

Hab. West Central Sahara.

Type : ♂ ad. Oued Mya, May 2, 1912 (Ernst Hartert and Carl Hilgert coll.).

***Ovis lervia blainei* subsp. nov.**

♂ ad. Horns strongly depressed, turning sharply downwards, but not bent backwards so much as in the other three races.

Neck and body uniformly brownish grey, less rufous than in any of the other races. Sides of head, face, and mask much darker owing to admixture of blackish hairs ; beard on rami of lower jaw almost black.

Hab. Dongola Province ; Kordofan.

Type : ♂ ad., Border of Dongola Province and Kordofan (Gilbert Blaine coll.).

I here append a short key of the four races :

- 1 { Horns strongly depressed, no face-stripe. 2.
Horns hardly or not at all depressed, an indistinct median face-stripe. *Ovis lervia lervia*.
- 2 { Pelage sandy rufous. 3.
Pelage brownish grey, beard blackish. *Ovis lervia blainei*.
- 3 { Pelage warm sandy rufous, no white sub-auricular patch. *Ovis lervia ornata*.
Pelage pale sandy rufous, a white sub-auricular patch. *Ovis lervia sahariensis*.

XII.

ON DIPTERA COLLECTED IN THE WESTERN SAHARA BY DR. ERNST HARTERT, WITH DESCRIPTIONS OF NEW SPECIES.

BY ERNEST E. AUSTEN.

PART I. BOMBYLIIDAE.

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THE collection of Diptera formed by Dr. Ernst Hartert during his recent expedition to the Algerian Sahara, although not extensive, includes, as is but natural, a number of species of interest. Owing to official duties, the author has found it impossible in the following pages to do more than give an account of the *Bombyliidae*, but a second instalment of this paper, dealing with the remainder of the collection, will be published as soon as possible. In the present contribution, for the sake of greater completeness, notes on certain specimens taken in Algeria in 1908 by the Hon. L. W. Rothschild, and presented by him to the National Collection, have also been included. With the exception of species distinguished by an asterisk (*), determinations of previously described species have been supplied or verified by Herr Th. Becker, of Liegnitz, who has made a special study of Algerian Diptera, and to whom the author desires to express sincere thanks for his great kindness.

It only remains to add that Dr. Hartert's collection of Diptera, including the types of new species, has most generously been presented to the British Museum (Natural History).

ANTHRACINAE.

Genus EXOPROSOPA Macq.

Exoprosopa beckeri sp. nov.

♀. Length (8 specimens) 14 to 18.5 mm.; width of head 4 to 5.2 mm.; width of front at vertex 1 to 1.4 mm.; length of wing 16 to 21.5 mm.

Large, sand-coloured species, with pale, parti-coloured wings, tips and hind borders of which are milky; head and body clothed exclusively with yellowish cream-coloured hairs and scales, bristles on post-alar calli and hind border of scutellum also yellowish; antennal style elongate, often as long or almost as long as third joint of antennae; wings with all posterior marginal cells open, and submarginal transverse vein (recurrent vein) sinuate, not at right angles to second longitudinal vein.

Head: Ground-colour ochraceous-rufous, lower portion of sides of face yellowish horn-coloured, a spot or blotch on vertex, also jowls and basi-occipital region, and sunken portion of occiput slate-coloured or blackish slate-coloured; face only bluntly conical below, not especially prominent; horizontal portion of *proboscis*, from origin of palpi to tip, 4 to 4.75 mm. in length; *palpi* dark brown on outer surface, and clothed with yellowish hair; first and second joints of *antennae* ochraceous-rufous, third joint clove-brown or black.

Thorax: Ground-colour of main portion clove-brown or blackish slate, that of scutellum and post-alar calli cinnamon-rufous or chestnut, an ill-defined roughly triangular area on hind border of main portion of dorsum likewise reddish in some specimens, extreme base of scutellum occasionally blackish slate-coloured; hair on collar and upper part of pleurae long and dense, ground-colour of dorsum in undenuded specimens entirely concealed by hair and scales.

Abdomen: Ground-colour (which in undenuded specimens is completely concealed in same way as that of dorsum of thorax) sometimes same as that of scutellum, except that tergites of first three or four segments each have a median, transverse, blackish slate-coloured blotch at base; in other cases ground-colour of dorsum is mainly blackish slate, but the hind borders of the second to the sixth tergites inclusive, as well as the lateral extremities of the second and third, or second, third, and fourth tergites are cinnamon-rufous, while the hind border of the last tergite is ochraceous-buff, and the venter is cinnamon-rufous, with a greyish clove-brown transverse band, more or less widely interrupted in the middle line, at the base of each ventral scute, commencing with the second; in yet other specimens ground-colour is clove-brown or blackish slate, but posterior angles of second and third tergites, hind borders of third and following tergites, and those of all ventral scutes are ochraceous-buff or buff.

Wings: Anterior two-thirds, from base of wing to end of first longitudinal vein, buff or cream-buff (proximal third or two-thirds of marginal cell, proximal two-thirds or three-fourths of second basal cell, and proximal half of anal cell paler); this coloured area bounded distally by an irregular, lighter or darker, mummy-brown or sepia-coloured oblique band, starting from anal cell just beyond middle (or from axillary cell close to median portion of sixth longitudinal vein), filling more or less completely bases of third and fourth posterior cells (usually occupying a larger portion of fourth than of third posterior cell), occupying proximal half or rather more than proximal half of discal cell, forming a border along posterior side of third longitudinal vein from just beyond junction of anterior transverse vein to

distal extremity of discal cell, thence curving across first posterior cell a little beyond its middle and passing into an irregular blotch suffusing submarginal transverse vein and junction of latter with second longitudinal vein, and terminating at distal extremity of first longitudinal vein, but leaving extreme tip of marginal cell, as also that of interior submarginal cell, unoccupied. The degree of development of the oblique band just described varies in different individuals; sometimes the band is well developed, fairly dark, and so broad as greatly to restrict the extent of the buff-coloured area in the proximal portion of the wing; in other instances the central portion of the band is so faint as to be scarcely distinguishable, so that the band is divided into two blotches, one extending from anal cell to base of third posterior cell, the other suffusing the junction of the submarginal transverse vein with the second longitudinal; in all cases the milky hind border makes a deep indentation into the distal portion of the discal cell: first costal cell occasionally mummy-brown. *Squamæ* isabella-coloured, fringes whitish.

Halteres: Stalks buff or cream-buff, knobs cream-coloured, sometimes darker at base.

Legs: Front femora clove-brown, extreme tips cinnamon-rufous, middle and hind femora cinnamon-rufous, lower portion of their anterior surfaces clove-brown, middle and hind femora sometimes mainly clove-brown, all femora, as also tibiae and tarsi, clothed above with whitish scales, bristles on femora, tibiae, and tarsi black; tibiae and tarsi cinnamon-rufous, front tibiae sometimes more or less clove-brown, at least on inside, middle and hind tibiae long and slender.

ALGERIAN SAHARA: type and three para-types from El Meksa, south of El Goléa, 2. iv. 1912; two specimens from the southern portion of the Oued Mya, 5. v. 1912; two from El Goléa, 10-13. v. 1912.

The author has much pleasure in naming this fine species in honour of Herr Th. Becker, in grateful recognition of the generous assistance afforded by him in the working out of Dr. Hartert's collection.

In coloration and general appearance *Exoprosopa beckeri* presents a distinct resemblance to *E. albida* Walk. (? = *E. bagdadensis* Macq.), the type of which is stated by Walker to be from the "East Indies," and to *E. olivieri* Macq., of which the typical example was obtained in Arabia. In neither of these species, however, are the distal extremity and hind border of the wing distinctly milky, as is the case in *E. beckeri*, while the latter is further distinguished, inter alia, by its first posterior cell being open instead of closed, and by the elongation of its middle and hind tibiae.

***Exoprosopa arenacea* Becker.**

(*Zeitschr. f. syst. Hym. u. Dipt.*, Bd. vi. p. 151 (1906).)

Three ♀♀ from El Meksa, south of El Goléa, Algerian Sahara, 2. iv. 1912.

According to the original description the wings in this species are "violet-grey," and "harmonise very well with the colour of the sand." The wings in Dr. Hartert's specimens, however, are dark brown, except the tips, hind borders, and an extension from the latter into the distal portion of the discal cell, all of which are either milky-white (two specimens) or light drab-grey (one specimen): the dark colour is sharply differentiated from the pale portion of the wings, and there is no trace of the supernumerary transverse veins mentioned in Becker's description. It will be seen, then, that from the description of the wings alone it would be impossible to recognise Dr. Hartert's specimens as belonging to

E. arenacea Becker. Other noteworthy differences, however, exist. Thus Becker describes the first two joints of the antennae as "yellowish-brown," while he states that the last two abdominal tergites are "entirely yellow"; in the specimens before the writer the first two joints of the antennae are clove-brown or black, at any rate above, and the abdominal tergites in question, except their hind borders, are of the same colour.

It may be added that the typical specimen (a ♀) of *E. arenacea* Becker, which is in the Musée Royal d'Histoire Naturelle de Belgique, in Brussels, was obtained at Tilhs de Mela, in the Sahara, on 1. iv. 1893, by Professor Lameere.

Genus MOLYBDAMOEBIA Sack.

Molybdamoeba trinotata Duf.

(*Ann. Soc. Ent. France*, 2^{me} Série, T. x. p. 7, Pl. 1. i. fig. 9 (1852) (*Anthrax*).)

One ♀ from the southern portion of the Oued Mya, Algerian Sahara, 4. v. 1912.

This specimen does not altogether agree either with Dufour's figure, or with his extremely brief description: the type of the species was taken in the vicinity of Madrid.

Genus CYTHEREA Fabr.

* *Cytherea argyrocephala* Macq.

(*Mém. Soc. royale des Sc., de l'Agric. et des Arts de Lille*, 1840, p. 333 (*Anthrax*); *Dipt. Exot.*, ii. 1, p. 55. Pl. 20. fig. 9 (1840) (*Anthrax*).)

One ♂ from Hammam R'irha, Algeria, May 1908 (Hon. L. W. Rothschild).

The type of *C. argyrocephala* Macq. was obtained in Algeria, and the British Museum possesses a ♀ of this species from Constantine, 7. v. 1895 (Rev. A. E. Eaton), in which there are three submarginal cells in the right wing. The left wing of this specimen is, however, perfectly normal, and does not exhibit even a trace of a supernumerary transverse vein in the first submarginal cell.

Under the name *Mulio argyrocephalus* Macq., Becker (*Zeitschr. f. syst. Hym. u. Dipt.*, iii. Jahrg., p. 91 (1903)) records the occurrence of this species in Egypt.

BOMBYLIINAE.

Genus GERON Meig.

* *Geron hybridus* Meig.

(*Klassif.*, i. p. 186 (1804) (*Bombylius*).)

One ♀ from the southern portion of the Oued Mya, Algerian Sahara, 4. v. 1912.

Genus USIA Latr.

Usia florea Fabr.

(*Ent. Syst.*, T. iv. p. 412 (1794) (*Voluccella*).)

Four ♂♂ and one ♀ from Hammam R'irha, North Algeria, May 1911 (Hon. L. W. Rothschild and Dr. E. J. O. Hartert).

The Museum previously possessed specimens of this species from the same locality, as well as others from Algiers, taken in both cases in May 1908 (Hon. L. W. Rothschild).

Genus CONOPHORUS Meig.

Conophorus bellus Beck.

(*Zeitschr. f. syst. Hym. u. Dipt.*, Bd. vi. p. 112 (1906) (*Ploas bella*).)

One ♂ from Biskra, South Algeria (Hon. L. W. Rothschild and Dr. E. J. O. Hartert).

The type of this species was obtained at Tunis.

Genus ANASTOECHUS O. Sack.

Anastoechus retrogradus Beck.

(*Mitteil. Zool. Mus. Berlin*, ii. Bd., 2. Heft, p. 17 (1902) (*Systoechus*).)

One ♀ from the southern portion of the Oued Mya, Algerian Sahara, 4. v. 1912.

The typical specimens of *A. retrogradus* were taken at Alexandria, Egypt, at the beginning of May, and Bezzi (*Brotéria, Ser. Zool.*, vol. viii. fasc. 2, p. 50, tab. ix. fig. 37 (1909)), who has published a photographic illustration of the species, also records its occurrence at Sidi-Gaber, near Alexandria. Becker (*loc. cit.*) mentions the capture of a ♀ at Berriane, Southern Algeria (Sahara), on May 28 (Prof. Lameere), and the British Museum (Natural History) possesses a ♂ and ♀ from Biskra, Algeria, 13. iv. 1895, "visiting *Limoniastrum guyonianum*, Coss. and Dur." (Rev. A. E. Eaton). A second ♀ in the National Collection, from Fontaine Chaude, S. Algeria, 16. v. 1894 (Rev. A. E. Eaton), either represents a variety of *A. retrogradus* Beck., or, as is perhaps more probable, belongs to a new but closely allied species. It is distinguished from the typical form of *A. retrogradus* by its much greater size, measuring 14.5 instead of 11 or 12 mm. in length; by the first joint of the antennae being pale cinnamon-rufous, instead of black or blackish; by the third joint of the antennae being different in shape (suddenly contracted and less tapering) as seen when the head is viewed in profile; and by the greater development of coarse, ochre-yellow or brown-tipped hairs on the front, and of transverse bands of ochraceous hairs on the abdomen.

Anastoechus retrogradus Beck. is allied to *A. (Bombylius) miscens* Walk. (*Entomologist*, vol. v. p. 271 (1871)), the type of which was obtained at Arkeko, near Massowah, Eritræa. In *A. miscens*, however, the abdominal bristles are entirely black, the base of the anterior branch of the third longitudinal vein is not rectangular and is devoid of all trace of a recurrent appendix, and the transverse veins are not suffused with brown.

Anastoechus hyrcanus (Pall.) Wied.

(*Zoologisches Magazin*, Bd. i. Stück ii. p. 22 (1818) (*Bombylius*).)

One ♂ from Biskra (Hon. L. W. Rothschild and Dr. E. J. O. Hartert).

Genus BOMBYLIUS Linn.

Bombylius punctatus Fabr.

(*Ent. Syst. T.* iv. p. 408 (1794).)

One excellently preserved ♂ of this splendid species from Hammam R'irha, North Algeria, May 1911 (Hon. L. W. Rothschild and Dr. E. J. O. Hartert).

The National Collection previously possessed specimens of *B. punctatus* from

Constantine, 12, 15. v. 1895, and Lac des Oiseaux, 15. vi. 1896, in North Algeria (Rev. A. E. Eaton); from Kambos, Mt. Taygetos, Southern Greece, July, 1901 (Holtz); Corfu, 31. v. 1901 (Rev. F. D. Morice); Odessa, South Russia, 1843 (Dr. Dowler); Galilee, Palestine (B. T. Lowne, F.R.C.S., F.L.S.); and Jericho, Palestine, 13. iv. 1909 (Rev. F. D. Morice).

Becker (*Zeitschr. f. syst. Hym. u. Dipt.*, Bd. vi. p. 97 (1906)) records the capture of an example of this species near Tunis, in the month of May.

Bombylius fimbriatus Meig.

(*Syst. Besch.*, ii. p. 191 (1820).)

One ♂ from Hammam R'irha, North Algeria, May 1911 (Hon. L. W. Rothschild and Dr. E. J. O. Hartert).

Bombylius senex Meig.

(*Syst. Besch.*, ii. p. 216 (1820).)

Two ♀♀ from the Oued Nça, between Guerrara and Ghardaïa, Southern Algeria, 3-5. vi. 1912.

(*To be continued.*)

XIII.

ORDER RHYNCHOTA.—HOMOPTERA.

By W. L. DISTANT.

FAMILY CICADIDAE.

1. **Melampsalta cantans**.

Tettigonia cantans Fabr., *Ent. Syst.* iv. p. 20. 13 (1794).

North Algeria; Hammam R'hira (May 1911, Rothschild and Hart.).

2. **Pauropsalta aestuans**.

Tettigonia aestuans Fabr., *Ent. Syst.* iv. p. 20. 14 (1794).

North Algeria; Hammam R'hira (May 1911, Rothschild and Hart.).

FAMILY FULGORIDAE.

Subfam. DICTYOPHARINAE.

3. **Dictyophara harterti** sp. n.

Head and pronotum ochraceous; lateral margins of vertex above and a central longitudinal carination between eyes, lateral margins and carinations to pronotum, and carinations to mesonotum, virescent; abdomen above greenish ochraceous; vertex beneath ochraceous, the lateral margins and a central carination virescent;



1913. "On Diptera collected in the western Sahara by Dr. Ernst Hartert, with descriptions of new species, Part 1, Bombyliidae." *Novitates zoologicae : a journal of zoology in connection with the Tring Museum* 20, 460–465.

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