaus* (s.l.) in his possession, and the results of the examination of these have, I hope, greatly increased any small value these notes may have had.

A good many species are here recorded from Uganda and East Africa that have previously been known only from the West Coast; and the remarkable uniformity of the geographical variation of these races is perhaps worth indicating. The species concerned are all extremely beautiful, with brilliant blue and black upper sides and delicately marked undersides. On the West Coast the upper sides are almost invariably intense deep blue, the red markings about the anal angle of the underside of the hindwings fairly extensive and deep red in colour. On the East Coast these colours as a general rule give way respectively to pale sky-blue, often mixed with white, and much restricted, sometimes almost obsolescent orange.

Tanuetheira H. H. Druce.

From the long series of *T. timon* Fab. now in the British Museum, it is evident that H. H. Druce's *T. prometheus* is only a subspecies of *timon*. It is easily recognised in the ♂ by the more developed androconial area of the disc of the forewing, which stands out as a rather conspicuous large dark brown patch. The females are less marked marginally on the underside than in *T. timon timon*.

T. timon orientius Hulstaert (*Rev. Zool. Afr.*, xii, p. 177, 1924) is the well-marked subspecies found in Uganda. There are 7 ♂♂, 6 ♀♀ in the British Museum. The best distinguishing characters are furnished by (a) the greater extent of white about the anal angle of the hindwing in both sexes, and on the disc of the

forewing in the ♀, (*b*) the reduction of the red anal markings of the underside to two well-separated spots, one in *1b*, the other in 2.

The distribution of this species, so far as indicated by the B.M. series, is :

T. timon prometheus. Sierra Leone.

T. timon timon. Gold Coast, S. Nigeria, Cameroons; Gaboon and Congo.

T. timon orientius. Uganda.

Argiolaus H. H. Druce.

1. *Argiolaus gabunica* sp. nov. (Pls. X and XI, fig. 8.)

♂. *Upperside*, deep blue, without any trace of green; on the forewing filling the cell and reaching costa almost as far as cell-apex except for a very narrow line, only just entering base of area 3, filling half area 2 and reaching in area 1*b* to 1 mm. from margin; on hindwing reaching vein 7 almost throughout its length, and vein 1*b* except distally, enclosing a round black submarginal spot in area 2, invaded distally by a black triangular submarginal in 1*c*, and separated throughout from margin only by a very narrow black line; anal lobe red with small black dot at extremity; oval androconial patch dull dark brown, not reaching lower margin of cell; abdominal and costal areas grey-brown.

Underside white, forewing with costal edge and termen greyish ochreous, apex faintly suffused same colour; no markings; hair-pencil black. Hindwing with fine dark brown anteciliary line; submarginal line commencing as an elongate orange spot in 6, thence narrower and grey-brown to vein 3, where swollen to a large orange patch not touching termen but just reaching discal line at vein 2 and enclosing an intensely black and rather large spot in 2, thence closely approximated to the discal line and in colour orange, expanding and becoming redder when encircling the black spot on the lobe; the later separated from termen by white, partially surrounded by scattered violet scales; submarginal line is continued from the upper edge of lobe as far as extremity of vein 1*a*; discal line very fine, brownish, interrupted at each vein, commencing before extremity of vein 8, in areas 3-6 about four times as far from submarginal line as that is from margin, but slightly convergent to submarginal line and closely approximate to it in areas 1*a*, 1*b* and 1*c* and there co-extensive with it.

Frons black, white-edged. Legs white. Forewing with 12 veins.

Length of forewing, 19 mm.

Habitat. Gaboon. TYPE ♂, ex Crowley Coll. (B.M. Type No. Rh. 318), unique.

In the key to *Iolaus* (subg. *Argiolaus*) given by Aurivillius in Seitz (vol. xiii, p. 392) this specimen runs out to *julus* and *menas*. From both of these it can be separated by the much deeper blue of the upperside, the largely orange-coloured submarginal line on underside of hindwing by means of which the anal spot and the spot in area 2 are joined (these are divided in *julus* and *menas*), and by the inclusion in the latter of a large black spot absent in both the other species. The underside markings of this ♂ agree in the main with those of 6 ♀♀ of *aelianus* in the B.M., and I had at one time regarded it as the hitherto unrecognised ♂ of that species. But whereas in *aelianus* ♀♀ the discal and submarginal lines on the underside of the hindwing are confluent towards the costa, in the ♂ of *gabunica* they are widely separated, a difference which, in the present state of our knowledge, would seem to preclude their union as sexes of a single species.

2. *Argiolaus jamesoni* Druce.(a) *A. jamesoni jamesoni* Druce.

♀. The blue of the upperside is the same as in *A. aelianus* ♀, but its outer edge is more ragged on the forewing, where also it invades the bases of areas 4 and 5 (in *aelianus* it just invades the base of area 4 only). On the hindwing upperside no trace of a discal line is present except in 1c, large black marginal spots, almost contiguous, are present in areas 1c, 2, 3 and 4, and between these and the heavy black anteciliar line (especially in areas 1c and 2) there is considerable white scaling; the orange spot above the black anal spot is markedly triangular.

Underside faintly creamy. Forewing with no marking before the prominent, thick, submarginal line which, from vein 1 to vein 3, is orange, thence dark brown and, from vein 4, fused with the similarly coloured apical area; the latter dark-brown area extends to just below vein 2, tapering to a point. On the hindwing the discal black line is as in the ♂; the submarginal line is similar, but much thicker, from vein 7 to 6 orange, from 6 to 4 mainly dark brown, but much expanded and orange at the vein, between 4 and 3 expanded to form a very large quadrate orange spot that encloses an intensely black spot larger than the anal one, orange and curved from 2 to 1c, in 1b also orange and expanded to fuse with the red mark surmounting the black anal spot, thence to inner margin very narrow and black.

Neallotype ♀ from "Cameroons" (B.M. Type No. Rh. 335), and one other.

The feature by which the female of *A. jamesoni* is most easily recognised consists of the orange expansions of the submarginal line on the underside of the hindwing, a character shown also in the ♂, but more obvious in the western than in the eastern subspecies.

(b) *A. jamesoni entebbeae* ssp. nov. (Pls. X, XI, figs. 6 ♂, 7 ♀).

♂. Differs from *A. jamesoni jamesoni* by its smaller size—forewing length 19 mm. as compared with 22 mm.—and pure white underside ground-colour. On the hindwing upperside the blue extends into area 6 only as a small triangular patch, whereas in *jamesoni jamesoni* it extends broadly across this area to reach vein 7; the apex of hindwing is in consequence rather more widely black than typically; androconial patch extending barely halfway across cell.

♀. *Upperside* differs from the typical ♀ in having on the hindwing a faintly indicated discal line and rather smaller black marginal spots. On the *underside* the submarginal band is orange on the forewing to above vein 3 and on the hindwing completely orange.

Habitat. Uganda, Entebbe, 1-11.ix.1911 (*S. A. Neave*), TYPE ♂ (B.M. Type No. Rh. 320) and 2 others, all males; Bopoto, Upper Congo (Rev. R. Smith), (TYPE ♀), in Tring Museum.

The discal line on the hindwing underside in *A. jamesoni* is obsolescent, consisting of a series of short internervular lines running parallel with the margin and at a distance of about 3 mm. from it. Closely approximated to this, and therefore some distance removed from the margin, runs a strongly developed *completely orange submarginal line*. This is a very distinctive feature of the species and one of considerable value for identification purposes. The underside

ground-colour of the type-specimen of *jamesoni* is creamy; the white along the costa of the forewing on the upperside is much exaggerated in Druce's figure, consisting really of a few scattered white scales amongst many others that are blue.

3. *Argiolaus parasilanus* Rebel.

(a) *A. parasilanus divaricatus* ssp. nov. (Pls. X, XI, figs. 4 ♂, 5 ♀.)

♂. *Upperside*, rather pale greenish, faintly shining blue. Forewing: area 12 with a few pale greenish scales at base, then hoary grey, shading into the black of remainder of costal area, apex and termen; blue extending over anterior cell edge only as far as vein 12, barely into base of area 5, rather more in area 4, occupying basal two-fifths of area 3 and three-fifths of area 2, in 1b reaching to 2 mm. from termen; cilia dark brown. Hindwing: the circular shining dark brown sex-patch extends to lower edge of cell, it is centrally lighter brown; abdominal area and costa broadly dark grey, the latter extending, and becoming black rather broadly (at least 1 mm.) to vein 4, thence more narrowly to anal lobe; the blue area extends broadly (5 mm.) across area 6 to reach vein 7 throughout its breadth; a submarginal black dot in area 2 and another larger and triangular in 1c; anal lobe red, black at its extremity; cilia white, basally grey.

Underside, creamy, with faint ochreous tinge. Forewing very slightly infuscate along costa, termen and at apex; a prominent but fine dark brown discal line from vein 7 to vein 1, distant 5 mm. from termen at vein 7, 3 mm. at vein 2, slightly curved, an ill-defined much interrupted submarginal dark line nearer to margin than to discal line, and an extremely fine light brown anteciliar line; cilia light grey proximally, darker distally; hair-pencil black. Hindwing: discal line perfectly straight from its origin at vein 8 (at 2 mm. from extremity) to centre of area 1c where, at a point 1 mm. distant from submarginal line, it turns to run parallel with inner margin to vein 1a; submarginal line well-developed, conspicuous, orange, in an even curve from vein 7 (1 mm. from margin) to inner margin just above lobe, slightly expanded distally first in area 2, where it bears a minute black point on its outer edge, and then again in 1b; a fine black anteciliar line; lobe crimson, surrounded inwardly by a ring of violet scales and enclosing a black spot at its extremity.

♀. *Upperside*, pale but bright powdery blue, most intense towards the bases of the wings. Forewings: the boundaries of the blue area exactly in the male; faintly whitish about the cell-end. Hindwing: the black border much wider than in ♂, 3 mm. at vein 6, 1 mm. at vein 5, expanding again in 1c; the discal line of underside repeated above in the form of short black lines in areas 1c to 5.

Underside exactly as in the ♂, except for a fine and very faint line along forewing discocellulars.

Frons black, white-edged. Legs white.

Length of forewing, ♂ and ♀ 19 mm.

Habitat. Kenya Colony: Nandi Plateau, 5,700–6,200 feet, May 30–June 4, 1911 (*S. A. Neave*), TYPE ♂ (B.M. Type No. Rh. 317); Yala R., S. edge Kakumga Forest, 4,800–5,300 feet, May 21–28, 1911 (*S. A. Neave*), TYPE ♀ (B.M. Type No. Rh. 319); Uganda, Buddu, W. shore L. Victoria Nyanza, 3,700 feet, Sept. 19–25, 1911 (*S. A. Neave*), 1 ♀.

In the West Coast region occurs a local race of this species that may be known as :

(b) **A. parasilanus mabillei** ssp. nov. (Pls. X, XI, figs. 2 ♂, 3 ♀.)

♂♀. Differ from *parasilanus divaricatus* in their slightly larger size, much deeper blue upperside and more ochreous undersides. The ♂ has a larger central light brown patch in the androconial area on the hindwing; the female is devoid of any trace of white and is more broadly black bordered. On the *underside* the discal line on the hindwing is slightly less divergent from the submarginal, and the latter is considerably expanded in area 2, there almost enclosing a much larger black spot; and above the lobe, and between these two points it partially reaches the discal line.

Habitat. Portuguese Congo, Landana, April–May (ex coll. Oberthür ex coll. Mabille), TYPE ♂ (B.M. Type No. Rh. 321); “Afr. occ.” (ex coll. Oberthür, ex coll. Mabille), TYPE ♀ (B.M. Type No. Rh. 322); Gaboon, 1 ♂ (ex coll. Oberthür).

The prominent orange submarginal line and the strongly divergent discal line on the hindwing underside should serve to distinguish this species at once. It is most closely related to *A. pancperata* Druce, differing from that species principally in the direction of the markings just mentioned.

(c) **A. parasilanus parasilanus** Rebel (Pls. X, XI, fig. 1 ♂.)

Since the above was written Professor Rebel has most kindly lent me the type of his *I. parasilanus* for examination, and I find that it is not only closely related, as I expected, to what I had called *divaricatus*, but actually conspecific with it. It may be conveniently compared with the description of ssp. *divaricatus*, the following differences being noted :

Upperside, the blue rather deeper in tone, almost as in ssp. *mabillei*, rather less extensive anteriorly on the forewing and decidedly so on hindwing; black margin of hindwing 3 mm. wide at vein 6, about twice as wide throughout as in ssp. *divaricatus*; the blue area only occupying a triangular area at base of area 6; androconial area not reaching lower edge of cell, 4.5 mm. long (6 mm. long in *divaricatus*). *Underside* purer white; discal lines of both wings thicker, browner; submarginal line of forewing thicker, evenly curved, orange; submarginal line of hindwing more widely separated from margin, orange; spot in area 2 very slightly large than in *divaricatus*, red, with only a few black scales.

That part of Aurivillius's key to *Argiolaus* which includes the species so far dealt with may be amended as follows :

o Upperside coloration blue, sometimes slightly greenish.

§ Blue coloration extending fully into area 12.

‡ Hw. underside without submarginal line, discal line faint.

1. Upperside colour bright sky-blue without green shimmer *menas*

2. Upperside colour darker, at certain angles with strong
green shimmer *julus*

‡‡ Submarginal line present.

1. Submarginal line complete, orange, very closely
approximate to discal line *jamesoni*

2. Same line grey, or only orange in area 6 and from area 2 to anal lobe, well separated from discal line.

(a) Upperside colour bright sky-blue without green shimmer, no submarginal spot on hw. ups. *menas*

(b) Upperside colour darker, at certain angles with strong green shimmer; hw. ups. with submarginal black spots *gabunica*

§§ Blue colour not extending broadly into area 12, hw. with black submarginal spots in 1b and 2.

1. Hw. underside with discal and submarginal lines diverging widely towards costa, submarginal line orange *parasilanus*

2. Same lines subparallel; submarginal line grey (rarely orange) between veins 3 and 7.

(a) Thick black marginal line on hw. underside from anal lobe to vein 3 *schultzei*

(b) At most some dusky subfufusion in this region *paneperata*

oo Upperside coloration distinctly green *calisto*

4. *Argiolaus poecilaon* sp. nov. (Pls. X, XI, fig. 9♂.)

♂. *Upperside* as in *A. laonides* but practically devoid of any tinge of green; outline of blue area on forewings as in *laonides*, but approaching the termen rather more closely in area 1a. The hindwing is without black submarginal spot across vein 2, and the blue extends broadly to vein 7, leaving a wide (2 mm.) black apical mark; androconial area accordingly restricted and not extending beyond the end of the cell.

Underside as in *laonides* except that the forewing is without the broad blackish suffusion that occupies areas 1a and 1b in that species, and that on the hindwing the black spots in area 2 and on the anal lobe are reduced to mere dots, the orange that in *laonides* surrounds and connects them being confined to a faint circle round each spot.

♀. *Upperside* lighter blue than in ♂, especially distally. On the forewing the blue occupies the same area as in the ♂. On the hindwing its anterior margin is evenly rounded and barely extends above vein 6; a dark and fairly wide submarginal line from anal lobe to vein 3. *Underside* like that of the ♂, but the forewing marginal band rather wider towards apex, and the submarginal orange line on the hindwing more prominent. (This female is in better condition than either of the males.)

Frons black, edges white. Legs grey, not banded.

Length of forewing, 15-17 mm. (♂ and ♀).

Habitat. Uganda, Entebbe, 1-11.ix.1911 (*S. A. Neave*), 2 ♂♂, including TYPE (B.M. Type No. Rh. 323); Entebbe, Sept. 1900 (Allotype ♀ in J. J. Joicey coll.).

It is possible to regard this as an eastern subspecies of *A. laonides*, but the entire absence of the black suffusion in areas 1a and 1b of the underside of the forewing, so prominent a feature of *laonides*, seems rather to militate against this opinion.

5. *Argiolaus catori* B. Baker.(a) *A. catori catori* B. Baker (Pls. X, XI, fig. 10 ♀.)

♀. Similar to the female of *ssp. cottoni* (see below) except that the forewing blue area is devoid of white suffusion, the general tone of the blue is rather darker, the black spots in 1c (marginal) and 2 (submarginal), the former not present in *cottoni*, are here large and prominent, almost touching. On the *underside* of the forewing the apical area is noticeably more darkened than in the ♂ or in *cottoni*, being suggestive of *laon* or *laonides*, and discal and submarginal lines are both present or indicated, both grey brown in colour, and very closely approximated; on the hindwing the markings are as in the male, except that the discal line is rather better developed and the spot in area 2 is larger and inclined to be orange rather than red—in 2 specimens from Sierra Leone it includes a black spot.

Habitat. Ivory Coast (*Cremer*), 1918 (ex Oberthür coll.); (Neallotype ♀, B.M. Type No. Rh. 325). Also in B.M. from Sierra Leone (2 ♀♀ ex Hewitson coll., labelled *belli*), and "W. Africa" (1 ♀ ex Godman and Salvin coll.).

The females of *A. catori catori*, chiefly on account of the markings of the underside, are extraordinarily suggestive of the ♀ of *E. laon*, with which indeed they had formerly been confused in the B.M. The uppersides are quite different. The two females from Sierra Leone bear prominent black spots in the orange marks on the hindwing undersides in area 2; in this respect they are atypical, but the four females of *ssp. cottoni* available (see below) exhibit the same variation.

A. catori catori is represented in the Cameroons, the Congo and Uganda by the subspecies *cottoni* B. Baker. *Cottoni* differs from *catori* in having a much wider black apical area to the forewing above, and a complete and fairly strongly marked discal line on the underside of the hindwing. The females may be characterised briefly as follows:

(b) *A. catori cottoni* B. Baker (Pls. X, XI, fig. 11 ♀.)

♀. *Upperside*, forewing black with a large powdery blue area (basally greenish) occupying the cell (except antero-distally), $\frac{1}{4}$ of area 3, $\frac{1}{2}$ area 2, area 1b to within 2 mm. and 1a to within 3 mm. of termen; in areas 3, 2, the neighbouring part of 1b and the distal half of cell mainly replaced by white. Hindwing powdery grey-blue, the costa to vein 5 and upper edge of cell, the abdominal area and part of 1c grey; a diffuse dark submarginal spot in 2; indications of a faint discal line placed at little inward of that on underside; and lobe black, with a few green scales. *Underside* as in ♂.

Neallotype, ♀, Uganda, Toro, Daro or Durro Forest, 4,000–4,500 feet, 25–29 Oct., 1911 (*S. A. Neave*) (B.M. Type No. Rh. 324). Two other ♀♀ and 1 ♂ from same locality also, and 1 ♀ from Katanga, Lunganda R., 3,000 feet, 15.xi. 1903 (*H. Cookson*).

6. *Argiolaus lukabas* H. H. Druce.

Iolaus julius Staud., *Iris*, iv, p. 146, 1891 (July).

Argiolaus lekanion H. H. Druce, *Ann. Mag. N.H.* (6), viii, p. 144, 1891 (Aug.).

Through the kindness of Mr. J. J. Joiecy I have been able to examine the types of *lukabas* and *lekanion* and have come to the conclusion that both are referable to the species described by Staudinger as *julius*. Both types are in

very poor condition, tattered and rubbed, and in neither is the red submarginal line on the hindwing underside visible, which may be the case even in fresh specimens. The type of *lukabas* (from Gambia) differs from all the other ♂♂ of this species I have seen in having the red spot in area 2 of hindwing underside minute. The four black submarginal spots (upperside) to which Druce refers may be present, or reduced to a single spot in 1c, both of which conditions, together with the intermediate stages, are shown in Sierra Leone males.

Further material from Gambia is needed before it can be decided whether the species is divisible into two subspecies.

7. *Argiolaus silas* Westw.

This widely distributed and comparatively common species has a number of well-marked subspecies.

(a) *A. silas silas* Westw. (*Thecla nega* H.-S.).

This is the race of the extreme south. In the ♂ there is, in all the material available, a well-developed red submarginal spot on the upperside of the hindwing in area 2. In the ♀ the hindwing has the red submarginal band extending broadly to vein 6 as a rule, but sometimes reduced in width in areas 4 and 5, never abruptly cut off at vein 3. The red submarginal line of the hindwing is very frequently carried forward on the forewing as well in both sexes (29 examples out of 37 show this feature).

Cape Colony, Transvaal and Natal.

(b) *A. silas silarus* H. H. Druce.

The type came from Delagoa Bay. In the males the submarginal spot in area 2 is black. The ground-colour of the females, as in *A. silas silas*, is blue with a slight whitening of the area about the cell-apex; the submarginal red band ceases abruptly at vein 3.

Southern Port. E. Africa and Mashonaland.

Mt. Mlanje in Nyasaland produces a remarkably interesting mixed race. The 5 males in the B.M. are all slightly different, having red or black submarginal spots or none at all. The females, however, fall into three well-marked groups: 3 are like typical *silarus* (March, April and May), 3 like typical *lalos* (April, May, June), and the 7th not separable from typical *silas* (June). Any possibility of considering these three forms as seasonal variations is precluded by the recorded times of occurrence. Their existence side by side without intermediates (the series is, of course, only a very short one, however) suggests that they may represent three distinct species; it is more probable, however, that the controlling factors that elsewhere maintain the distinctive features of the three subspecies are lacking at Mt. Mlanje.

(c) *A. silas lasius* Suffert.

The name *lasius* was given originally to an entirely blue female (*i.e.* without white discal area) from the north end of L. Nyasa. Females so coloured occur, to the exclusion of the other forms, from L. Nyasa northward through the interior of Tanganyika Territory into the Kavirondo district of Kenya Colony.

Kavirondo to N. Lake Nyasa; ? N. Rhodesia.

(d) *A. silas lalos* H. H. Druce.

A very well-marked subspecies, confined principally to the coast belt, and characterised by the mainly white upperside of the female. As a rule even areas 3 to 5 of the hindwing upperside are submarginally more or less white. In the B.M. from Zanzibar, Mombasa, Uehweni (nr. Witu), nr. Maungu, Kibwezi and Ndara Hills.

Kenya and Tanganyika coastal regions.

(e) *A. silas crawshayi* Butler.

The ♀ type is dark blue with the submarginal red spots of the hindwing confined to areas 1e and 2 and quite small. It may represent a distinct subspecies restricted to Mt. Elgon and the Kikuyu escarpment; certainly it differs markedly from the ♀♀ of *A. silas lalos* and *A. silas lasius*.

Kikuyu and Mt. Elgon.

(f) *A. silas ituriensis* Joicey and Talbot.

Characterised at once by the yellow submarginal lines of the underside. Occurs also in Uganda (Entebbe) and Kenya Colony (Yala River).

Ituri, Uganda, Kenya.

8. *Argiolaus trimeni* Walleng.

Iolaus anesius Hulst. *Rev. Zool. Afr.*, xii, p. 177, 1924.

The range of this species, the only *Argiolaus* with the frons yellow, extends considerably beyond Transvaal. It is in the B.M. from Mashonaland (7 ♂♂), Natal (1 ♂), N.W. Rhodesia (1 ♂, 1 ♀), Katanga (1 ♀), and L. Tanganyika (1 ♂). Trimen's figure of the female is extraordinarily good.

I have little doubt that Hulstaert's *I. anesius* is the ♀ of *trimeni*. He mentions a red spot on the *upperside* of the hindwing in area 2; the only other *Iolaus* (s.l.) with orange frons that shows this feature, so far as I know, is *farquharsoni*, but the underside markings of that species do not agree with Hulstaert's description.

IOLAUS.***Iolaus carina* Hew.**

According to the key given by Aurivillius in Seitz (vol. xiii, p. 390), this species correctly remains in *Iolaus* as defined by Druce, and is not an *Epamera*. It is very closely allied to *I. bolissus* Hew. It falls in the fifth section of *Iolaus* in Aurivillius's arrangement.

EPAMERA.**1. *Epamera maesa* Hew. (Pls. X, XI, fig. 12 ♂.)**

♂. Forewing with only eleven veins. Frons black with broad white sides. Palpi white, the 3rd segment, except narrowly beneath, and tip of 2nd segment above, black. Legs white, narrowly but conspicuously black banded. Forewing hair-pencil, on inner margin beneath, black. Hindwing androconial patch dark brown to golden brown, strongly developed, set in a large oval dark shining area that just reaches lower edge of cell and to 4 mm. from margin at vein 6.

Upperside rather dark but brilliant shining blue, of exactly the same tint and texture as in *Iolaus eurisus*. Forewing with costal area, and apex broadly, black, so that the blue area is restricted to the cell, which it completely fills, to a minute patch at the base of area 3, to the basal half of 2, and the whole of 1a and 1b except for a very narrow black margin; the outer edge of the blue area is thus an almost straight line running from cell-apex to just below extremity of vein 2. Cilia black. Hindwing abdominal area and costal area (above vein 7) dark grey-brown; margin very narrowly black, expanding slightly in area 6; lobe occupied distally by a white crescent above which, against abdominal margin, is a small black dot, separated from the white by metallic blue scales, and surmounted by a small red mark. Tails damaged, blue-black, edged with white. Cilia black, grey-tipped posteriorly.

Underside white. Forewing with the whole of areas 1a and 1b shining pale greyish but with an oval black cloud centrally in the basal half of 1b; termen broadly dark brown, 5 mm. wide at costa to 2.5 mm. at vein 2, thence more narrowly and less clearly to vein 1; cilia the same colour. Hindwing: the terminal brown border is continued to vein 4, but contains some pale scaling, and is less solid; its inner edge, the submarginal line, then forms a large irregular crimson spot in 2 bearing a minute black dot externally, is absent in 1c, forms a large irregular crimson spot in 1b above the lobe-spot, and is continued as a fine black line to end on inner margin at vein 1a; a continuous but irregular fine black discal line runs from vein 1a to vein 2 and is represented in areas 2 and 3 by two fine lines; markings of lobe as on upperside, but connected above as mentioned with submarginal red spot, about and upon which there is considerable metallic blue scaling; some grey marginal shading in areas 1c and 2; anteciliary line and cilia brown from costa to vein 4, the former then black, the cilia white for the most part.

Length of forewing, 19 mm.

Neallotype, ♂, captured Oct. 1898 by Capt. Stevens, and one other, both from Sierra Leone, in the Tring Museum. The species also occurs in the Gold Coast, Nigeria and Uganda.

It is remarkable that the ♂ of this species, described by Hewitson in 1863, should not have been recognised before. Aurivillius in Seitz tentatively placed the species in his Group 2 of *Iolaus* (= *Argiolaus* Druce), but the characters given above show it to belong to his Group 3, of which, presumably, owing to the red markings at the anal lobe, it would form a separate section. It falls into *Epamera* in Druce's scheme.

2. *Epamera laon* Hew.

Iolaus adamsi Lathy, *Trans. Ent. Soc.*, p. 199 (1903). Nigeria.

Iolaus emma Suff., *Iris*, xvii, p. 65 (1904). Togoland.

Iolaus coelestis B. Baker, *Ann. Mag. N.H.* (9), xvii, p. 394 (1926). Cameroons.

Bethune Baker's type-specimen of *coelestis* agrees exactly with the figure of the type of *I. emma* given by Druce in *Ill. Afr. Lyc.*, pl. vii, figs. 2, 2A. The type of *adamsi*, as Lathy himself remarks, only differs from *laon* by the absence of the dark borders on the underside. As a matter of fact this difference is mainly sexual; none of the 8 ♂♂ in the B.M. has so pronounced a border as any of the females. Moreover Lathy's type is in poor condition and may have had the

margins originally darker than they now appear to be. I consider none of these names worth even varietal rank.

(a) *E. laon laon* occurs in Sierra Leone, Gold Coast, Ivory Coast, Nigeria and the Camerouns. In Uganda it is replaced by :

(b) ***E. laon stenogrammica*** ssp. nov. (Pls. X, XI, fig. 13 ♂.)

♂. *Upperside* rather paler blue than in *E. laon laon*. On the forewing the blue extends more broadly in area 1b to within 2 mm. of termen, and on the hindwing is more extensive apically, reaching, in areas 5 and 6, to within 3 mm. of margin (5-6 mm. in *laon laon*). The submarginal black spots in 1c and 2 not half so wide as in *laon laon*, diffuse, and much invaded by white sealing, especially outwardly; the discal line represented by quite narrow black lines in 1c and 2; anal lobe-spot small, orange, enclosing a very small black dot. *Underside*, forewing dark border less heavy than in *laon laon*, the discal line more strongly curved. Hindwing as in *laon laon*, except that the orange markings are rather reduced.

Length of forewing, 16.5 mm. (in type of *laon*, 18.5 mm.)

Habitat. Uganda, N.W. shores Victoria Nyanza, 3,800-3,900 feet, 12-15, ix. 1911, 2 ♂♂ (*S. A. Neave*). (B.M. Type No. Rh. 326.)

3. ***Epamera iasis*** Hew.

Additional synonyms are *E. belli* Hew. and *E. sibella* Druce, the former based upon a ♀ from Sherborough Is. off the coast of Sierra Leone, the latter on a ♂ from Bitje, Ja River, Camerouns. The type of *belli* is devoid of white on the disc of the forewing, but this, though unusual, can be matched by several females in the B.M. from the mainland; on the hindwing the blue extends practically to the margin in areas 3 and 4. The underside is that of a perfectly normal female *iasis*. It is not very remarkable that others should have failed to recognise from Hewitson's description and figure that his *belli* was merely the ♀ of his own *iasis*. The name has been in consequence wrongly applied to the species for which *pollux* Auriv. is now again available.

Druce compared his *sibella* with *bellina*, stating, however, that the frons was yellow as in *iasis*. Mr. J. J. Joicey has kindly allowed me to examine the type, and I find it quite impossible to distinguish it specifically from *iasis*. Druce's figure (P.Z.S., 1910, pl. 25) is poor. The blue of the upperside is too dull; the discal line on the hindwing underside is unduly emphasised, that of the forewing, which is traceable, is not indicated at all; the large pale shining patch on the hindwing is shown much too small, and the black anal spot is present, though rubbed; no indication is given of the metallic sealing upon the red markings on the underside of the same wing. In a long series of *iasis* in the B.M. the depth of upperside colour, extent of shining patch, and faintness of underside markings can all be matched readily, and all intergrades exist.

4. ***Epamera hemicyanus*** E. M. Sharpe.

(a) ***E. hemicyanus hemicyanus*** E. M. Sharpe.

Unfortunately I have not been able to discover the whereabouts of the type-specimen of this species, nor have I seen any representative of it from Uganda. Joicey and Talbot described their *Epamera pater* without reference to *hemicyanus*, comparing it in the main with *barnsi* and *mirabilis*. Their type agrees so well with Miss Sharpe's description that I have no doubt the two are conspecific.

(b) **E. hemicyanus kumboae** B. Baker.

Epamera kumboae B. Baker was described from a ♂ from Kumbo, Nigeria. It differs from the type of *pater* (see above) in that (1) the blue of the forewing at vein 1 is only 2 mm. distant from the termen; (2) the dark anterior area of the hindwing extends as a triangular wedge along the margin as far as vein 4; (3) the dark marginal shading on the underside of the forewing is absent, together with the submarginal line; (4) the orange markings of the hindwing are much reduced, the spot in area 2 not being connected with the lobe spot. It appears to be a subspecies of *hemicyanus*.

(c) **E. hemicyanus kamerunica** subsp. nov. (Pls. X, XI, fig. 16 ♂.)

In the Cameroons, at Bitje on the Ja River, a third subspecies occurs which resembles *hemicyanus hemicyanus* except that (1) the blue of the forewing at vein 1 is 4 mm. distant from the termen; (2) the dark anterior area of the hindwing extends as a wedge as far as vein 3; (3) the orange markings of the underside are as in *hemicyanus kumboae*. The holotype ♂, taken during June–July 1909 (dry season) is in the B.M. (Adams coll.). Another ♂ in B.M. dated November, 1 ♂ in Tring Museum Oct.–Nov. and another Jan.–March, are all from Bitje, Ja River.

5. **Epamera farquharsoni** B. Baker.

This species is readily distinguished by the extreme expansion of the inner margin of the forewing, which far exceeds that of any other species in the genus. The wide black outer half of the forewing is also characteristic. Curiously, Bethune Baker omits all reference to the former character in his description of the insect. The tibiae are white, laterally blackened, not prominently banded with black and white as is usual in this group, the tarsi alone being banded, very delicately; in this feature the species resembles *scintillans* and *bolissus*, *cytaeis* and *flavilinea*.

6. **Epamera bansana yalae** sp. nov. (Pls. X, XI, figs. 17 ♂, 18 ♀.)

♂. *Upperside*, forewing black, the rather pale chalky blue area reaching in the cell to origin of vein 2 only, not filling cell-apex, nor extending into costal area, on the disc only reaching vein 2 near its base, its outer edge running thence to vein 1 at 2 mm. from termen. Hindwing blue of same colour, barely reaching vein 6, but extending up to anteciliary line between vein 5 and anal lobe, thus including the submarginal dusky line; the androconial area occupies about half the costal length, but reaches neither the base of the wing nor the lower edge of the cell; submarginal line thickened to form an oval black spot in area 1c; lobe half orange, half black overlaid with green scales; a short tail at vein 3. *Underside* very pale grey. Forewing with fine brown line at cell-end; brown discal line from 9 to vein 2, straight, rather nearer to cell-end than to termen; a curved, finer submarginal line from vein 7 to vein 2, grey-brown; anteciliary line grey-brown; cilia white; hair-pencil black. Hindwing: a line at cell-end, as on forewing; discal line brown from vein 8, just before extremity, where it commences, to vein 2, then black, somewhat concave between vein 8 and vein 6, curved strongly in area 1c and then almost straight to inner margin; submarginal line rather irregular, grey-brown from costa to vein 3, thence swollen to form orange spot in area 2 (outwardly bearing a black dot), broken in 1c, then orange and

deflected to touch lobe-spot before reaching inner margin; lobe-spot black, inwardly orange, heavily dusted with metallic scales; anteciliar line black, preceded by a greyish shade; cilia white.

Frons orange, ventrally white. Legs conspicuously black-and-white banded.

♀. *Upperside*, the blue area much fainter, less heavily scaled than in the ♂, and extending just beyond vein 4 so as to include the bases of areas 2 and 3; this additional area is, however, mainly white. Hindwing costal and abdominal areas rather light grey-brown, the former extending to vein 5 and darkest where crossed by the extremities of the discal and submarginal lines; discal lines elsewhere really barely visible except by transparency; submarginal line large and rather diffuse, followed by a white line and a marginal diffuse dark line of its own width; anteciliar line black. The anal portion of the wing is missing. *Underside* as in the ♂ in so far as the condition of the type permits comparison.

Habitat. Kenya Colony, Yala R., S. edge of Kakunga Forest, 4,800–5,300 feet, 21–28 May, 1911 (*S. A. Neave*) (B.M. Types No. Rh. 328 ♂ and 332 ♀); Mt. Kokanjero, S.W. of Elgon, 6,000–6,400 feet, 7–9, Aug. 1911, 3 ♀♀ (*S. A. Neave*); Nandi Plateau, 5,700–6,200 feet, 30 May–4 June, 1911 (*S. A. Neave*); Masai Reserve, nr. Mara River, 25.v.1913, 1 ♀ (*A. O. Luckman*).

Bethune Baker's female type of *E. bansana bansana* came from the Bauso Mts. in the Cameroons at an altitude of 6,000 feet. Its most striking feature is the width of the discal line on the underside. In this respect it is approached by one of the females in the B.M. from Mt. Kokanjero (S.W. of Elgon, Kenya Colony), but the other two females from the same locality and the female type of *yalae* from the Yala River, like the ♂ described above and two other males from the Nandi plateau, all have quite narrow discal lines. The resemblance of this species, in the female, to *I. bolissus* is very striking, as pointed out by Bethune Baker, but in the three species of true *Iolaus* (*eurisus*, *bolissus* and *carina*) the orange and black spot on the hindwing underside in area 2 touches the margin, whereas in *bandana* it is considerably removed from it.

7. *Epamera violacea* sp. nov. (Pls. X, XI, figs. 19 ♂, 20 ♀.)

♂. *Upperside*, hindwing and basal half of forewing rather soft, powdery, slightly violaceous blue, almost of the same shade as that of *E. sidus*, but slightly deeper and duller; remainder black or dark grey. *Forewing* blue area occupies basal half of area 11, the cell except a small apical portion, a small triangle at base of 2, the whole of area 1b except a roughly L-shaped portion against the margin and vein 2, and the whole of area 1a; cilia dark grey. *Hindwing* costal and abdominal areas grey-brown; androconial patch small, pale, about 2 mm. in diameter, set in a large darker glossy area that extends to the base, but on vein 5 is 6–7 mm. distant from margin; no discal line or submarginal line; marginal line very close to anteciliar line, represented in area 1c by a prominent oval black spot, in area 6 and 7 by dark shades against the apex, and between these points very faintly indicated only; lobe mainly white, black spot small and inconspicuous because overlaid by metallic scales, orange rather larger, but not conspicuous; anteciliar line black; cilia pale grey.

Underside white, inclined rather to greyish than to cream-colour. *Forewing* with well-marked cell bar and discal line, both slightly ochreous brown, the latter running straight from area 9 (just before extremity of vein 10) to the middle of

vein 2, then curving inwards and ending on vein 1; submarginal line rather darker, less well defined, interrupted at each vein, placed slightly nearer to the termen than to discal line and extending from vein 7 to vein 1; between the submarginal line and the termen the ground colour is somewhat greyer than elsewhere; anteciliar line grey-brown, extremely fine; cilia shining grey; inner marginal hair-tuft intensely black and lying in a pearly white area. *Hindwing* cell-bar as on forewing; discal line from costa immediately before extremity of vein 8, straight and rather thick, ochreous-brown, as far as middle of vein 3, thence narrower and wavy, and straight in general direction to the middle line of area 1c, where it becomes thread-like and black and turns to end on vein 1a just before its extremity; submarginal line rather darker (as on forewing), arising on costa midway between discal line and apex, and converging almost to meet discal line in 1c, about vein 1b becoming orange, in area 1b deflected to touch lobe-spot, thence more prominent than elsewhere, orange, running along inner margin to terminate at vein 1a; a minute red spot on outer edge of submarginal line in area 2; between submarginal line and termen some grey shading, especially in area 1c; lobe-spot small, red, outwardly black, metallic-scaled, separated from margin outwardly by white triangular space; anteciliar line very fine, black; cilia pearly white; tails black, white-edged.

♀. *Upperside* distinctly violaceous. Forewing blue area as in ♂, but with the addition of a whitish blue diffuse extension into the bases of areas 2 (half), 3 (a third) and 4 (a small patch basally only). *Hindwing* costal area very pale and extending fully to vein 6; discal line represented in areas 6 and 7 by large grey-brown spots, elsewhere indicated mainly by transparency; submarginal line strongly developed, spots large, especially in areas 5 and 6; a strong marginal series of oblong spots, developed in area 1c into a large prominent oval black spot, and elsewhere most prominent in areas 5 and 6; otherwise as in ♂. *Underside* markings and colour as in ♂.

Frons orange; legs white, only very faintly banded on tibiae and tarsi with dark grey. Length of forewing, ♂ 15 mm., ♀ 17 mm.

Habitat. Angola, Pungò Andongo, May and July 1875 (*A. v. Homeyer*), 4 ♂♂, 2 ♀♀ in Tring Museum; Belgian Congo, Tanganyika District, M'pala (Guillemé), 1 ♀, in B.M. Holotype ♂ not dated; female type dated 3.7.75.

This species is closely related to *E. bansana* B. B., with which indeed the single ♀ in the B.M. from M'pala, Tanganyika District, Belgian Congo, had been associated. The discovery of a series of 4 ♂♂ and 2 ♀♀ from Pungo Andongo, Angola, in the Tring Museum, however, clearly establishes it as a good species. The ♂♂ are deeper violaceous blue than those of *E. bansana yalae*, and the blue on the hindwing extends almost up to the costa. The females are readily distinguished by their violaceous tint; they closely resemble those of *E. bakeri* on the upper side, but the under surfaces are quite distinct. On the hindwing underside the straightness of the discal line, the minute size of the crimson rather than orange spot in area 2, and of the lobe-spot, are characters of some use in recognising the species.

In Mr. Joicey's collection there is a ♂ from Zomba (Jan. 1921) and a ♀ from Mt. Mlanje (Feb. 1925), both in Nyasaland, that differ somewhat from Angolan specimens. The differences, however, are slight and not of the same order in both specimens, so that it is not possible to form from them an opinion as to whether or not they represent a local race.

8. **Epamera bakeri** sp. nov. (Pls. X, XI, fig. 21 ♀.)

♀. *Upperside* powdery, rather greyish blue; margins black. Forewing with the blue occupying the whole of the cell (except the extreme apex), the basal third of area 3, basal three-fifths of area 2, and reaching to within 1.5 mm. of termen in area 1b; cilia grey. Hindwing with abdominal area and costal area (broadly) grey-brown: blue extending from base to anteciliar line between vein 1b and vein 6, but only attaining the latter vein in its proximal half; discal black line distant 3 mm. from termen and parallel to it, interrupted at each vein, the lower ends of the portion in areas 2 and 3 directed distad; submarginal spots moderately large, especially in 1c, black, and just separated from the prominent though narrow anteciliar black line by a fine line of the blue ground-colour; lobe mainly white, but with a very small orange spot proximally and some metallic scaling; cilia white.

Underside white. Forewing with a very delicate discal black line from vein 1 to vein 9; an extremely fine anteciliar line; cilia very pale grey. Hindwing discal line very delicate and black, complete, parallel to margins; submarginal line faint, not sharply defined, black from costa to vein 3, then thickened slightly to form a small blood-red spot, in area 1c represented by a few red scales only which connect with the lobe-spot, thence to vein 1a on margin; anteciliar line very sharp and black, between it and submarginal line a little grey shading, especially in 1c; cilia pale grey; lobe as on upperside, but with considerably more red proximally.

Frons orange, narrowly edged with white. Legs not banded.

Length of forewing, 16-17 mm.

Habitat. Port. E. Africa, valley of Kola River, near Mt. Chipirone, 1,500-2,000 feet, 3.iv.1913 (*S. A. Neave*) (Holotype ♀, B.M. Type No. Rh. 333); Rhodesia, Luwumbu valley, Upper Luangwa, 2,500-3,500 feet, 19-26 July 1910 (*S. A. Neave*), 2 ♀♀; Salisbury, 15.vii.1917, 1 ♀.

9. **Epamera bellina** Ploetz.

(a) **Epamera bellina exquisita** ssp. nov. (Pls. X, XI, fig. 14 ♂.)

♂. *Upperside*, the blue of the forewing replaced to some extent by white about the apex of the cell and the bases of areas 2 and 3. On the hindwing the apex is broadly black (almost 3 mm. wide against 1 mm. or less in *bellina bellina*), and the space between the marginal and submarginal black spots in area 1c is completely filled by a square pure white spot. On the underside the apex of the forewing is distinctly cloudy, and the discal and submarginal lines clearly defined; the hindwing discal line is straighter and rather bolder than in *bellina bellina*, and instead of fusing with the red (and black) submarginal spot in area 2 at vein 3 only joins it at vein 2 and is orange in this area, not red; the red and black spot just mentioned is smaller than in the West Coast form.

Habitat. Uganda, S.E. Buddu, Tero Forest, 3,800 feet, 26-30.ix.1911 (*S. A. Neave*), 2 ♂♂, including holotype (B.M. Type No. Rh. 327).

(b) **Epamera bellina maris** ssp. nov. (Pls. X, XI, fig. 15 ♂.)

♂. *Upperside* as in *E. bellina bellina*, except that there is a white area on the forewing and a square pure white spot on the hindwing in area 1c as in *E. bellina exquisita*. *Underside* as in *bellina bellina*.

Described from 2 ♂♂, including Holotype labelled "San Thomé, 1926 (T. A.

Barnes),” both in Tring Museum. There is some doubt as to whether this locality is correct, as the material collected on San Thomé by T. A. Barnes for Mr. J. J. Joicey contained no examples of this species. It is curious that this species should have given rise to a race in San Thomé which, in the development of the white markings of the upperside, exactly resembled the Uganda subspecies, though differing from it on the underside.

10. *Epamera scintillans* Auriv.

The known range of this species can be extended to N. Nigeria (1 ♂ in B.M.), Kenya Colony (Nasisi Hills nr. Mumias, 4,800 feet, 1 ♀, *S. A. Neave*), S. Rhodesia (Umtali, 2 ♂♂, 11-24.ix.1905, *G. A. K. Marshall*) and Mashonaland (Mazoe, 2 ♂♂, 27.xii.1924, *E. W. Lannin*).

11. *Epamera creta* Hew.

Epamera fuscomarginata J. & T., *Bull. Hill Mus.*, i, p. 91 (1921).

The type-specimen of *E. fuscomarginata* differs only from that of *E. creta* in that the blue on the forewing fills only the basal half of the cell, and the wide discal line on the underside of the hindwing is orange up to vein 6. With only the two types available and no other material it is impossible to say whether these differences are subspecific or only individual.

12. *Epamera flavilinea* sp. nov. (Pls. X, XI, fig. 22 ♂.)

♂. *Upperside* deep violaceous blue, sublustrous, the apical half of forewing, and the hindwing marginally very narrowly, black. Forewing basal blue area bounded by vein 12 anteriorly, occupying whole of cell except apex, basal third of area 2, a very small area at base of 3 (a few scales in base of 4 also), and area 1a and 1b to 2 mm. from margin; its outer edge is thus convex from vein 12 to vein 2, concave from vein 3 to middle of area 1b where it is angled to run parallel to the termen; cilia black. Hindwing costal and abdominal areas grey-brown; androconial patch shining grey-brown, narrowly surrounded by black, not extending to wing base and distant, on vein 5, 7 mm. from margin; apex very narrowly black, continuing as a thread-like anteciliar black line to anal lobe; anal lobe prominently orange (as in *cytaeis*) with a small black spot; cilia black, becoming progressively whitened from vein 3 to anal lobe.

Underside as in *cytaeis*, but the discal lines on both wings and the submarginal line on hindwing orange; a prominent orange line across cell-end of forewing; the submarginal line of hindwing; underside more remote from the margin and the black spot in 2, its orange surroundings and those of the anal area all consequently much elongated.

Frons orange. Legs white, tarsi delicately black-banded, tibiae laterally darkened, not banded. Length of forewing, 16 mm.

Habitat. Bitje, Ja River, Cameroons (*G. L. Bates*): Holotype ♂ taken during lesser rains, April-June 1910, and in Tring Museum; another ♂, discoloured, no date, 2,000 feet, ex Bethune-Baker coll. in B.M.

This species is deceptively close to *E. cytaeis* Hew., but can at once be separated from that species by the orange bar at the end of the cell, by the size of the androconial patch. The forewings are shorter, the hindwings more produced and the whole appearance of the insect more delicate than that of *cytaeis*.

13. *Epamera cytaeis* Hew.(a) *E. cytaeis cytaeis* Hew.

From Fernando Po and the Lower Congo, etc.

(b) *E. cytaeis leonis* subsp. nov. (Pls. X, XI, fig. 24 ♂.)

The Sierra Leone subspecies of *cytaeis* is distinguished by the absence of the wide dark, faintly shining area surrounding the androconial patch on the hindwing upperside that is present in the typical subspecies, although it may be represented by a darkening of the blue colour that occupies the area.

1 ♂, Holotype, from Moyamba, Sierra Leone, in B.M. (B.M. Type No. Rh. 334).

(c) *E. cytaeis caerulea* ssp. nov. (Pls. X, XI, fig. 23 ♂.)

In the Kassai district of the Belgian Congo there occurs an insect that, for the present, I can only regard as another subspecies of *E. cytaeis*.

♂. *Upperside* light sky-blue, costa, apex and termen black. On the forewing the outer edge of the blue area is fairly evenly rounded, being faintly concave only where it crosses vein 1; the blue occupies the whole of the cell, most of area 11, the basal half of 10, the basal half of 9, a patch at base of 6, basal third of 5 and 4, half of 3, two-thirds of 2, and the whole of 1a and 1b except a black border varying from 2 mm. wide on vein 2 to 1 mm. on inner margin; cilia black. Hindwing costal and abdominal areas quite light grey; androconial patch light brown, oval 3.5 mm. long, set centrally in rounded dark shining area that extends to lower edge of cell, not quite to base, and is distant almost 6 mm. from margin along vein 5; narrow black apex continued as a fine black anteciliar line to lobe; lobe as in *cytaeis*; cilia pale grey.

Underside only differs from that of *cytaeis* (the type-specimen) in being purer white, having the discal lines finer and blacker and the orange markings somewhat reduced.

Frons orange; legs (missing); length of forewing 18 mm.

1 ♂, Holotype, from Luluaburg, Kassai, Belgian Congo; in Tring Museum.

14. *Epamera aethria* Karsch (Pls. X, XI, fig. 25 ♀.)

Epamera mirabilis H. H. Druce, 1903.

♀. *Upperside* blue area almost cobalt blue, filling the cell except extreme apex, basal fifth of area 3, not quite half of area 2, and reaching in 1c to 2 mm. from termen; it is sharply indented at the angle between vein 4 and cell; cilia dark brown. On the hindwing the blue fills the cell, reaches vein 5 in its outer half and then runs diagonally across the base of area 5, the costa is therefore very broadly black, as well as the abdominal area; between vein 3 and the lobe to whole margin is broadly black to a depth of 2 mm. with some blue scaling centrally; narrow black submarginal spots in 3 and 4; black anteciliar line preceded by a fine white line, which is interrupted at each vein from lobe to vein 5; lobe black with a few green scales and a very minute orange mark proximally; cilia mainly white.

Underside differs from Druce's figure of the ♂ type in having both discal and submarginal lines on forewing (the figure shows only the discal), and a faint line

at cell-end; a narrower and more sharply defined submarginal line on the hindwing, and rather more marginal grey shading.

Frons orange, white ventrally. Legs conspicuously banded.

Neallotype ♀ (B.M. Type No. Rh. 329) from Fernando Po (ex Hewitson coll.), unique.

Aurivillius (in *Seitz*, p. 403) states that *E. mirabilis* only differs from *E. aethria* in lacking the bar at the end of the cell on the forewing beneath. In the type ♂, however, the bar is clearly present though faint. On the other hand Druce's figure of the type of *aethria* (*Ill. Afr. Lycaenidae*, pl. vi) does not show this line. The figure given in *Seitz* (pl. 68h) of *aethria* represents exactly the underside of the type of *mirabilis*, but shows a wider black patch at the apex of the hindwing. I have no doubt, however, that the names are synonymous.

15. *Epamera barbara* Suffert (1904).

Iolus barbara Suffert, *Iris*, xviii, p. 62 (1904); H. H. Druce, *Ill. Afr. Lycaenidae*, pl. vi, figs. 3, 3a, London (1910) (Cameroons, Victoria).

Iolus mildbraedi Schulze, *Ent. Rund.*, xxix, p. 93 (1910); id., *Ergeb.*, 2ten D. Zentral-Afrika. Exp. i, pl. xlix, fig. 11 (1925) (S. Cameroons).

Epamera barnsi Joicey & Talbot, *Bull. Hill. Mus.* i, p. 92, pl. xv (1921) (Congo, Bafwaboli, 60 m. E. of Stanleyville).

Epamera yokoana B. Baker, *Ann. Mag. N.H.* (9), 17, p. 396 (1926) (Cameroons: Yoko).

A photographic figure of both surfaces of the type ♂ of *barbara* was published by H. H. Druce in 1910. With this I have carefully compared the type-specimens of *barnsi* and *yokoana*, and the published figure of the type of *mildbraedi*. There appears to be no means of distinguishing the uppersides of the four named forms. On the underside, according to Druce's figure, the type ♂ of *barbara* differs from all the others principally in having less brown suffusion about the apical portion of the forewing, and narrower discal lines on both wings; in all other particulars it agrees with *mildbraedi* and *yokoana*. *E. barnsi* differs from the other three in having a much stronger development of the orange markings of the hindwing underside. None of these differences in my opinion can be regarded as specific; the only separation that may perhaps be justifiable would divide these forms into three subspecies:

(a) *E. barbara barbara*. Cameroons, coast.

(b) *E. barbara mildbraedi* (= *E. yokoana*). Cameroons, interior.

(c) *E. barbara barnsi*. Congo, eastern.

16. *Epamera aphnaeoides nasisii* ssp. nov. (Pls. X, XI, fig. 26.)

♀. *Upperside*. Differs from the typical female on the upperside in having the white, faintly blue-tinted, discal area rather more extensive, occupying fully the basal thirds of areas 4 and 5 and the middle thirds of 2 and 3, on the forewing; on the hindwing the blue is restricted to the veins and the basal area enclosed by the median stripe—the upperside in fact closely resembles the figure given by Hewitson (*Ill. Diurn. Lep.*, Suppl., pl. iv a, fig. 51), except that the submarginal line is represented only by a series of small well-separated black dots.

Underside. On the forewing only the first and second transverse yellow bands are completely black-edged, the third only so for rather less than half its length; on the hindwing the bands are entirely devoid of black edging except for a short distance in the costal area, and the yellow marginal band extends to vein 2. All the bands noticeably wider than in the other subspecies.

B.M. TYPE No. Rh. 330. Holotype ♀ from Nasisi Hills, 20 miles N. of Mumias, Kenya Colony, 4,800 feet, June 14-15, 1911 (*S. A. Neave*) in B.M.; another ♀ also in B.M. from Kenya Colony, Valley of Mirua, S. Kavirondo, 4,500 feet, May 12-14, 1911 (*S. A. Neave*).

The underside characters serve to distinguish this subspecies at once from typical *aphnaeoides* and its subspecies *diametra* Karsch. The latter name was based upon a ♂ from N. Usambara described as having the wings above shining blue, the orange bands on the hindwing confluent at anal angle. Karsch made no mention of a white area on the forewing upperside, stated clearly that the orange bands beneath are black-edged, but did not describe the ♀. It is therefore somewhat remarkable that Druce's figure (*Ill. Afr. Lycaenidae*, pl. viii, 1910) alleged to be from a photograph of the type of *diametra* shows an obvious ♀, apparently mainly white on the upperside, and with the middle band on the hindwing underside not confluent with the other two. Fortunately a series of 7 ♂♂ and 11 ♀♀ in the B.M. from the south-eastern district of Kenya Colony, just north of Usambara, shows that these discrepancies correspond with the normal sexual differences in the species in that area, the only disagreement being that most of the ♂♂ in the B.M. have at least a small white area on the disc of the forewing. The fusion of the transverse bands on the hindwing towards the anal angle is a highly variable character and of no taxonomic value.

PSEUDIOLAUS gen. nov.

Forewing with veins 5 and 6 widely separate at origin; 6 and 7 from cell apex; 7 to apex of wing; 8 and 9 absent; 3 four times as far from 4 as from 2; inner margin convex in proximal half and there bearing on under surface a wide tuft of long plain hairs which lie against a glabrous patch, as in many species of *Epamera*. *Hindwing* with tails at veins 1b and 2, subequal, 4-5 mm. long, the lower slightly the longer; margin excavate immediately above vein 3, giving rise to a prominent projection at vein 3, but no tail; lobe as in *Epamera*; an oval androconial patch 3 mm. long about the origin of vein 7, surrounded by a nacreous area that extends about half-way across cell towards its lower margin. Thorax and body moderately stout, head broad. Eyes naked. Frons without median furrow, broad. Palpi as normal in *Epamera*, rather slender, 3rd segment about one-third length of second, porrect. Antennae three-sevenths length of costa, with gradual club occupying about one-third of total length, segments $1\frac{1}{2}$ to twice as long as broad, not readily distinguished. Legs smooth, unicolorous.

Genotype: *Pseudiolaus poultoni* sp. nov.

In the possession of only 10 veins to the forewing, this genus is most closely related to *Stugeta* H. H. Druce. It can be separated from that at once by the presence of the secondary sexual characters, which are typical of *Epamera*. The only known species is entirely *Epamera*-like in appearance and quite devoid of the rich underside markings characteristic of *Stugeta*.

Pseudiolaus poultoni sp. nov. (Pls. X, XI, fig. 27 ♂.)

♂. Upperside, forewing black, the greater part of the basal half occupied by a pale violet-blue patch, the outer edge of which is rather diffuse and runs along the basal half of the anterior edge of the cell, thence to lower cell-apex (where it is somewhat white-tinted), not extending into area 3, diagonally across

base of area 2 to a point on the median line of area 1b distant 1.5 mm. from termen ; here it is strongly recurved to end on inner margin at about 4 mm. from tornal angle ; cilia almost black ; a dark shade at cell-end. Hindwing pale violet-blue ; the costal area, just inclusive of vein 6, black ; androconial patch shining brown, surrounded by dark brown nacreous area that extends about half-way across cell ; abdominal area pale grey ; a small black spot against the margin in area 2, surmounted by orange, and a similar one on the inner half of lobe ; a linear marginal black spot in 1c ; anteciliar line black, conspicuous, preceded by a narrower white line that extends from the black lobe-spot to vein 6 ; cilia white ; tails black with white cilia.

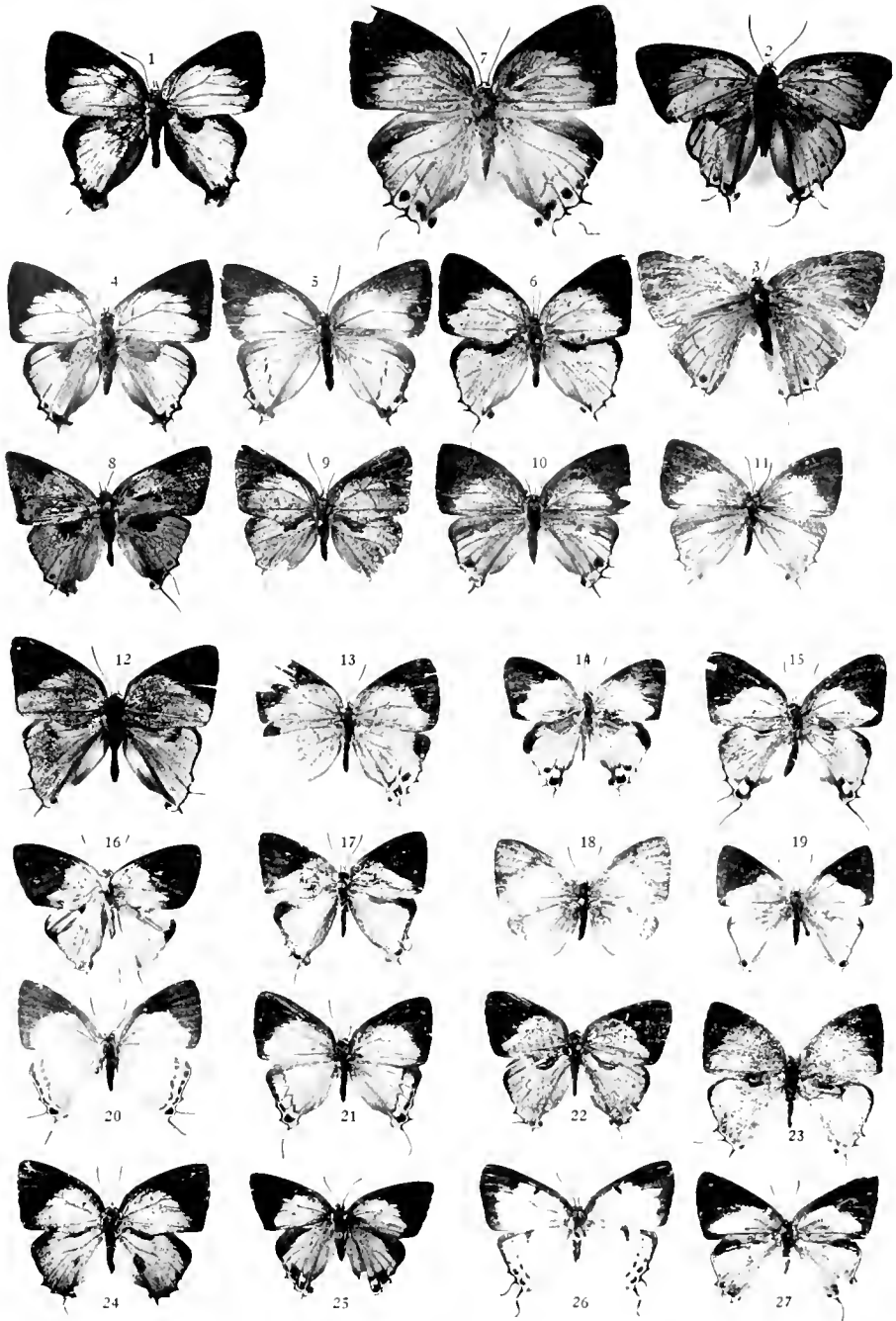
Underside white with fine black anteciliar line and almost white cilia to both wings. Forewing with prominent but narrow orange-brown line across cell-end ; a discal line of same colour, straight, from area 10, just before termination of vein 11, to vein 1 at 2.5 mm. from its extremity ; a curved submarginal line of same colour, interrupted at each vein, roughly midway between discal line and termen but parallel with the latter and of same length as the former ; terminal area and apex slightly greyish. Hair-pencil black. On the hindwing the discal and submarginal lines are continued, the former rather irregular, sharply angled in 1c and black from about vein 2 to inner margin ; the submarginal line fuscous as far as vein 3 where it expands outwardly to form a subtriangular orange patch that joins with the oval black marginal spot in 2, broken at vein 2, thence continued irregularly to form a border to the lobe-spot and, more narrowly, to vein 1a on inner margin ; where it is orange the submarginal line bears a few scattered metallic green scales ; a greyish shade before anteciliar line, much wider in 1c than elsewhere.

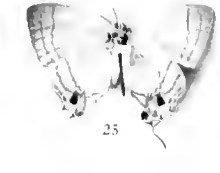
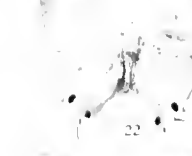
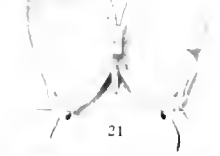
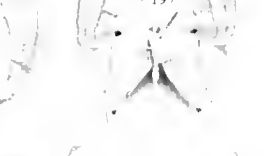
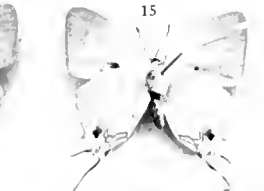
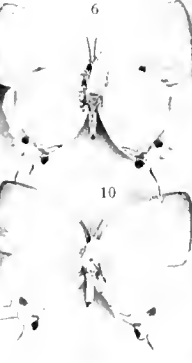
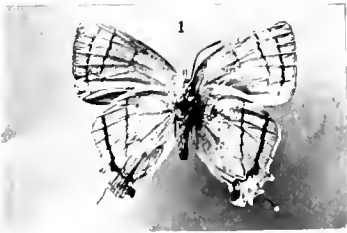
Frons pale orange. Legs white to cream-coloured.

Length of forewing, 17.5 mm.

Habitat. Kenya Colony, nr. Wangi, on coast of mainland, Feb. 21-22, 1912, 2 ♂♂ including Holotype (B.M. Type No. Rh. 331).

The underside markings of this species are so deceptively similar to those of many true *Epamera* of the East Coast, e.g. *E. pollux*, *E. bansana* and the ♂ of *E. mildbraedi*, while the upperside so closely resembles that of *E. tajoraca*, especially its form *ertli* of the coast belt, that the suggestion of a mimetic association between *Pseudiolaus* and *Epamera* is very strong. I have therefore named it after Prof. Poulton, whose interest in such associations is so well known.







A CORRECTION.

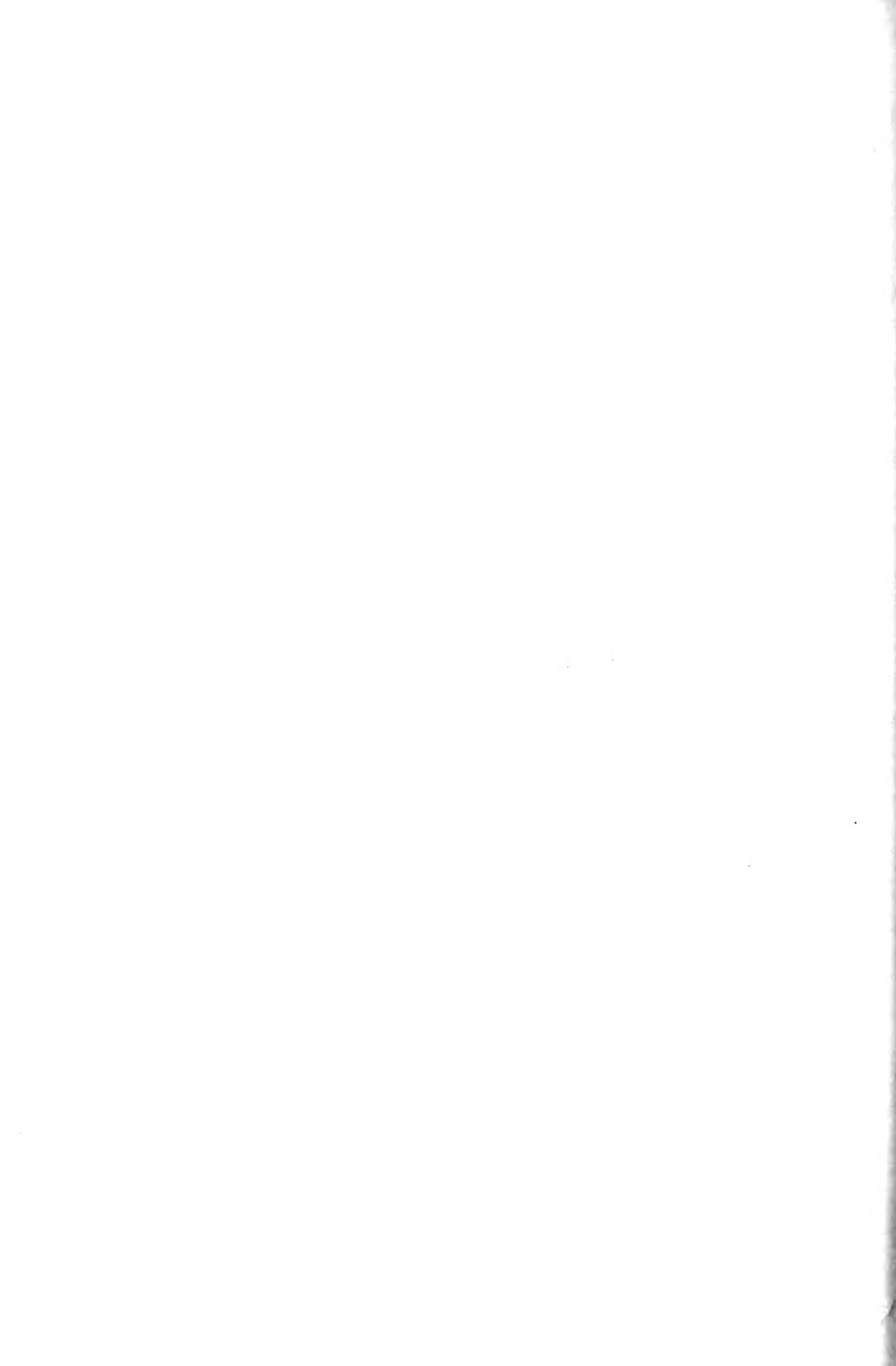
By ERNST HARTERT.

IN page 367, anteà, I described an adult male of a Falcon caught near Sfax, which I called *Falco peregrinus brookei*. This was a strange error, the bird being undoubtedly a specimen of

Falco peregrinus calidus Lath.

Cf. *Vög. pal. Fauna*, p. 1046. This accounts for the difference from *Falco peregrinus brookei* described on p. 367, as well as for the locality where it was caught.

On page 300, Dr. v. Jordans suggests the possibility of separating the Peregrines of Mallorca from those of Corsica and Sardinia. To me they seem to belong to the same subspecies, and the small differences pointed out by Jordans seem to be individual, but the material available being very small, this is difficult to decide. If, however, the Mallorcan form could be separated, it would be the same as the one nesting in southern Spain and near Tanger, and it would require a new name, as the name *punicus* cannot be used. If Jordans (anteà, p. 300) said that the Mallorcan birds were very close to the "nordafrikanische Wanderfalke," this statement requires modification: the "North-African" Peregrine is *F. p. pelegrinoides*, but he means evidently the form which nests in Spain and near Tanger, the latter being the only nesting-place known for certain in North Africa; therefore the expression "North African" Peregrine is misleading.





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