

Some nomenclatural notes on Indian Subregion Syrphini (Diptera—Syrphidae)¹

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Abstract. *Sphaerophoria rueppellii* (Wiedemann), *Syrphus ribesii* (Linnaeus) and *S. vitripennis* Meigen are recorded from the Indian subregion for the first time. Eight new combinations in the genera *Betasyrphus*, *Melangyna*, *Meliscaeva*, *Metasyrphus* and *Scaeva* are reported based on my examination of type specimens. Twenty-one new synonyms are proposed of 13 species in the genera *Asarkina*, *Betasyrphus*, *Dasysyrphus*, *Dideoides*, *Episyrphus*, *Macrosyrphus*, *Metasyrphus*, *Scaeva*, *Sphaerophoria* and *Syrphus*. *Syrphus alternans* Macquart and *S. nectarinus* Wiedemann are reduced again to junior synonyms of *Episyrphus viridaureus* (Wiedemann). Finally, four lectotypes are designated for species in *Dasysyrphus*, *Episyrphus*, *Macrosyrphus* and *Sphaerophoria*.

I had not included any synonymy originally discovered by me when I presented a diagnostic paper (Ghorpadé 1994) on new and known Indian subregion Syrphini, which was based on my doctoral and postdoctoral research (Ghorpadé 1981) done at Bangalore and Washington, DC (U.S.A.). But, since then some syrphid specialist colleagues (e.g., Claussen and Weipert 2003) have found out some of the same new synonymy and generic combinations during the course of their own studies of Oriental Syrphidae. Hence this note is here being presented to document the other new synonyms and combinations of 19 species in the subfamily Syrphinae yet unpublished by me, these being important original databases which will be useful for dipterists researching the Syrphidae flying in S. and SE. Asia and the tropical Pacific Ocean islands that make up the extended Oriental biogeographical region.

This note deals only with taxa in the Tribe Syrphini of the Subfamily Syrphinae, which include predacious species of these hover-flies or flower-flies. Synonymy, etc., of the other Syrphinae (Paragini, Bacchini), and the larger Subfamily Eristalinae will be presented in my forthcoming papers.

In my 1994 paper I had diagnosed and named 40 new species and 2 new genera of Syrphini from the Indian subregion (*q.v.*). I omitted to mention there that these following 3 species were being reported as first records from the Indian subcontinent, based on material collected, or specimens examined, by me :

FIRST RECORDS FROM THE INDIAN SUBREGION

Sphaerophoria rueppellii (Wiedemann), 1830

Syrphus rueppellii Wiedemann, 1830, *Aussereurop. Zweifl. Insekt.*, 2: 141 (♂?; type-locs.: Nubien, Abyssinia; lectotype ♂, Abyssinia (= Ethiopia) design. Vockeroth, 1971); Ghorpadé 1981: 86, 299; 1994: 13 [SMF, Frankfurt].

This tiny species is known from Europe and from northern Africa (Algeria, Canary Is, Egypt, Eritrea, Ethiopia, Kenya, Morocco), and also in Asia only from

¹ This paper is dedicated to the late George C. Steyskal in his centenary birth anniversary year, in remembrance of my time with him at the U.S. National Museum of Natural History, during my postdoctoral tenure in Washington, DC (1982-1983). Also as a token of my respect and gratitude for his extensive researches on acalyptrate flies, mostly, including also papers and notes on Indian species.

Syria, Israel, Afghanistan, Mongolia, northern China and Korea. Though taken in Afghanistan, which is in the Indian subregion according to my biogeographic analysis, it was not listed by Knutson *et al.* (1975: 318-319) among the 9 species of this genus catalogued from the Oriental Region. A Copenhagen Museum expedition, and then I, took 3 ♀ specimens from Tangmarg 2200m and Srinagar 1893m, respectively, in Jammu & Kashmir (India) in August and October. Appears to belong in the *contigua*-group of Knutson (1973).

***Syrphus ribesii* (Linnaeus), 1758**

Musca ribesii Linnaeus, 1758, Syst. Nat., ed. 10, 1: 593 (♂?; type-loc.: "Svecia" = Sweden; lectotype ♀, England, design. Vockeroth 1983) [BMNH, London].

Syrphus ribesii (Linnaeus): Ghorpade 1981: 91, 309; 1994: 14.

Syrphus himalayanus Nayar, 1968, Agra Univ. J. Res. (Sci.), 16: 121 (♀; type-loc.: Monaslu gorge 2134-2438m, nr Manali, Himachal Pr., India) [ZSI, Calcutta—lost?]. **syn. nov.**

This is a widely distributed nominotypical species of the family Syrphidae ranging all across the Holarctic. In Asia it has been reported from Afghanistan, Mongolia, Japan and northern Russia. The record by Sack (1913) from Formosa (= Taiwan) needs to be confirmed and most probably is a misidentification. Nayar's (1968) record from NW. Himalaya (India) as "*himalayanus*," a new species, was the first authentic record of *ribesii* from the Indian subregion. I did not find his holotype in Calcutta. Nayar's (1968) description and figure show it to be a synonym of *ribesii* and the type to be a ♀ and not a ♂ as indicated in his paper. I have seen 12 ♂♀ specimens in the Copenhagen Museum loan material, as well as have taken flies in the field myself from Gulmarg 2600-3000m, Srinagar 1893m (Jammu & Kashmir), Dalhousie 2133m, Manali 1828m, 19km S. Manali 1500m (Himachal Pradesh), and Mussoorie 2005m (Uttarakhand). In my doctoral thesis (Ghorpade 1981: 309-311) I wrote "It is a large, bright, robust *Syrphus* and the distinctive shape of the black markings on sterna 2 and 3 and the bare eyes will readily identify this species. It seems to be quite common at least on the higher parts of the northwest Himalaya." It should fly in Pakistan and Nepal also, but no published records are yet available from those countries with the Himalayan range. Material examined by Claussen and Weipert (2003) from the Nepal expedition (in 1992, 2001) failed to turn up this species though they reported *Syrphus fulvifacies* Brunetti and *S. torvus* Osten Sacken from Nepal.

***Syrphus vitripennis* Meigen, 1822**

Syrphus vitripennis Meigen, 1822, Syst. Besch. Zweifl. Insekt., 3: 308 (♂?; type-loc.: Europe); Ghorpade 1981: 91, 312; 1994: 14 [MNHN, Paris?]

This is a Palaearctic species found all over Europe and in northern Asia from Russia and Mongolia to Japan, Siberia and Kamchatka, the Kurile and Sakhalin Is. Also recorded from Iran and Afghanistan. Joseph and Sharma (1976) reported it from W. Sikkim (Totha Pani) and Shillong in NE. India but this record and Sasakawa's (1960) and Shiraki's (1930) from Thailand and Formosa (Taiwan) need to be confirmed through fresh collecting on the eastern Himalaya and Indochina. I have taken specimens (31 ♂♀) only in the Kashmir valley and Ladakh (Srinagar 1893m, Leh 3500m) on the western Himalaya, in June and October.

NEW COMBINATIONS OF INDIAN SPECIES

Betasyrphus aeneifrons* (Brunetti), 1913, **comb. nov.*

Syrphus aeneifrons Brunetti, 1913, Rec. Indian Mus., 8: 159 (♂; type-loc.: between Kalek and Misshing, NE. Frontier, India); Ghorpade 1981: 44, 144; 1994: 8 [ZSI, Calcutta—examined]

Syrphus transversus Brunetti, 1913, Rec. Indian Mus., 8: 160 (♀; Sadiya, Assam, India) [ZSI, Calcutta—examined] **comb. nov. [& syn. nov. ?]**

Betasyrphus aeneifrons Brunetti and *B. transversus* Brunetti (both as 'Syrphus') were described in the same paper (Brunetti 1913) based on a male and female 'type' respectively. The former from Arunachal Pradesh (between Kalek and Misshing, formerly in 'N.E.F.A.' = North East Frontier Agency) and the latter from extreme northeast 'Assam' (Sadiya). I consider that both are opposite sexes of one species and so have synonymized them here (Ghorpade 1981: 44, 146). As first reviser, I select *aeneifrons* (Brunetti) as the valid name for this species. The record of *transversus* (Brunetti) from Ceylon (Sri Lanka) by De Silva (1961), based perhaps on a determination by specialists in the Natural History Museum (then British Museum; *vide* J.L. Vockeroth, *in litt.*), is in all probability erroneous. Vockeroth (*in litt.*) had written me that there are four females in the London museum named as "*transversus*," which, he said were a small *Betasyrphus* with greatly reduced wing microtrichia and with broad reddish-orange fasciae on terga, which he thought were identical to *albipilus* (Coe). I however consider that these London *transversus* specimens are perhaps my *Betasyrphus linga* known so far only from peninsular India and not yet found in Sri Lanka except for these four London based female specimens, if conspecific. And, *albipilus* Coe is a new synonym of *bazini* (Brunetti), *vide infra*, and occurs only on the Himalayas and in northern India, and is not found in southern India. Until recently, all specimens of *Betasyrphus* from this subcontinent were named as *serarius* (Wiedemann) which is now known to occur only in China (and SE. Russia ?) and perhaps also in the Indochinese peninsula. This is my analysis after examining the holotype of *serarius* [UZM, Copenhagen] and many other specimens from the Sino-Malayan subregion. *B. aeneifrons*, based on specimens so far seen by me, appears to fly mostly in NE. India and the eastern Himalaya, though its westernmost record is from Garjia on the Himalayan foothills in former Uttar Pradesh. Claussen and Weipert (2003: 345) reported 4♂♂ from Nepal recently, those being the first records of *aeneifrons* from that Himalayan country.

***Betasyrphus bazini* (Brunetti), 1925, comb. nov.**

Syrphus bazini Brunetti, 1925, comb. nov. & nom. nov., for *Pipizella rufiventris* Brunetti, 1915, not *Pipizella rufiventris* Macquart, 1849; Ghorpade 1981: 44, 147; 1994: 8.

Pipizella rufiventris Brunetti, 1915, Rec. Indian Mus., 27: 75 (♀; Kousanie 6075ft, Kumaon District, Uttar Pradesh, India) [ZSI, Calcutta—examined], **comb. nov.**

Syrphus albipilus Coe, 1964, Bull. Br. Mus. Nat. Hist. (Ent.), 15: 263 (♀; Arun Valley, Tumlingtar Plateau, E. Nepal); Claussen and Weipert, 2003: 345 (Nepal) [BMNH, London—examined], **syn. nov.**

This species was first described as *Pipizella rufiventris* by Brunetti (1915) from the hill resort of Kousanie (in Uttarakhand now) for a single female specimen (wrongly stated as a male). Then Hervé-Bazin (1924: 289) transferred it to the genus *Syrphus* but as this made it a junior homonym of *Syrphus rufiventris* Macquart, 1849, Brunetti (1925) proposed the new name *bazini* for it. Even with the present transfer of *rufiventris* to *Betasyrphus*, the name *bazini* still remains valid, as all homonyms replaced before 1961 do (*vide* ICZN Code). My examination of the female holotype of *albipilus* Coe showed this Nepalese specimen to be the same as *bazini*, and so a junior synonym, as confirmed here. Specimens of this species, distinctive with its broad reddish-yellow tergal fasciae, have been examined and confirmed from the eastern Himalaya (Pashok and Kalimpong in West Bengal, Tonglu in Sikkim) as well as near Netarhat 1000m, now in Jharkhand (erstwhile southern Bihar). One other female has been seen from Katmandu (Nepal) besides the type of *albipilus* Coe.

***Betasyrphus isaaci* Bhatia, in Bhatia and Shaffi, 1933, comb. nov.**

Syrphus isaaci Bhatia, in Bhatia and Shaffi, 1933, Indian J. agric. Sci., 2: 566 (♂; Pusa, Bihar, India); Ghorpade 1981: 44, 154; 1994: 8 [ZSI, Calcutta—examined].

This most widespread *Betasyrphus* in the northern parts of this subcontinent appears to be more abundant in the north-western areas, unlike *aeneifrons*

which seems to be more north-eastern (*vide supra*) in range (see Ghorpade 1994: 8). Unlike the latter, *isaaci* lacks the erect hair tuft on the upper surface of the lower squamal lobe. Claussen and Weipert (2003: 346) have also reported many specimens from Nepal. It ranges from Kashmir to West Bengal and Meghalaya, has been taken in Burma, but not yet from Pakistan, Bangladesh or Bhutan. I also examined the allotype ♀ of *isaaci* Bhatia in New Delhi [IARI]. A specimen (the "holotype ♂") in Calcutta had a label '*Syrphus instabilis* Brunetti' which indicates that Brunetti had recognized the novelty of this species but never got to publish his name for it. In Calcutta there are two other specimens of this species, a ♂ and ♀, from Painsur 7000ft and from Almora 5500ft, with labels "*Syr. plumbicinctus* Brun. Type det. Brun. 1923" which also indicates that Brunetti discovered these to be new species after finishing his manuscript for the FAUNA volume published in 1923, but did not use this even in his later follow-up paper (Brunetti 1925), perhaps by oversight? I have also seen specimens of this species from south-western China (Yunnan). Like others of this distinctive genus, it has also been misidentified earlier as *serarius*, and the male terminalia figured by Vockeroth (1969: fig. 37) is also of this species and not of "*serarius*" as specified there.

***Melangyna remota* (Brunetti), 1923, comb. nov.**

Syrphus remotus Brunetti, 1923, Fauna Br. India, Dipt., 3: 78 (♂; Kufri, nr Simla, Himachal Pradesh, India); Ghorpade 1981: 70, 235; 1994: 5 [ZSI, Calcutta—examined].

Brunetti (1907a: 169, 1908: 57) first recorded this Palaearctic genus' species as '*Syrphus umbellatarum*, F.' as he had identified a male taken by Nelson Annandale from Matiana on the Simla Hills (W. Himalaya). In his ultimate definitive paper on "Diptera of the Simla Hills" (Brunetti, 1917: 84) he simply wrote "One ♂, Matiana. A well known European species." The first recognition of a species of *Melangyna* Verrall from the Indian subregion was therefore by Brunetti himself who misidentified it as *umbellatarum* which is a common *Melangyna* (s. str.) species flying in Europe. What happened to the first male from Matiana is a mystery as I did not find it in the museum at Calcutta which holds the holotype ♂ specimen (headless). I have myself collected 10 females of *remota* from the western Himalaya (this sex taken for the first time) from Srinagar 1893m (Jammu & Kashmir), Dalhousie 2133m, Kufri 2600m, Narkanda 2743m (all in Himachal Pradesh), Dhakuri 2621m, and the Pindari Glacier 4115m (Uttar Pradesh; now Uttarakhand).

***Meliscaeva tribeni* (Nayar), 1968, comb. nov.**

Baccha tribeni Nayar, 1968, Agra Univ. J. Res. (Sci.), 16: 128 (♂; Hindustan-Tibet road from Narkanda, Simla Hills, Himachal Pradesh, India); Ghorpade 1981: 72, 254; 1994: 12 [ZSI, Calcutta—examined]

The holotype was examined in Calcutta and showed that this species which Nayar had placed in *Baccha* was in fact a ♂ with narrow abdomen. Nayar's description is extremely poor and the dark cross marking shown by him on tergite 3 in his figure is actually a post-mortem darkening caused by body interior muscles showing up on the translucent tergal segment. I have another specimen of this species in my collection showing just such a marking. Nayar's sole type (glued to pith base; antennae lost, left wing damaged) was taken from about 67km north of Narkanda and I have collected another 28♂♀ from Dalhousie 2133m, Dhenkund 2743m, Kalatop 2438m (Himachal Pradesh), Mussoorie 2005m, Khati 2210m and Dhakuri 2621m (now Uttarakhand). This then appears to be a Western Himalaya track species.

***Metasyrphus nuba* (Wiedemann), 1830**

Syrphus nuba Wiedemann, 1830, Aussereurop. Zweifl. Insekt., 2: 136 (o?; type-loc.: 'Nubien' = Sudan); Ghorpade 1994: 11 [SMF, Frankfurt?]
Syrphus interruptens Walker, 1871, The Entomologist, 5: 273 (o?; Wady Nash, Cairo, Egypt); Ghorpade 1981: 75, 264 [BMNH, London]

?*Didea annandalei* Brunetti, 1919, Rec. Indian Mus., 16: 299 (♂; Nasratabad, Seistan, Iran) [ZSI, Calcutta—examined] **comb. nov. & syn. nov.**

I examined Brunetti's holotype ♂ of *Didea annandalei* in Calcutta during my doctoral research and found it to be misplaced in *Didea* and belonging to the genus *Metasyrphus*. At that time, with the literature databases available I identified it as *interrumpens* (Walker) and placed *annandalei* as its junior synonym in my Ph.D. thesis (Ghorpade, 1981: 75, 264), based on the work of Dušek and Láska (1976). Then Dušek and Láska (1980) wrote another paper on *Metasyrphus* from Afghanistan and Kirghizia where they described a new species *pseudonitens* from Afghanistan. Chris Thompson (*in litt.*) informed me later that *frequens* Matsumura, 1917, could be a senior synonym for this species. The type locality of *annandalei* is in Seistan (Iran) which province is immediately west of Baluchistan (Pakistan) and south-west of Afghanistan. Recently, Mazanek *et al.* (1998) discovered that *pseudonitens* had an earlier published name *bucculatus* Rondani, 1857, that had priority. In fact, specimens of *M. bucculatus* Rondani have been taken and seen by me from the Indian subregion (some 100+ specimens) and are distinct from *interrumpens* which latter is now a junior synonym of *nuba* Wiedemann (Peck 1988: 36) which then becomes the name to be used for Brunetti's *annandalei*. Vockeroth had sent me one female of *interrumpens* that had been collected at Balaju 1372m, near Katmandu (Nepal) and it remains to be confirmed if Nayar's (1968) identification of "*Didea annandalei*" from Narkanda (Himachal Pradesh, NW. India) was correct. I also studied more specimens of *nuba* sent on loan [IRSNB, Brussels] from Syria and Iran. The Palaearctic catalogue (Peck 1988: 36) gives its distribution as "Asia: Afghanistan, Mongolia; North Africa: Morocco, Egypt; Afrotropical Region," omitting Sudan which is the provenance of the holotype! Dušek and Láska (1976) also saw specimens from Yugoslavia, Palestine, Syria, Israel, Armenia and Nepal. My researches also found specimens from Syria, Iran, and Nepal. *M. nuba* (Wiedemann) [= *interrumpens* Walker, *rufinasutus* Bigot, *novigradensis* Coe] is very similar to *latifasciatus* and should occur on the NW. Himalaya, in Kashmir and Himachal Pradesh.

Even though current treatment chooses to use *Eupeodes* Osten Sacken, 1877 as senior to *Metasyrphus* Matsumura, 1917 (see Vockeroth 1986), and I had used the former in my own paper (Ghorpadé 1994: 10), I am retaining the latter genus name here as a precautionary course of action until the large assortment of species of this "genus" can be worked on a worldwide revisionary scale and the many "subgenera" (like *Lapposyrphus* Dušek and Láska, 1967, and *Macrosyrphus* Matsumura, 1917) can be also resolved finally as to real status. In this paper I have resuscitated the latter subgenus to genus status and given reasons (*q.v.*, *vide infra*).

Scaeva latimaculata (Brunetti), 1923

Lasiopticus latimaculata Brunetti, 1923, Fauna Br. India, Dipt., 3: 68 (♂; Allahabad, India); Ghorpade 1981: 80, 284 [BMNH, London—examined]

Xanthogramma pruthii Deoras, 1943, Indian J. Ent., 4: 217 (♀; Delhi) [IARI, New Delhi—examined], **comb. nov. & syn. nov.**

Xanthogramma indica Nayar, 1968, Agra Univ. J. Res. (Sci.), 16: 129 (♀; Kalatop 2440m, nr Dalhousie, Himachal Pradesh, India) [ZSI, Calcutta—examined], **comb. nov. & syn. nov.**

Scaeva montana Violovitsh, 1975, Ent. Obozr., 54: 177 (♂; Takob River 1800m, Hissar Range, Tadzikistan); [ZIAS, Leningrad], **syn. nov.**, *vide* Dušek and Láska, 1985: 219, citing Ghorpade, *in litt.*

This small *Scaeva* is often mistaken for the related *albomaculata* (Macquart) but *latimaculata* is distinctly smaller and its pale tergal spots are confluent with the lateral abdominal margins. The types of "*Xanthogramma*" *pruthii* Deoras and *indica* Nayar were examined and revealed these to be synonyms and *Scaeva* species, as above indicated. I have also seen specimens of this species in the London museum, and elsewhere, misidentified and labelled as "*albomaculata*,"

which latter is more European (Palearctic) in range and enters the Indian subcontinent only in its extreme north-western boundary. I have seen Indian subregion specimens of *albomaculata* only from Quetta, Chitral and Bannu in Pakistan (also from Iran) and am yet to record it from India. Specimens of *latimaculata* have been examined from Iran, Pakistan (Quetta 1676m, Mekran, Taimergarha, Lyallpur) and India (Srinagar 1893m, Simla 2133m, Dhalli 2300m, Jullundur, Delhi). Violovitsh (1975) was perhaps not aware of *latimaculata* as a species of *Scaeva* and described *montana* from Tadzikistan. His figures and description indicate it to be also synonymous as Dušek and Láska (1985: 219) found out themselves, after corresponding with me. Kuznetsov (1985: 402, figs 43-48) listed and figured it as *montana* Violovitsh. *Scaeva latimaculata* is found frequently in farmland as an aphid predator about Delhi and I have also seen specimens from Rajasthan and West Bengal, as well as from Afghanistan.

NEW SYNONYMY OF INDIAN SPECIES

Asarkina incisuralis (Macquart), 1855

Syrphus incisuralis Macquart, 1855, Dipt. Exot., suppl., 5: 94 (♂; Inde) [OUM, Oxford]
Asarkina incisuralis: Ghorpade 1981: 41, 137; 1994: 7.
Asarcina ericetorum var. *formosae* Bezzi, 1908, Anns hist.-nat. Mus. Natn hung., 6: 499 (♂♀; Takao, Taiwan) [HNHM, Budapest—lost?], **syn. nov.**

This is the most abundant and widely distributed species of *Asarkina* in this subcontinent as well as elsewhere in the Orient. Earlier authors have all misidentified and named it either as *ericetorum* (Fabricius) or as *salviae* (Fabricius), both of which are distinct Afrotropical species! I have however seen specimens in the Dehra Dun Forest Research Institute [FRI] labelled as *incisuralis* by the well known American specialist C.H. Curran, possibly loaned to him for identity. Bezzi's *formosae*, described as a variety but made a subspecies in the Oriental Catalog (Knutson *et al.*, 1975: 309) is a junior synonym. I have examined many hundred specimens of *incisuralis* from most parts of India and also from Nepal, Bangladesh and Sri Lanka, as well as China. It is yet unreported from Burma and Bhutan though it surely occurs there, but Pakistan may be too dry or westerly for this dominantly palaeotropical genus flying in moist habitats.

Dasysyrphus orsua (Walker), 1852

Syrphus orsua Walker, 1852, Insecta Saundersiana, 3: 231 (♀; East Indies) [BMNH, London—examined]
Dasysyrphus orsua (Walker): Ghorpade 1981: 47, 170; 1994: 9.
Syrphus brunettii Hervé-Bazin, 1924, Anns Soc. Ent. Fr., 92: 290 (♂♀; Mundali, Matiana, Kurseong, Darjiling; **lectotype** ♂, Matiana **present design.**) [ZSI, Calcutta—examined]; nom. nov. for *albostriatus* Brunetti, 1923 not Fallén, 1817, misident.), **syn. nov.**
Syrphus albostriatus Fallén: Brunetti, 1923: 72.

The holotype in the London museum is headless but of the female sex and identical to specimens of *brunettii* flying in the Himalayas. Vockeroth (*in litt.*) had written to me about this obvious synonymy he had noticed after examining the holotype. Claussen and Weipert (2003: 346) found it in Nepal and gave *brunettii* as a synonym and my (Ghorpadé 1994) citation without mentioning it as a new synonym. They also give records from Uttar Pradesh (Uttarakhand region?), and Sikkim, without indicating sources. I have seen over 100 specimens of both sexes and can confirm this. Though Brunetti (1923) misidentified it as *albostriatus* Fallén, he had later recognized his mistake and planned to name it 'deceptor' nom. nov., as is evident from his labels on the type series (three paralectotypes in Calcutta also designated by me, from Mundali and Kurseong). This species is of common occurrence especially on the Himalayas (western) and has been taken also in Nepal (Coe 1964: 261), though not yet in Pakistan,

Burma or Bangladesh. Keiser's (1958) record of *orsua* from Sri Lanka is almost certainly erroneous and his material must represent either my new species *rossi*, or another yet undescribed, endemic to Sri Lanka.

***Dideoides kempi* Brunetti, 1923**

Dideoides kempi Brunetti, 1923, Fauna Br. India, Dipt., 3: 59 (♂; above Tura, Garo Hills, Meghalaya); Ghorpade 1981: 51, 184; 1994: 10 [ZSI, Calcutta—examined].

Syrphus pellucidipennis Coe, 1964, Bull. Br. Mus. Nat. Hist. (Ent.), 15: 259 (♀; Sangu, Taplejung Dt, E. Nepal) [BMNH, London—examined], **syn. nov.**

This robust and beautiful species of a rare and seldom field observed genus is extensively black on the abdominal terga and shows variable development of the transverse yellow spots on terga 2 and 3. It is here confirmed that the melanoid ♀ (from Shillong 4900ft, Kemp ?) of '*ovatus*' described by Brunetti (1923: 61-62) also belongs to *kempi* (misidentification). This species is known from the Garo and Khasi Hills in Meghalaya and the records from above Sangu 2800m in E. Nepal (as *pellucidipennis*) and from Burma (♀, Kambaiti 2000m, Malaise) examined by me are extensions of its range.

***Dideoides tigerinus* (Bigot), 1885**

Ischyrosyrphus tigerinus Bigot, 1885, Anns Soc. Ent. Fr., (6) 5: 249 (♂; India) [OUM, Oxford—examined].

Dideoides tigerinus Bigot: Ghorpade 1981: 51, 188; 1994: 10.

Syrphus chrysotoxoides Curran, 1928, J. fed. Malay St. Mus., 14: 201 (♀; Nakhon Si Thammarat, Khao Luang 5800ft, Thailand) [BMNH, London—examined], **syn.**

nov.

Vockeroth (*in litt.*) had written me after examining London museum material : "6♂ (one headless), 1♀ in the BMNH. All N. Khasi Hills or Khasi Hills, Assam. Third vein very broadly and smoothly dipped, almost straight. Wing trichose except for very narrow bare strip just behind spurious vein on basal 2/3 of anal cell. Terminalia small, cerci normal . . ." I also examined 1♀ labelled as *chrysotoxoides* (Curran) from Thailand [in AMNH, New York] and note it is a junior synonym of *tigerinus* Bigot. So far known only from Meghalaya (India), Burma and Thailand.

***Dideoopsis aegrota* (Fabricius), 1805**

Eristalis aegrota Fabricius, 1805, Syst. Antliat., p. 243 (♀; China) [UZM, Copenhagen—examined].

Dideoopsis aegrota (Fabricius): Ghorpade 1981: 52, 190.

Asarkina pura Curran, 1928, J. fed. Malay St. Mus., 14: 230 (♀; Ampang 600ft, Selangor, Malaya) [BMNH, London—examined], **syn. nov.**

This is one of the largest species of Syrphinae and very distinctive owing to its bright orange-yellow and black coloration and the broadly black-banded wings. After examining hundreds of specimens from all over the Oriental region, and two specimens even from Australia, which is a new regional record here, and doing dissections of terminalia, I remain convinced it is a single species with some irregular variation which is not linked to geographical areas. The species *fascipennis* Macquart (Java), *ellenriederi* Doleschall (Amboina, Moluccas), and *infirmus* Rondani (Sarawak, Borneo), *vide* Knutson *et al.* (1975: 313), and *pura* (Malaya) are all synonyms. Hull's *hemipennis* ('type' examined in CNC, Ottawa) is probably a *nomen nudum* (see Curran 1947: 4), but is also a synonym. In some specimens the black wing cross-band begins from the base of the wing hazily, but this is variable, as Brunetti (1913: 164; 1915: 210) also noticed. In this subregion it has been recorded from all countries except Pakistan and Bhutan.

***Episyrphus viridaureus* (Wiedemann), 1824**

Syrphus viridaureus Wiedemann, 1824, Analecta Ent., p. 35 (♂; Java) [UZM, Copenhagen—examined].

Episyrphus viridaureus (Wiedemann): Ghorpade 1981: 60, 208; 1994: 10.

- Syrphus nectarinus* Wiedemann, 1830, Aussereurop zweifl. Insekt., 2: 128 (♂♀; China; **lectotype** ♂, **present design.**, China) [UZM, Copenhagen—examined], **stat. rev.**
- Syrphus alternans* Macquart, 1842, Dipt. Exot., 2(2): 89 (♂♀; Coromandel, India) [MNHN, Paris], **stat. rev.**
- Syrphus triligatus* Walker, 1857, J. Linn. Soc. Lond., 1: 19 (♂; Mt Ophir, Malaya) [BMNH, London—examined], **syn. nov.**
- Syrphus heterogaster* Thomson, 1869, in K. svenska fregatten Eugenie Resa, Zool., Dipt., p. 498 (♀; China) [NRS, Stockholm—examined], **syn. nov.**
- Syrphus balteatus* var. *formosae* Sack, 1913, Ent. Mitt., 2: 5 (♂; Taiwan) [SMF, Frankfurt ?], **syn. nov.**
- Syrphus graptus* Hull, 1944, Psyche, Camb., 51: 22 (♂; Sozan, Taiwan) [MCZ, Cambridge, now CNC, Ottawa ?], **syn. nov.**

This is a classical example of a widely distributed species being misidentified when geographical distributions were ignored. Brunetti (1923) and Curran (1928), came to different conclusions, studying material they had access to. Curran felt careful studies of immatures and life cycles of *balteatus*, *viridaureus*, *alternans* and *nectarinus* would result in discovery of several cryptic species, but Brunetti thought only one variable species was involved. I have examined 1,000+ specimens (also from China, the Philippines, Sumatra, Java, Borneo, Celebes, Malaya, Thailand, Laos, Taiwan, New Guinea, Batjan, New Hebrides, New Caledonia, Lombok, Bali and Obi Is.), and found only one variable species, *viridaureus*, all over the Oriental Region, being replaced in the Palaearctic by *balteatus*, which enters our subcontinent only in the northwestern border areas. Dark or pale specimens are governed by the temperatures at which their pupae develop (see Dušek and Láška 1974), *alternans* being light coloured and so most peninsular Indian specimens are pale. In China and Indochina and Himalayan (eastern) India darker specimens fly which have been named *nectarinus* whose black sternal fasciae may sometimes reduce into two narrow triangular transverse spots laterally. I have therefore synonymised all names for populations in tropical and subtropical areas of the Orient under the oldest name *viridaureus* which can be separated from the temperate Palaearctic *balteatus* by their diagnostic sternal markings. The treatment of Claussen and Weipert (2003: 354–356), restoring *alternans* and *nectarinus* as good species, using the colour of frontal and scutellar hairs and the angle of approximation of eyes in males (but this not used for *balteatus*) is again a result of looking at individual variation in limited regional material available and not examining large collections from all parts of the range as I have done. Again, they do not treat *viridaureus* at all, and of *alternans* they only cite females in the Nepal material taken in the hot summer months of May and June which should, obviously, be paler. Their *nectarinus* material was collected in the wet, colder months from July to December, and hence are darker. I see this as a clinal variation in one species, *viridaureus*, where larger and darker specimens (*nectarinus*) fly in the northern colder, wetter areas, and smaller, lighter specimens (*alternans*) in the hotter areas in the south, mainly in the more open, dry Indian peninsula.

Macrosyrphus confrater (Wiedemann), 1830

- Syrphus confrater* Wiedemann, 1830, Aussereurop. Zweifl. Insekt., 2: 120 (♀; China) [UZM, Copenhagen—examined]
- Macrosyrphus confrater* (Wiedemann): Ghorpade 1981: 67, 227.
- Eupeodes confrater* (Wiedemann): Ghorpade 1994: 11; Claussen and Weipert 2003: 356.
- Syrphus cranapes* Walker, 1852, Insecta Saundersiana, 3: 231 (♀♀; E. Indies; **lectotype** ♀ **present design.**, E. Indies) [BMNH, London—examined].
- Syrphus mundus* Walker, 1852: Insecta Saundersiana, 3: 230 (♂; E. Indies) [BMNH, London—examined].
- Syrphus macropterus* Thomson, 1869, in K. svenska fregatten Eugenie Resa, Zool., Dipt., p. 498 (♀; China) [NRS, Stockholm—examined], **syn. nov.**
- Syrphus trilobatus* Bigot, 1884, Anns Soc. Ent. Fr., (6) 4: 86 (♂; Indes) [OUM, Oxford—examined].

Syrphus torvoides de Meijere, 1914, Tijdschr. Ent., 57: 155 (♀; Nongkodjadar, Java) [ZMA, Amsterdam—examined], **syn. nov.**

Syrphus (Macrosyrphus) okinawae Matsumura in Matsumura and Adachi, 1917, Ent. Mag., Kyoto, 2: 23 (♂; Kumamoto, Okinawa I; lectotype ♂ design. Vockeroth 1973.) [EIHU, Sapporo], **syn. nov.**

This is another large species of Syrphini, much larger in average than almost all other species of the genus *Eupeodes* Osten Sacken (= *Metasyrphus* Matsumura ?). Knutson *et al.* (1975: 317) placed *confrater* in the subgenus *Metasyrphus* Matsumura and included *cranapes* Walker, *mundus* Walker and *trilimbatus* Bigot as synonyms. I have examined female types of *macropterus* Thomson and *torvoides* de Meijere and also found them identical. Vockeroth (1973) examined the male type of *okinawae* Matsumura (type-species of *Macrosyrphus* Matsumura) and was unable to find differences in terminalia and hence I synonymize it also here. This species is highly variable, even in male terminalia, as observed by me, by examining more than 100 specimens from all over the Orient. In our subcontinent it ranges all the way from Afghanistan and Pakistan to Arunachal in NE. India and south to Sri Lanka. I have not yet seen specimens from Bhutan, Bangladesh or Burma, however. One wonders if populations of this special predator of woolly aphids and adelgids have not been introduced into peninsular India (western Ghats) with their prey insects through commerce ?

Regarding the most appropriate generic position of *confrater*, I now prefer to use *Macrosyrphus* for this unusually large, vaguely *Metasyrphus* or *Eupeodes*-like species. Even Vockeroth (1969) had placed it separately in his "*confrater*-group" as against others of *Metasyrphus* which he placed in *Lapposyrphus* Dušek and Láska or in *Metasyrphus* Matsumura. Only species of the *corollae*-group with modified terminalia, like the type-species *volucris*, could be *Eupeodes* (s.str.) ?

***Sphaerophoria bengalensis* Macquart, 1842**

Sphaerophoria bengalensis Macquart, 1842, Dipt. Exot., 2(2):104 (♂; Bengal, India) [MNHN, Paris]; Ghorpade 1981: 85, 292; 1994: 13.

Sphaerophoria flavoabdominalis Brunetti, 1915, Rec. Indian Mus., 11: 214 (♂♀; as "form 1" : Baluchistan, Bushire, Katmandu, Dharampur nr Simla, Agra, Ferozepore, Purneah. **Lectotype** ♂, Simla Hills, Dharampur, **present design.**) [ZSI, Calcutta—examined], **syn. nov.** (tentatively synonymized by Vockeroth 1971)

Sphaerophoria turkmenica Bankowska, 1964, Annls Zool., Warsz., 22: 345. (♂; Berg Siunt, W. Kopet Dag, Turkmenistan) [ZIAS, Leningrad], **syn. nov.**

This is a widely distributed species of the *scripta*-group (*sensu* Knutson 1973) ranging from Iran and Turkmenistan along the Himalayas to W. Bengal (not recorded yet from Bangladesh). I have examined 3♂ 5♀ from Deolali hill station on the Western Ghats near Nasik, north of Poona. This is a curious far south record for an otherwise trans-Himalayan species also found on the Indo-Gangetic Plains in winter months, and needs to be confirmed. Again, this could be accidental introduction with aphid prey on a horticultural garden host plant ? Vockeroth (1969: 132) also examined specimens of this species from "S. India," which may as well be questionable. Brunetti's *flavoabdominalis* is here confirmed as a junior synonym, following Vockeroth's (1971: 1629, 1634) tentative suggestion and my examination of the syntypes. The descriptions and figures in Bankowska (1964) and Knutson (1973) of *turkmenica* are identical to *bengalensis* and it is here synonymized.

***Sphaerophoria macrogaster* (Thomson), 1869**

Syrphus macrogaster Thomson, 1869, in K. svenska fregatten Eugenie's resa, Zool., Dipt., p. 501 (♂; Sydney, Australia) [NRS, Stockholm].

Sphaerophoria macrogaster (Thomson): Ghorpade 1981: 86, 297; 1994: 13.

Sphaerophoria poonaensis Joseph, 1967, Bull. Ent., 8(2): 79 (♀; Poona) [ZSI, Calcutta—examined], **syn. nov.**

This is the most common species of this genus here and occurs all over the Orient, the eastern Palaearctic and even Australia. Besides *knutsoni* Ghorpadé it is the only species of *Sphaerophoria* that flies in tropical peninsular India and Sri Lanka, apart from the questionable record of *bengalensis* (*vide supra*). The holotype ♀ of *poonaensis* Joseph examined in Calcutta showed it to be a synonym. It appears to belong to the *scripta*-group of Knutson (1973).

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