XVI.—NOTES ON ORIENTAL DIPTERA.

III.—REVIEW OF THE ORIENTAL SPECIES OF *SEPEDON* LATR., WITH DESCRIPTIONS OF TWO NEW SPECIES.

By E. Brunetti.

Seven species of this genus were included in Van der Wulp's Catalogue (1896) of the Diptera of South Asia. Of these I believe I can identify four with specimens either in the Indian Museum collection or my own, and add two new ones taken by myself last year in Java. They all appear to be valid species and of four of them, *plumbellus*, *aënescens*, *ferruginosus* and a new species *sanguinipes*, I have examined a series of about a score of each. Two species I know from single specimens only (*crishna* Wlk. and *fuscinervis* mihi) and the remaining three I have not seen; these being *javanensis* Rob. Des. (figured in Macquart's "Diptères Exotiques"), *costalis* (1) Wlk., and *costalis* (2) Wlk., which latter, the name being preoccupied by the author himself in the same genus, I have renamed *batjanensis*.

Table of Oriental species of Sepedon.

A	Front coxæ grey or blackish, with or without silvery white shimmer; *never yellow*.	
B	Abdomen plumbeous. Long. 4½-6½ mm.	
C	Apical half (or third) of wing distinctly darker; antennæ nearly or quite black (except the reddish yellow 1st joint); posterior femora generally with the apical half reddish Long. 5-6½ mm.	*plumbellus* Wied.
CC	Wings uniformly light greyish brown—rarely darkened towards tip (if so only very slightly); antennæ	

	brown, (sometimes darker at tip); posterior femora always uniformly tawny Long. 4½-6 mm.	*aënescens* Wied.
BB	Abdomen tawny or ferruginous Long. 6-10 mm.	
D	Cinereous species; abdomen tawny; thorax with four indistinct lines Long. 9 mm.	*costalis* Wlk.
DD	Ferruginous species; abdomen ferruginous; thorax with two indistinct lines Long. 10 mm.	*batjanensis*, nom. nov. for *costalis* Wlk. (2) preocc.
AA	Front coxæ (generally *all* the coxæ) bright yellow or tawny (with little or no shimmer).	
E	Thorax black or blackish.	
F	Wings uniformly brownish; four anterior tarsi in ♂ enlarged Long. 7 mm.	*javanensis* R. Des.
FF	Wings not uniformly coloured; either apical part distinctly darker, or a suffusion along the veins; only the fore tarsi enlarged.	
G	Apical part of wing distinctly darker Long. 7-8 mm.	*sanguinipes* Bru., sp. nov.
GG	Wing suffused along the veins Long. 6 mm.	*fuscinervis* Bru., sp. nov.
EE	Thorax ferruginous ..	
H	Abdomen ferruginous Long. 5-7 mm.	*ferruginosus* Wied.
HH	Abdomen plumbeous Long. 7 mm.	*crishna* Wlk.

S. plumbellus Wied., 1830.

Ausser. Zweifl., ii, 577.

This species is fairly common in grass and weeds near water in and around Calcutta, probably occurring throughout Bengal. From Calcutta the Indian Museum possesses it showing dates from the end of January up to July. Dr. Annandale' collector took one ♀ early in May this year at Dharampur (5,000 feet) in the Simla hills. It differs from its close ally *aënescens* Wied. in several minor but generally consistent characters. Firstly, the wing is nearly always *distinctly* darker towards the tip, the basal

half often being quite clear, whereas in *aënescens* it is uniformly pale brown and *never* clear at the base. The second distinguishing character is the antennæ, which are (exclusive of the reddish 1st joint) always black, or very nearly so, in this species, but much lighter, and brown, in *aënescens*. In *plumbellus* the posterior femora are often reddish on the apical half (in which case the base is generally paler yellow than the other legs), whereas in *aënescens* they are *always uniformly brownish yellow*, and the tips never black, as is often the case in this species.

S. aënescens Wied., 1830.

Ausser. Zweifl., ii, 579.

Although the author says wing with a brownish tip, enclosing the cross vein, I feel sure that I have correctly identified this species, and think Wiedemann's specimen must have been an abnormal one. In one or two specimens out of the series of sixteen in the Indian Museum collection, there is a *slight* darkening towards the tip, which is absent in most specimens. His description of the shining lead front, and the femora being distinctly mentioned as *not* red, and the extreme tip of the posterior femora *not* being black, lead me to suppose the Museum specimens are this species. Wiedemann's line as to the posterior femora being more or less brown towards the tip, applies to an occasional specimen, but the specific character is uniformly brownish yellow femora, quite different from the distinct *reddish* tinge on the apical half of many specimens of *plumbellus*. The Indian Museum series is from Bangalore, but I have two examples taken by myself at Shanghai on April 16th and May 6th, 1906. Wiedemann originally described both *plumbellus* and *aënescens* from China; probably both species, with *ferruginosus* Wied. and my new species *sanguinipes* are all distributed throughout the East generally.

S. costalis Wlk., 1859.

Proc. Linn. Soc. Lond., iii, 110.

Walker has described two species separately under this name, but neither has been seen by me. The author described the present species (♂) from the Aru Islands. I have had to place it and the next species in my analytical table according to the somewhat short descriptions supplied. Thus I have assumed by "abdomen and legs tawny" that the coxæ are tawny also. That they are good species I have no doubt, from the four spots on the face and frons. Both species seem to possess this number, whereas in *ferruginosus* Wied. and *crishna* Wlk., the only others bearing spots on the face, there are only two, and in *crishna* the mark is a small streak, not a "dot" as Walker terms it. In size, too, both this and the following species exceed their allies by two to three millimetres.

S. batjanensis, nom. nov.

Nom. nov. for *S. costalis* Wlk. (1861) preoccupied

Proc. Linn. Soc. Lond., v, 291.

Walker's second species under the name of *costalis* was described from Batjan, and appears quite distinct. The author calls it "ferruginous" as differing from "cinereous" under which term he described his Aru Islands species. The type is a ♂. I fail to understand Walker's remark "allied to *S. duplicans*," not being able to trace any such species. Immediately following his description of *S. costalis* (1) is a new species of his, *Lauxania duplicans*, which he could hardly confuse, or compare with a *Sepedon*. I presume his "hind femora denticulated" (in his Aru Islands species) refers to the row of spines present in all the species.

S. javanensis R. Des., 1830.

Essai sur les Myodaires, 677.

Figured in Macquart's Dipt. Exot., ii, pt. 3, pl. xxiv, 2, 2*a*, 2*b*.

(Syn.) S. javana, Macq., *loc. cit.*, ii, pt. 3, 177.

This species must be allied to my *sanguinipes*. From Macquart's plate, the wings appear to be uniformly coloured, whereas in my new species *sanguinipes*, they are quite distinctly darker towards the tip, and yellowish towards the costa.

Moreover Macquart mentions that the *four* anterior tarsi are enlarged in the ♂, whereas in all the examples of *sanguinipes* that I have examined, this enlargement is confined to the fore pair only. The longish hair below the four anterior tarsi, which Macquart mentions and figures as an additional or overlooked character of the species, is replaced in *sanguinipes* by the ordinary short pubescence common to all the species. As regards the dilatation of the fore tarsi, I find this is also the case in *ferruginosus* Wied. ♂; in both sexes in *sanguinipes*; and likewise in the single example of *crishna* Wlk. that I have seen, which is a ♀; so that the character appears to be common to several species in the genus, and not confined to the ♂ sex. In fact Macquart in his supp. iii, pt. 3, p. 219, to his previously mentioned work mentions a ♀ *javanensis* R. Des. with enlarged anterior tarsi. Again, Macquart's figure shows the posterior femora of uniform colour, whereas in my species the contrast is strikingly distinct between the bright yellow and brilliant red, with the extreme tip distinctly black; none of which characters appear in Macquart's figure. Moreover mine is a larger species, and lastly, Macquart shows the thorax rather lighter than the abdomen, with two very distinct black stripes, whereas in *sanguinipes*, the thorax is unicolorous blackish with the abdomen, and (when present) the two dorsal darker stripes are very indistinct.

S. sanguinipes mihi, sp. nov.

♂ ♀, Sœrabaya, Java, long. 7-8 mm.

Frons depressed, yellow, becoming brownish above, and nearly black on vertex, with a silvery leaden reflection seen from behind. Face below antennæ bright yellow, unmarked, cheeks a little darker; antennæ, 1st joint reddish yellow, bare; 2nd joint black, with short stiff hairs; 3rd black, slightly pale at base on upper side, with dorsal white arista. Proboscis yellowish brown with a few hairs. Thorax dull black, dorsum smooth and bare; lower part of sides with silvery leaden reflections seen from behind. Abdomen blackish leaden, sometimes with brownish reflections; bare, a few short hairs at tip. Legs, fore coxæ yellow, four posterior coxæ yellowish brown, all the coxæ in certain lights showing silvery white reflections: fore femora red, with black tips; middle femora generally all reddish, but sometimes yellowish for a greater or less part from the base, tips black; posterior femora, basal two-fifths bright yellow, the rest brilliant red, tip black; fore tibiæ dark brown or black; four posterior tibiæ variable, brown, reddish brown or blackish; tarsi dark brown or black; the fore pair distinctly wider than the middle and posterior pairs in both sexes. Wings grey, blackish towards tip, and slightly yellowish on anterior margin; halteres yellowish white. Described from about 30 specimens in the Indian Museum collection (where the type ♂ and ♀ are deposited) and my own.

With the exception of one ♀ taken near Calcutta, May 27th, 1907, in the Indian Museum, all the examples referred to were collected by me in the East and they record the following data: Sœrabaya, Java, 16th to 25th July, 1906 (in woods); Rangoon (about) February 9th, 1906; Hong-Kong, 5th March, 1906; and Calcutta, 22nd January, 1907 (in grass near ponds).

S. fuscinervis mihi, sp. nov.

♀, Sœrabaya, Java, long. 6 mm. The single example of this species was taken by me in company with the preceding, July 25th, 1906.

It varies by the wings being pale grey; without any yellowish colour on the anterior part; with the three longitudinal veins widely suffused from the discal vein to the wing border. Although I have only seen this one specimen, the wing suffusions appear to make it quite a distinct species. In all other respects it agrees with *sanguinipes*. In my collection.

S. ferruginosus Wied., 1830.

Ausser. Zweifl., ii, 577.

A common species in Calcutta and Rangoon, probably extending over a considerable area in this region. Its uniformly light

ferruginous colour will distinguish it from all other species except *crishna* Wlk., which latter is easily separated by its leaden black abdomen. The coloration of the posterior femora is variable, the difference between the pale yellow basal half and bright tawny red apical half being sometimes very striking, whilst in some specimens the colour is almost uniformly tawny. In its yellow face it is allied to Walker's first species named *costalis* (from the Aru Islands), but *costalis* has four black spots on its face and four black lines on its thorax, whereas *ferruginosus* has only two black spots (which are on the frons) and only two narrow black thoracic lines, close together, which sometimes form one broad band by the intervening space being darkened.

S. crishna Wlk., 1861.

Proc. Linn. Soc. Lond., v, 291.

The only specimen that I have seen (a ♀ in the Indian Museum collection), and that I can identify with this species was captured by Dr. Annandale's collector at Matiana (8,000 feet), Simla hills, on 28th to 30th April, 1907. It agrees in every particular with Walker's description, except that he says the dorsum of the thorax is *black*, whereas in the present specimen it is uniformly light ferruginous with the rest of the body. I think Walker's specimen may have been discoloured, and that my identification is correct.

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Two other species were described by Wiedemann, *senex* and *imbutus*; they are from unknown localities, and are in the Vienna Museum. I mention them because the author's other three species all occur in the East.

S. senex Wied. is grey haired, with blackish brown antennæ, the 3rd joint being whitish at the base; the face is yellow, frons reddish yellow with two brown streaks, thorax with two blackish lines on dorsum, and a white shimmer on the sides and front; abdomen brown, or in certain lights, blue; wings deep yellow with brown tips; legs reddish yellow, posterior pair rather reddish with pale base; the fore pair and the tibiæ black. ♂ long. 5½ mm.

The deep yellow coloured wings mentioned by the author readily distinguish this species. Locality ?

S. imbutus Wied. is dull leaden, differing from *senex* in the reddish yellow base of the 3rd antennal joint; frons and face pearl bluish; wings very lightly yellow, tips distinctly brownish, the darker colour extending to and enclosing the middle cross vein. Minor differences as regards the colour of the legs are mentioned. ♂ long. 5 mm. Locality ?

Either of these species may be found in the Oriental Region.