

Keda simpliciceps (de Meijere).

Eristalis simpliciceps de Meijere, Tijds. v. Ent., lvii, 146, 1914.

Length, 14.5 mm. (The type was only 11 mm. long).

Female. Face, lower seventh of front and the cheeks reddish-yellow in ground color, the face with whitish-yellow pollen and yellow pile, in the middle with a slender black stripe which is broadened below. Front dull black, the sides broadly brownish yellow pollinose; above the antennæ with a shining reddish and black triangle, the black part with a low tubercle in the middle; pile short, black, yellow on the sides of the lower three-fourths. Ocellar triangle slightly longer than wide, situated a little in front of the posterior angles of the eyes. Antennæ brownish, the second segment, lower part of the third and the basal half of the base arista, reddish.

Mesonotum dull black, with four yellowish pollinose vittæ, the outer ones occupying the lateral margins, the inner pair united just in front of the translucent brownish yellow scutellum; median black vitta divided by a slender, inconspicuous pale line, the outer ones sub-shining on the outer half. Pleura cinereous pollinose. Pile short, erect, yellow; apical half of the scutellum with coarser, black hair.

Legs brownish-red; anterior four femora and their tarsi brownish above; posterior legs brown, the base and apex of the femora and almost the whole under surface, basal half of their tibiæ and the whole ventral surface, brownish-red. Hair black; yellowish on the lower basal half of the anterior four femora and the basal third of the posterior pair.

Wings cinereous hyaline; stigma reddish-brown, elongate. Squamæ white, with yellow border and fringe. Halteres yellow.

Abdomen yellow, with black fasciæ. Anterior border of first segment broadly brownish except at the sides. Sub-apical fifth or slightly less of the second segment, produced in the middle as a narrow triangle which extends as a fine line to the narrow, basal brown fascia, black, the basal dark fascia not nearly reaching the lateral margins of the segment. The black fascia on the third segment is equal to two-fifths the length of the segment and the broader median triangle is cut off rather truncately before reaching the base of the segment; the apical fifth of the segment is yellow. Markings of the fourth segment are similar to those of the third. The black fasciæ are opaque, those on the third and fourth segments shining in front. Fifth segment much narrower than the fourth, blackish, the base broadly yellow; a narrow median vitta reddish. Pile short, black on apical half or more of the second and following segments; yellow elsewhere, including the lateral margins

of the fourth segment, that on the apical half of the fifth segment intermixed black and yellow. Entire lateral margin of abdomen shining yellow. Venter wholly yellow and yellow haired.

Described from a single female, Kedah, Alor Star, March 6, 1928, (H. M. Pendlebury).

Genus *Merodonoides* gen. n.

Superficially resembling species of *Eristaloides* Rond, but the eyes are bare and the posterior femora are greatly enlarged. Similar to *Tigridimyia* Bigot but at once distinguished by the petiolate marginal cell.

Eyes narrowly contiguous, the vertical triangle very long; face with a low tubercle as in *Eristaloides*, the antennæ as in that genus. Mesonotum short, almost circular from dorsal view; scutellum rather large and transverse. Anterior four femora a little swollen, the posterior pair very strongly swollen, very gently concave below, convex above, bearing a very weak, elongate, convex "plate" on the subapical fifth. Posterior tibiæ laterally compressed, gently arcuate. Wings as in *Eristaloides*. Abdomen much longer than the thorax tapering to beyond the middle, the second segment with a broad, inverted wide V-shaped depression, the third with almost transverse depression in the middle. Genotype, *M. circularis* sp. n.

Merodon tuberculatus Brunetti may also belong to this genus.

Merodonoides circularis sp. n.

Thorax cinereous pollinose, with four incomplete shining black vittæ. Length, about 10 mm.

Male. Head evidently wholly black in ground color, densely cinereous white pollinose, the occipital pollen with yellow tinge above; vertical triangle opaque blackish-brown above, cinereous yellow on anterior half; facial tubercle narrowly shining black; a triangle on the front of the cheeks less thickly pollinose; a small triangle above the antennæ shining black. Pile whitish, a few hairs on the frontal triangle and the vertical triangle entirely, black. Antennæ brown; third segment narrowly reddish below and basally; arista reddish on more than the basal half, bare. Eyes reddish, the posterior border and two irregular vittæ on the upper half, brown.

Thorax thickly ashy pollinose, the four shining black vittæ all rather narrowly separated from each other, more broadly so from the anterior and posterior margins of the mesonotum. Posterior calli bare. Scutellum reddish. Pile of thorax short, abundant, and erect, whitish.

Anterior four femora black with reddish apices, their tibiæ brown with less than the basal half reddish-yellow. Tarsi black, the basal one or two segments of the middle

pair dull yellowish. Posterior femora reddish on basal half, black on apical half, their tibiae blackish, the basal third obscurely reddish. Pile of legs short and whitish; black on the "plate" on the hind femora and on the apical one or two tarsal segments.

Wings slightly tinged with luteous, the veins blackish apically, luteous basally; stigma longer than wide, dark brown. Squamæ whitish, with brownish border and yellow fringe. Halteres yellow.

Abdomen rusty reddish, with ferruginous markings. First segment gray pollinose except laterally. Second segment with a narrow, dull black incomplete basal fascia and behind the depression with a dull ferruginous triangle which is produced to form an obscure, incomplete preapical fascia. The third segment bears a similarly colored, incomplete fascia beyond the middle. The basal two-thirds of the fourth segment and the genitalia are ferruginous. Pile short, pale yellowish, on the sides and apex longer and whitish. Venter rusty reddish.

Described from one male, Kedah Peak, 3,300 ft., March 19, 1928 (H. M. Pendlebury).

Genus *Lathyrophthalmus* Mik.

Table of Species.

- | | |
|--|----------------------------------|
| 1. Scutellum shining black - - - | 2. |
| Scutellum reddish or yellowish - - - | 3. |
| 2. Mesonotum with four cinereous vittæ, the outer ones sub-lateral - - - | <i>nigroscutatus</i> de Meijere. |
| Mesonotum wholly without pale vittæ - - - | <i>selectans</i> sp. n. |
| 3. Femora mostly reddish, sometimes blackish on apical half; pale abdominal spots widest laterally - - - | <i>arvorum</i> Fabricius. |
| Femora blackish except their apices, pale abdominal spots widest toward the middle of the abdomen - - - | <i>obliquus</i> Wiedemann. |

Lathyrophthalmus arvorum Fabricius.

Syrphus arvorum Fabricius, Mant. Ins., 335, 1787.

3 ♀, Kedah Peak, 3,000-3,300 ft., March 8, 12, 26, 1928 (H. M. Pendlebury).

Lathyrophthalmus selectans sp. n.

Shining black, the abdomen mostly opaque and bearing four small, cinereous pollinose spots; sides of mesonotum cinereous white pollinose in front of the suture. Length, 9 mm.

Male. Sides of face rather narrowly, the lower third except in the middle, linear frontal orbits and the posterior orbits on the lowest three-fourths, cinereous white pollinose. Face gently concave above, the large, shining black tubercle situated below the middle. Pile moderately long and white; short and white on the posterior orbits. Frontal triangle shining, with a moderately large tubercle in the middle, the pile black. Vertical triangle short, opaque in front of the equilateral ocellar triangle, black pilose, the occipital cilia black. Antennæ brownish, the third segment paler below on basal portion; arista distinctly pubescent. Eyes with yellowish pile on upper half.

Thorax shining black, the pleura broadly in front and below, the humeri and a broad sub-lateral vitta in front of the suture, sericeous pollinose. Pile rather short and black, the pale pollinose parts of the pleura and the anterior border of the humeri with yellowish pile. Pile very dense on the notopleura laterally and above the base of the wings. A few of the marginal hairs on the shining black scutellum are also yellowish.

Legs black, the extreme tips of the femora, bases of the tibiae and the first tarsal segment on the anterior four legs more or less reddish. Pile black, yellow on the posterior surface of the middle and ventral surface of the posterior femora. Femora and posterior tibiae only a little enlarged.

Wings tinged with luteous. Stigma luteous with brown spot at base, the subcostal cell mostly brown before the stigma. Squamæ brown, with brownish-yellow fringe. Halteres yellow.

Abdomen opaque black with shining areas and four cinereous pollinose spots. Second segment with a small, shining black triangle on either side. Third segment with a subtriangular shining black spot in the middle on either side, the inner ends rounded, the outer end produced narrowly to the apex of the segment; in the middle with a pair of very broadly separated, small, longitudinally placed cinereous pollinose spots. Fourth segment with a still larger, lateral triangle which reaches the apex of the segment at the sides and is narrowly separated from the base except at its outer end; on the disc with a pair of widely separated cinereous pollinose vittæ extending from near the base of the segment to the apical fourth, the apex of the segment broadly shining black. Genitalia shining black, thinly brown pollinose. Pile short, yellowish; black on the second and third segments except large basal triangles on the second and around the cinereous spots on the third; longer on the lateral margins, apical segments, genitalia and the shining black venter.

Described from a single male, Selangor, Bukit Kutu, 3,500 ft., April 17, 1926 (H. M. Pendlebury).

Genus *Eristalis* Latreille.

Table of Species.

- | | |
|---|---------------------------------|
| 1. Eyes pilose - - - - | 2. |
| Eyes bare - - - - | 5. |
| 2. Face with a broad shining black vitta - - - - | 4. |
| Face wholly pollinose, the tubercle sometimes partly bare - - - - | 3. |
| 3. Middle of face black pilose above; eyes black pilose on upper fourth or more - | <i>cerealoides</i> sp. n. |
| Face and eyes wholly yellowish pilose - - - - | <i>cerealis</i> Fabricius. |
| 4. The yellow spots on the second abdominal segment do not reach the posterior border - - - - | <i>simplicipes</i> Curran. |
| The yellow spots on the second segment are very connected with those on the third - - - - | <i>hortorum</i> Fabricius. |
| 5. Scutellum blackish - - - | 6. |
| Scutellum reddish - - - | 9. |
| 6. Pile of mesonotum black except on the sides in front - | <i>perakensis</i> Curran. |
| Pile much more extensively whitish or yellow - - - | 7. |
| 7. The opaque black on the base of the second segment reaches the lateral margins - - - - | 8. |
| The opaque black is rather broadly separated from the lateral margins - - | <i>purus</i> Curran. |
| 8. Anterior femora wholly pale pilose - - - - | <i>penangensis</i> sp. n. |
| Anterior femora black pilose on upper surface - - - | <i>niger</i> Wiedemann. |
| 9. Wings hyaline - - - - | <i>collaris</i> de Meijere. |
| Wings with a large sub-quadrate brown spot beyond the middle - - - - | <i>quadrangulum</i> de Meijere. |

Eristalis cerealis Fabricius.

Syst. Antl., 232, 1805.

E. solitus Walker. List. Dipt. Brit. Mus., iii, 619, 1849.

♀, Pahang, Gunong Benom, 6,000 ft., at light, Aug. 5, 1925 (I. H. N. Evans). ♀, Sarawak, April 1913. Also a ♂ from Darjeeling, Dec. 6, (T. D. A. Cockerell).

The species is common and widely distributed in the Oriental Region.

Eristalis horticola De Geer.

Musca horticola De Geer, Mem. pour serv. l'hist. Ins., vi, 140. Pl. viii, f. 12, 13, 1776.

? *Eristalis basifemoratus* Brunetti, Fauna Brit. India, Dipt., iii, 175, 1923.

♂, Malay Peninsula, ex Coll. Agric. Dept.

The specimen has been labelled *horticola* and I can see no difference between it and European examples. I believe that *basifemoratus* Brunetti is based upon a female of this species.

Eristalis quadrangulum de Meijere.

Tijd. v. Ent., lviii, Suppl. p. 33, 1916.

Eristalis maculipennis Brunetti (not de Meijere) Fauna Brit. India., Dipt., iii, 167, 1923.

♀, Selangor, Bukit Kutu, 3,500 ft., April 13, 1926; ♀, Kedah Peak, 3,000 ft., March 13, 1928 (H. M. Pendlebury).

I do not know whether this species is distinct from *maculipennis* de Meijere, but the latter is described as having a black mesonotum while the specimens before me have the mesonotum yellowish brown pollinose or even paler. They therefore agree with Brunetti's description, and, of course, with de Meijere's description of *quadrangulum*.

Eristalis penangensis sp. n.

Related to *niger* Wiedemann but considerably larger and with metallic green abdomen and wholly yellow pilose anterior femora. Length, 15 mm.

Female. Head black; face cinereous white pollinose, a broad median vitta which is thinly pollinose in the depression and a large triangle on the front of the cheeks, shining black. Front narrow (considerably longer and narrower than in *niger*), gently widening anteriorly, across the anterior fifth with a broad shining greenish band the anterior fourth shining black and bearing a low rounded tubercle; pile short and black. Occiput cinereous white pollinose, the occipital cilia black, the pile whitish. Facial pile whitish, the tubercle large and broad, the face deeply concave above, almost perpendicular below. Antennæ brown, the arista with very short rays.

Mesonotum opaque black, with a broad cinereous fascia immediately in front of the suture. Pile brassy yellowish, black behind the suture except for an incomplete prescutellar band and on the outer surface of the posterior

calli. Pleura mostly cinereous pollinose, black on upper half in front and posteriorly. Scutellum dull black, the free border broadly metallic dark greenish. Pile brassy yellow.

Legs black; tips of femora reddish; basal half of anterior four and one-third of the posterior tibiae, yellow. Pile brassy yellow, black on the tarsi.

Wings tinged with brown, darker anteriorly. Squamæ and halteres bright reddish-yellow.

Abdomen metallic green with opaque black markings. First segment with abundant, appressed, outwardly directed brassy yellow pile except laterally. Second segment with the apical fourth and a slender median triangle reaching to the base, opaque black, a small median apical triangle metallic green. Third segment with a broad opaque black fascia behind which is a transverse metallic triangle which does not nearly reach the lateral margins; in front with a narrow black vitta extending to the base; fourth segment rather similarly marked but the posterior green triangle is wider, the opaque black therefore forming a broad A-shaped fascia which is connected with the base by a linear projection. Fifth segment shining black apically. Pile brassy yellow; shorter and black on the opaque black markings on the second and third segments, at least toward the sides. Venter black, the apices of the segments reddish.

Described from one female, Penang Id., 1,500–2,428 ft., May 1911. (R. Hanitsch.)

The specimen is not in first-class condition but all the characters, with the exception of the extent of the black pile on the abdomen, may be readily discerned.

Axona chalcopyga Wiedemann.

Eristalis chalcopygus Wiedemann, Ausser. Zweifl., ii, 178, 1830.

♂ ♀, Kedah Peak, 3,000–3,500 ft., March 8, 15, 1928 (H. M. Pendlebury).

Genus *Megaspis* Macquart.

There are two species in the collection, both of which were described in my previous paper.

Megaspis chrysopygus Wiedemann.

Eristalis chrysopygus Wiedemann, Zool. Mag. i, 3, 1819.

♀, Malay Peninsula West Coast, Langkawi Island, April 14, 1928 (H. M. Pendlebury).

Megaspis errans Fabricius.

Syrphus errans Fabricius, Mantis, Ins., ii, 337, 1787.

♂ 2♀, Malay Peninsula West Coast, Langkawi Island, April 19, 24, May 1; ♂ ♀, Kedah, Catchment Area, near Jitra, April 8, 11, 1928, (H. M. Pendlebury).

XVII.—RECORDS AND DESCRIPTIONS OF SYRPHIDÆ
FROM NORTH BORNEO, INCLUDING
MT. KINABALU.

By C. H. CURRAN.

American Museum of Natural History, New York, U.S.A.

In the preceding paper (pp. 290–338) I have dealt with the *Syrphidæ* from the Malay Peninsula, including in the keys the species occurring in the present collection. As may be expected, many species are common to the two regions while many others are known to occur in the Dutch East Indies. It seems probable that increased collecting will result in the extension of the range of many of the forms known from only a single locality and that eventually the number of species indigenous to the Peninsula and Islands will be very greatly increased.

This report deals with two collections, a lowland one made in 1927 by Messrs. C. Boden Kloss and H. M. Pendlebury, a mountain one by Mr. Pendlebury in 1929. A survey of the specimens contained in the collections indicates two very different faunas, each typical of the environmental conditions under which the species occur. Owing to the obvious differences in the two localities (only a few specimens are from outside the two main regions), I have requested that there may be appended a description of the regions in which the collections were made.

[A collecting visit to the lowlands of British North Borneo was undertaken by the Raffles Museum, Singapore, Straits Settlements, and the Federated Malay States Museums between June and September 1927.

The bulk of the collections was made on the North East coast (1) in high forest and clearings at Bettotan, which is about twenty-two miles west-by-south of Sandakan; and (2) in small patches of forest in swampy country at Samawang which is about twenty-five miles west-by-north of Sandakan and on the South coast of Labuk Bay. Other localities visited, such as Kudat, Labuan Id. &c. are well known places.

A second visit was paid by the same Museums to British North Borneo between the beginning of March and the end of May, 1929, this time to Mt. Kinabalu, the highest mountain in Malaysia, which is 13,455 ft. in height.

Collecting was chiefly carried out at the higher altitudes, but hardly anything was found above the tree limit which varies from about 11,000 ft.—12,000 ft. A scanty fauna occurs between Pakka Cave (about 10,200 ft.) and the tree limit; the vegetation hereabouts is stunted, except in some of the more sheltered spots, and decreases rapidly in size as it approaches the tree limit. *Syrphidæ* were only