

Diagnostic keys to new and known
Indian subcontinent Syrphini (Diptera : Syrphidae)

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black-haired?
brownish black?
I have been rethinking these. I would
write with white-haired thorax, but
either thorax white-haired or thorax
white haired.
I think either brownish black
or brownish black could
be used. Perhaps the former
is better as it covers a wider range,
which should be used.
Especially the Vockerothia Matile, generic
name published in
added in 'white haired'
etc. should be deleted.

ABSTRACT. This paper provides keys to the 28 genera and 111 species (including 2 species not included in keys but their differences indicated in footnotes, based on descriptions in recent publications) of Indian Syrphini recognized by me. Of these, 2 new genera (Agnisyrphus and Vockerothia) and 40 new species [of Agnisyrphus (2 spp.), Allobaccha (2), Allograpta (1), Asarkina (5), Betasyrphus (2), Chrysotoxum (1), Citrogramma (2), Dasysyrphus (3), Didea (2), Epistrophe (2), Leucozona (3), Meliscaeva (6), Parasyrphus (3), Rhinobaccha (2), Sphaerophoria (2), Syrphus (2)] are diagnosed and named here. A checklist of the genera and species of Syrphini of India and adjacent countries is presented alphabetically, as well as illustrations showing morphological characters used in the keys.

Introduction

Enrico Brunetti completed a revision of Indian Syrphidae in the Fauna of British India series (1923), followed by a small paper (1925) as a supplement. Vockeroth (1969) presented an excellent review of the genera of world Syrphini, which made necessary a re-examination of the Indian fauna of this tribe, using more stable morphological characters, like male terminalia, wing microtrichia, pleural hairing, etc. The Catalog of Oriental Syrphidae by Knutson, Thompson & Vockeroth (1975) stabilized nomenclature and updated information, listing 23 genera and 78 species (inclusive of 6 subgenera and 9 unplaced species) of Syrphini from India and adjacent countries, out of a total of 71 genera and 312 species of the entire family Syrphidae from the subcontinent.

The only papers treating new taxa from this area, subsequent to those listed in the Oriental Catalog, were by Dušek & Láska (1980, 1985) on Afghanistan Metasyrphus (now Eupeodes) and world Scaeva, by Kuznetsov (1985) on Palaearctic Scaeva, by Datta & Chakraborti (1986) who described a new Meliscaeva from north-east India, by Vockeroth (1986) who decided that Eupeodes should be used for species placed in Metasyrphus, by Ho (1987) who described new species of Epistrophe, Megasyrphus, Metasyrphus and Scaeva from Xizang (= Tibet), by Kohli, Kapoor & Gupta (1988) who described new species of 'Baccha', Chrysotoxum and Megasyrphus from the Himalayas and their foothills, and by Wyatt (1991) who reviewed the Indo-Australian genus Citrogramma and described new species.

The present paper is the result of my researches on Indian Syrphini, begun in 1971, presented as a M.Sc. thesis (1973) and as a Ph.D. dissertation (1981a) in India, and that formed the basis of my post-doctoral research program at the Smithsonian Institution, Washington D.C., U.S.A., in 1982-83. I felt it important to validate the many new taxa

I have discovered now, pending completion of the large revision of Indian Syrphini that I am preparing in collaboration with Dr F.C. Thompson. This ^{is being done} especially since some recent authors like Datta & Chakraborti, Ho, Kohli et al., and Wyatt have begun working on this tribe and are describing new taxa. Dr Thompson and I have recently published (1992) a paper on Oriental Paragus (tribe Paragini), and besides preparing the revision of Indian Syrphini, we are also working on other taxa of Oriental Syrphidae. A review and bibliography of the prey of Indian Syrphini was published by me (1981b) earlier, as well as a paper (1981c) on Epiisyrphus, ^{and} ~~with~~ notes on Chrysotoxum (1982).

In this paper I present diagnostic keys to the genera and species of Syrphini I have studied from India and neighbouring countries. I describe 2 new genera and 40 new species out of 28 genera and 111 species I recognize from this area. Complete descriptions and illustrations of all species, with detailed label data, synonymy and our remarks on relationships, etc., will be included in the revision Dr Thompson and I are currently completing. We will also name and describe further new species in that paper, based on fresh material.

Basic illustrations are provided here to facilitate use of my keys. Morphological terminology adopted is that of Vockeroth (1969), for convenience, even though dipterists are now advised to use the current terms employed in the Manual of Nearctic Diptera I (1981) coordinated by staff of the Biosystematics Research Institute, Agriculture Canada, in Ottawa. Characters of male terminalia are not used (except rarely) in my keys, so as to help users identify genera and species without recourse to dissection. Genera with only one species occurring in the Indian area are not keyed to species but, instead, the relevant species, its local distribution and recorded flight period (by month) is presented in the key to genera where that genus keys out. Genera with 2 or more species in the area ^(also sexes known) have separate keys to species of those genera. Recorded distribution and flight period are given for every species, based on material actually examined by me. For new species proposed here, I give basic label data for holotypes only, followed by sexes of paratypes and their localities. Depositories of new species types are also indicated, based on the collections from where these specimens were borrowed (if not in my personal collection), but, in our forthcoming revision, we may deposit some of these paratypes also in collections other than those indicated here. In the distributional data given for each species (before its name in the key, in parenthesis), the first locality is that of the primary type (holotype or lectotype), as country, state, or just continent. This first locality will coordinate with the place name of the town/village from where the holotype/lectotype was selected. Distributional localities given are only those in India and adjacent countries, unless types are proposed from other countries.

The following acronyms are used for States/Union Territories within the Indian Union, and for collections from where material (including types) ~~were~~ examined:

India. AH = Andhra Pradesh, AN = Andaman & Nicobar Islands, AR = Arunachal Pradesh (formerly N.E.F.A.), AS = Assam, BI = Bihar, CH = Chandigarh, DE = Delhi, GO = Goa, GU = Gujarat, HA = Haryana, HP = Himachal Pradesh, JK = Jammu & Kashmir, KL = Kerala,

KN = Karnataka (formerly Mysore), LA = Laccadive Islands, MG = Meghalaya (Khasi, Garo & Jaintia Hills), MH = Maharashtra (formerly Bombay), MN = Manipur, MP = Madhya Pradesh (formerly Central Provinces), MZ = Mizoram, NA = Nagaland, OR = Orissa, PO = Pondicherry, PU = Punjab, RA = Rajasthan (formerly Rajputana), SI = Sikkim, TN = Tamil Nadu (formerly Madras), TR = Tripura, UP = Uttar Pradesh (formerly United Provinces), WB = West Bengal. I may explain here that what was 'Assam' formerly is now divided into the following States: AS, MG, MN, MZ, NA, TR. The other countries comprising the Indian subcontinent are -- Bangladesh, Bhutan, Burma (now Myanmar), Ceylon (now Sri Lanka), the Chagos Archipelago, the Maldivé Islands, Nepal and Pakistan.

Depositories (Collections).

AMNH	American Museum of Natural History, New York, U.S.A.
BMNH	British Museum of Natural History (now the Natural History Museum), London, England.
BFBM	Bernice P. Bishop Museum, Honolulu, Hawaii, U.S.A.
CAS	California Academy of Sciences, San Francisco, U.S.A.
CIBCI	Commonwealth Institute of Biological Control, Indian Station, Bangalore, India (now the Biological Control Centre, Indian Institute of Horticultural Research).
CNC	Canadian National Collection, Biosystematics Research Institute, Agriculture Canada, Ottawa, Canada (now Biosystematics Research Centre).
CNM	Colombo National Museum, Department of National Museums, Sri Lanka.
KGC	Personal collection of Dr Kumar Ghorpadé, Bangalore, India.
IARI	Indian Agricultural Research Institute, Delhi, India.
TNAU	Tamil Nadu Agricultural University, Coimbatore, India.
USNM	U.S. National Museum of Natural History, Smithsonian Institution, Washington D.C., U.S.A.
UZM	Universitetets Zoologisk Museum, Copenhagen, Denmark.
ZMHU	Zoologisches Museum für Naturkunde der Humboldt-Universität, Berlin, Germany.
ZMUH	Zoological Museum of the University, Helsinki, Finland.

Checklist of the genera and species of Indian Syrphini

The genera and species of Syrphini known from the Indian subcontinent (India and adjacent countries) are listed below alphabetically. Only the current valid names are given here, based on my research. Synonymy is omitted and will be provided in detail in our forthcoming revision (Ghorpadé & Thompson, in prep.). New taxa are indicated by my name followed by 'gen. nov.' or 'sp. nov.' in boldface lettering. Genera are numbered consecutively in Roman numerals and species in Arabic numerals. Footnotes are used to remark on species recently named by other workers but ^{with} specimens not examined by me and ^{with} only their descriptions seen.

- | | | | |
|----|---------------------------------------|----|---------------------------|
| I | AGNISYRPHUS Ghorpadé, gen nov. | II | ALLOBACCHA Curran |
| 1. | <u>angara</u> Ghorpadé, sp. nov. | 3. | <u>amphithoe</u> (Walker) |
| 2. | <u>gressitti</u> Ghorpadé, sp. nov. | 4. | <u>apicalis</u> (Loew) |

5. binghami Ghorpadé, sp. nov.
 6. elegans (Brunetti)
 7. fallax (Austen)
 8. oldroydi Ghorpadé, sp. nov.
 9. sapphirina (Wiedemann)
 10. triangulifera (Austen)
- III ALLOGRAPTA Osten Sacken
 11. bouvieri (Hervé-Bazin)
 12. dravida Ghorpadé, sp. nov.
 13. lavara (Wiedemann)
 14. maculipleura (Brunetti)
- IV ASARKINA Macquart
 15. ayyari Ghorpadé, sp. nov.
 16. belli Ghorpadé, sp. nov.
 17. bhima Ghorpadé, sp. nov.
 18. hema Ghorpadé, sp. nov.
 19. incisuralis (Macquart)
 20. pitambara Ghorpadé, sp. nov.
 21. porcira (Coquillett)
- V ASILOBACCHA Virolvitah
 22. mubilipennis (Austen)
- VI BETASYRPHUS Matsumura
 23. aeneifrons (Brunetti)
 24. bazini (Brunetti)
 25. fletcheri Ghorpadé, sp. nov.
 26. isaaci (Bhatia)
 27. linga Ghorpadé, sp. nov.
- VII CHRYSOTOXUM Meigen
 28. antiquum Walker
 29. arcuatum (Linnaeus)
 30. baphyrum Walker
 31. convexum Brunetti
 32. corbetti Ghorpadé, sp. nov.
 33. draco Shannon
 34. fasciolatum (De Geer)
 35. intermedium Meigen
 36. quadrifasciolatum Brunetti
- VIII CITROGRAMMA Vockeroth
 37. chola Ghorpadé, sp. nov.
 38. clarum (Hervé-Bazin)
 39. citrinum (Brunetti)
 40. flavigenum Wyatt¹
 41. henryi Ghorpadé, sp. nov.
- IX DASYSYRPHUS Enderlein
 42. darada Ghorpadé, sp. nov.
 43. orsua (Walker)
 44. pandu Ghorpadé, sp. nov.
 45. rossi Ghorpadé, sp. nov.
- X DIDEA Macquart
 46. poorva Ghorpadé, sp. nov.
 47. vockerothi Ghorpadé, sp. nov.
- XI DIDEIDES Brunetti
 48. kempi Brunetti
 49. ovatus Brunetti
 50. tigerinus (Bigot)
 51. trilineatus Brunetti
- XII DIDEOPSIS Matsumura
 52. aegrota (Fabricius)
- XIII EOSPHAEROPHORIA Frey
 53. dentiscutellata (Keiser)
- XIV EPISTROPHE Walker
 54. aequalis (Walker)
 55. carmichaeli Ghorpadé, sp. nov.
 56. flavopilosa Ghorpadé, sp. nov.
 57. griseocincta (Brunetti)
 58. quinquevittata (Brunetti)
- XV EPISYRPHUS Matsumura
 59. arifer (Sack)
 60. balteatus (De Geer)
 61. viridaureus (Wiedemann)
- XVI ERIOZONA Schiner
 62. analis Kertész
- XVII EUPEODES Osten Sacken
 63. confrater (Wiedemann)
 64. corollae (Fabricius)
 65. pseudani latifasciatus (Macquart)
 66. miba (Wiedemann)
 67. pseudonitens (Dušek & Láska)²
- XVIII ISCHIODON Sack
 68. scutellaris (Fabricius)

¹Wyatt (1991) proposed the name Citrogramma flavigena, but flavigenum is the correct ending conforming to the gender of the genus name.
 spelling? [-um would be correct ending]

²Dr Pavel Láska informed me (in litt.) that pseudonitens is probably a synonym of latilunulatus Collin, and Dr Chris Thompson tells me that Yoshiro Ikezaki considers it a synonym of frequens Matsumura, which latter is the oldest available name for this species. However, until I examine specimens of frequens (type-locality: Japan), I prefer to use pseudonitens, which was described from Afghanistan.

- XIX LEUCOZONA** Schiner
 69. brunettii Ghorpadé, sp. nov.
 70. kingdonwardi Ghorpadé, sp. nov.
 71. virendra Ghorpadé, sp. nov.

- XX MEGASYRPHUS** Dušek & Láská
 72. himalayensis Kohli, Kapoor & Gupta³

- XXI MELANGYNA** Verrall
 73. remota (Brunetti)

- XXII MELISCAEVA** Frey
 74. ceylonica (Keiser)
 75. cinetelloides Ghorpadé, sp. nov.
 76. darjeelingensis Datta & Chakraborti⁴
 77. kusuma Ghorpadé, sp. nov.
 78. lafroyi Ghorpadé, sp. nov.
 79. magnifica Ghorpadé, sp. nov.
 80. malaisii Ghorpadé, sp. nov.
 81. mathisi Ghorpadé, sp. nov.
 82. strigifrons (de Meijere)
 83. tribeni (Nayar)

- XXIII PARASYRPHUS** Matsumura
 84. aeneostoma Matsumura
 85. kashmiricus Ghorpadé, sp. nov.
 86. sharpi Ghorpadé, sp. nov.
 87. thompsoni Ghorpadé, sp. nov.

- XXIV RHINOACCHA** de Meijere
 88. gracilis de Meijere
 89. krishna Ghorpadé, sp. nov.
 90. peterseni Ghorpadé, sp. nov.

- XXV SCAEVA** Fabricius
 91. albomaculata (Macquart)
 92. latimaculata (Brunetti)
 93. lunata (Wiedemann)
 94. pyraetri (Linnaeus)

- XXVI SPHAEROPHORIA** Le Peletier & Servill
 95. assamensis Joseph
 96. bengalensis Macquart
 97. indiana Bigot
 98. knutsoni Ghorpadé, sp. nov.
 99. ladakhensis Ghorpadé, sp. nov.
 100. macrogaster Thomson
 101. rueppellii (Wiedemann)
 102. scripta (Linnaeus)
 103. viridaenea Brunetti
 104. vockerothi Joseph

- XXVII SYRPHUS** Fabricius
 105. dalhousiae Ghorpadé, sp. nov.
 106. fulvifacies Brunetti
 107. howletti Ghorpadé, sp. nov.
 108. ribesii (Linnaeus)
 109. torvus Osten Sacken
 110. vitripennis Meigen

- XXVIII VOCKEROTHIA** Ghorpadé, gen. nov.

111. laticornis (Curran) *name discussed in letter*

Key to genera of Indian Syrphini

1. Anterior flat portion of mesopleuron with long fine hairs, at least posterodorsally 2
 - Anterior flat portion of mesopleuron bare, with microscopic pubescence only and not with long hairs. 6
 2. Extreme posterior margin of wing with minute, closely spaced, black, sclerotized dots. 3
 - Extreme posterior margin of wing without such dots. 5
 3. Hypopleuron bare below spiracle; metasternum bare; terga pale yellow with black apical fasciae or triangles MELISCAEVA Frey
 - Hypopleuron haired below spiracle; metasternum and coloration of terga variable 4

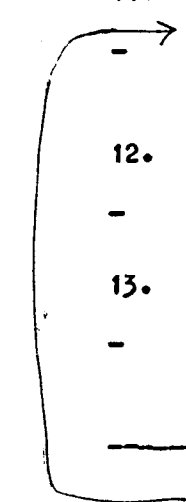
³Described from 2 ♀ taken at Kalatop (near Dalhousie) and at Carignano, both in Himachal Pradesh by Kohli et al. (1988: 123). I had proposed ~~himalayensis~~ deodarae (Ghorpadé, 1981a) for 29 ♀ that I collected at Dalhousie in October 1974 which I now consider *con specific?* synonymous with himalayensis. Ho (1987: 195, 203 & Fig. 8) described chinensis based on one ♂ and 4 ♀ collected in April and May in Tibet, which appears to be another species of Megasyrphus, not conspecific with the above species.

⁴This species, darjeelingensis Datta & Chakraborti (1986: 4, Fig. 1), was described from 4 ♂ & 3 ♀ collected in January at Darjeeling and is distinct from the other nine species of Meliscaeva I recognize, or newly describe, from the Indian subcontinent.

I would prefer to see abdominal shape mentioned in both halves of couplets; I know it is variable in Episyris - plus I think 'abdomen petiolate' is better than 'terga 2 & 3 petiolate'. Perhaps relative width of tergum 2 (at narrowest point) and of tergum 3 could be given.

- 4. Metasternum haired; mesonotum anteriorly without collar of longer hairs; subscutellar fringe well developed; terga 3 & 4 orange yellow with subbasal and apical black fasciae **EPISYRPHUS** Matsumura
- Metasternum bare; mesonotum anteriorly with a distinct collar of longer and denser hairs; subscutellar fringe absent or weakly developed; terga 2 & 3 petiolate, not coloured as above. **ASIOBACCHA** Virolvitsh
- [One species: *A. nubilipennis* (Austen) — Ceylon; Burma; India: KL, KN, MG, TN, WB; Nepal ?; i, iii-x.] ♂♀
- 5. Eye haired or bare; hypopleuron bare; posteromedian apical angle of hind coxa with tuft of strong hairs; terga 2 & 3 not petiolate **PARASYRPHUS** Matsumura
- Eye bare; hypopleuron haired; hind coxal hair tuft absent; terga 2 & 3 distinctly petiolate **ALLOBACCHA** Curran (pt.)
- 6. Mesonotum anteriorly with a distinct, complete or incomplete collar of longer hairs. 7
- Mesonotum anteriorly without such a collar of hairs 9
- 7. Hypopleuron bare; hind coxal hair tuft present; wing with broad, dark, transverse vitta in middle which may extend towards wing base, apical third of wing hyaline **DIDEOPSIS** Matsumura
- [One species: *D. aegrota* (Fabricius) — China; Bangladesh; Ceylon; India: AR, AS, KL, KN, MG, MN, MP, SI, TN, UP, WB; Nepal; i-iii, v-xii.] ♂♀
- Hypopleuron haired; hind coxal hair tuft absent; wing entirely hyaline or variably darkened 8
- 8. Humerus bare; metasternum haired; laterotergite bare; abdomen ^{usually} margined and broad, if narrow then terga 2 & 3 not petiolate; lower face distinctly produced and oral cavity elongate **ASARKINA** Macquart
- Humerus haired posteriorly; metasternum bare; laterotergite haired; terga 2 & 3 petiolate; lower face not produced ^{abdominal margin?} **ALLOBACCHA** Curran
- 9. Abdomen entirely unmarginated 10
- Abdomen distinctly margined, at least faintly on terga 2 to 5 15
- 10. Upper and lower sternopleural hair patches at least narrowly joined posteriorly; lateral mesonotal margin dark, if yellowish then the demarcation not distinct; male sternum 9 with posteroventral emargination and a distinct lingula 11
- Sternopleural hair patches distinctly separated posteriorly, or reduced, or even absent; lateral mesonotal margin bright yellow, sharply demarcated from dark dorsum; male sternum 9 without posteroventral emargination or lingula 12
- 11. Hind coxal hair tuft present; terga 2 to 4 with pairs of yellow, well separated, rectangular spots; eye haired **MELANGYNA** Verrall
- Hind coxal hair tuft absent; terga 2 to 4 without such spots, these always shaped otherwise, or terga 3 & 4 with fasciae; eye bare, or rarely haired **EPISTROPHE** Walker (pt.)
- 12. Wing with alula and anal lobe reduced, narrow; ^{head} eyes in male dichoptic; metasternum bare; body hairs reduced or absent 13
- Wing with alula and anal lobe normal; ^{head} eyes in male holoptic; metasternum haired or very rarely bare; body hairs not appreciably reduced 14
- 13. Lower face strongly produced into a snout, tubercle absent, black median vitta present **RHINOACCHA** de Meijere
- Lower face not produced, tubercle present, entirely yellow or with a black median vitta **EOSPHAEROPHORIA** Frey
- [One species: *E. dentiscutellata* (Keiser) — Ceylon; x.] ♂♀

(scutum is only part of mesonotum)



[One species: *M. remota* (Brunetti) — India: HP, JK, UP; Nepal; v-vi, ix-x.] ♂♀

- 14. Larger species with fairly broad abdomen, ^{which is usually} shorter than wings (generally), subcutellar fringe normal; metasternum haired; tergum 9 of male normal, not wider than abdominal width; male terminalia small ALLOGRAPTA Osten Sacken
- Smaller, more slender species with abdomen (at least in male) cylindrical and elongated, longer than wings; subcutellar fringe absent (in centre) or present only laterally only or entirely; male tergum 9 wider than abdomen, enlarged; male terminalia large, globose (metasternum haired or bare); SPHAEROPHORIA Le Paletier & Serville
- 15. Metasternum haired 16
- Metasternum bare 20
- 16. Hind coxal hair tuft absent; eye bare or very rarely sparsely haired 17
- Hind coxal hair tuft present; eye distinctly haired, though sometimes sparsely so 19
- 17. Sternopleural hair patches joined posteriorly; lateral mesonotal margin bright yellow, distinctly demarcated; pleuron with bright yellow areas CITROGRAMMA Vockeroth
- Sternopleural hair patches distinctly separated posteriorly; lateral mesonotal margin dark, if yellow dull and not distinctly demarcated; pleuron dark, without any yellow areas EUPHODES Osten Sacken
- 18. Hypopleuron haired below spiracle; lower lobe of squama with a few fine, erect hairs on upper surface; sternopleural hair patches separated posteriorly; wing vein R 4+5 strongly dipped into cell R 4+5 DIDEA Macquart
- Hypopleuron bare below spiracle; lower lobe of squama bare above; sternopleural hair patches joined, or rarely separated, posteriorly; wing vein R 4+5 dipped into cell 4+5 or straight 19
- 19. Face with black median vitta; wing vein R 4+5 distinctly dipped; male sternum 9 without lingula MEGASYRPHUS Dušek & Láška
- [One species: M. himalayensis Kohli, Kapoor & Gupta — India: HP; x-xi.]
- Face entirely yellow; wing vein R 4+5 straight or nearly so; male sternum 9 with a distinct lingula DIDEOIDES Brunetti
- 20. Hind coxal hair tuft present 21
- Hind coxal hair tuft absent 22
- 21. Eye densely haired; sternopleural hair patches separated posteriorly; tergum 2 with narrow yellow or grey fascia which may be interrupted in centre in some specimens BETASYRPHUS Matsumura
- Eye bare or very rarely haired; sternopleural hair patches joined posteriorly; tergum 2 with a pair of well separated yellow spots SYRPHUS Fabricius
- 22. Lower lobe of squama with some long, coarse, erect pale hairs above on posteromedian portion; face receding below from swollen frons (Type-species: Asarkina laticornis Curran, 1928). VOCKEROTHIA Ghorpade, gen. nov.
- Lower lobe of squama bare above; face not receding below to oral cavity, even if frons is swollen as in Scaeva 23
- 23. Eye bare; antenna with segment 3 only twice as long as broad; abdomen flat or slightly convex dorsally, and slightly but distinctly margined 24
- Eye haired, at least sparsely; if bare, then antenna porrect, segment 3 at least thrice as long as broad; abdomen strongly convex dorsally, very strongly margined 26
- 24. Lateral mesonotal margin bright yellow, distinctly demarcated from dark dorsum; sternopleural hair patches separated posteriorly ISCHIODON Saak
- Lateral mesonotal margin dark, undifferentiated from dorsum; sternopleural patches joined posteriorly 25
- 25. Wing microtrichia well developed all over, even in costal and basal cells; abdomen distinctly margined, dorsum flat; male sternum 9 without lingula (Type-species: Agnisyrphus angara Ghorpade, sp. nov.) AGNISYRPHUS Ghorpade, gen. nov.

BN

I would prefer three times to thrice

could be used as a word for 'thrice'?

E.g. with long coarse hairs above

[One species: V. laticornis (Curran) — Thailand; Nepal; Malaya; ii-iv, vii, xi-xii. ♂♂

[One species: I. scutellaris (Fabricius) — India: FO, AH, AS, BI, DE, GU, HA, JK, KL, KN, MH, MN, MP, OR, PU, RA, TN, UP, WB; Burma; Ceylon; Nepal; Pakistan; i-xii. ♂♂

if unmargined already removed at explet 11

- Wing microtrichia appreciably reduced, especially on basal half in costal and basal cells; abdomen unmargined (if margin present), weak, visible on some terga only, dorsum noticeably convex, not flat; male sternum 9 with lingula EPISTROPHE Walker (pt.)
- 26. Wing with brownish anteromedian spot; tergum 2 entirely black; hairs on lateral margins of abdomen thick and suberect; male sternum 9 without lingula; generally Bombus-like, densely hairy flies . . . ERIOZONA Schiner
- Wing entirely hyaline, or only costal margin coloured, especially distally; tergum 2 not entirely black; hairs on lateral abdominal margins normal, not as above; male sternum 9 with lingula; (these) flies not Bombus-like 27
- 27. Wing microtrichia greatly reduced, basal half and alula almost bare; wing vein R 4+5 distinctly though shallowly dipped into cell R 4+5; terga 3 & 4 with a pair of oblique or lunulate pale spots; male frons strongly swollen and eye with distinctly large facets on upper half SCAEVA Fabricius
- Wing microtrichia well developed, if partly bare then other characters not as above (except some species of Dasysyrphus with oblique or lunulate pale spots on terga 2-4); wing vein R 4+5 straight (but in some Chrysotoxum species distinctly dipped); male frons (not strongly swollen or with upper facets larger (except in some Dasysyrphus)) 28
- Antenna porrect, elongate, segment 3 at least thrice as long as broad; lateral mesonotal margin wholly or partially (and) distinctly bright yellow; wing vein R 4+5 distinctly dipped into cell R 4+5; abdomen strongly convex dorsally, very strongly margined . . . CHRYSOTOXUM Meigen
- Antenna drooping, not porrect, segment 3 less than thrice as long as broad; lateral margins concolorous with rest of mesonotum, dark, not bright yellow; wing vein R 4+5 almost straight, not dipped distinctly; abdomen not strongly convex dorsally, or very strongly margined 29
- 29. Face wholly yellow, or black with white pollen on sides; tergum 2 wholly or almost wholly yellow, if black with yellow spots then with these spots confluent with lateral abdominal margins . . . LEUCOZONA Schiner⁵
- Face yellow with a dark median vitta; tergum 2 black, with yellow spots not confluent with lateral abdominal margins, well separated from them DASYSYRPHUS Enderlein

perhaps maximum microtrichia of the Dros. should be mentioned, even in a key to bare species and Scaeva would be difficult to distinguish

Key to Indian species of AGNISYRPHUS Ghorpadé, gen. nov.

- 1. Tergum 4 reddish; antenna with segment 3 yellow, very slightly pale brown dorsally; tibia 3 yellow, with indistinct brownish postmedian annulus (India: UP; v.) ♂ angara Ghorpadé, sp. nov.
[Holotype ♂, Mussoorie, 22.v.1974 (Ghorpadé) — KGC. Paratype ♂, Naini Hills — BMNH]
- Tergum 4 yellow with black subposterior fascia; antenna with segment 3 black, orange-yellow ventrobasally; tibia 3 brownish black except extreme base yellow (Thailand; India: AR, WB; vii-viii, x-xi) ♂♀ gressitti Ghorpadé, sp. nov.
Holotype ♂, Doi Pui Mt summit, 28.vii.1979 (Petersen) — UZM. Paratypes ♂ ♀, Ghoom—Tiger Hill, Darjeling—Tiger Hill, Cha Ché in Delai Valley; Doi Pui Mt summit — BMNH, BPBM, KGC]

which localities (ies) are in India and which are in India?

⁽⁵⁾ Ischyrosyrphus Bigot (type-species: sivae Bigot from 'India'; type specimen, not traceable, translation of description in Brunetti, 1923: 66 is unrecognizable, so species here ignored, needs to be suppressed as a nomen nudum?) is here considered congeneric with Leucozona Schiner (see also comments in Vockeroth, 1969: 78-80). Dr Thompson and I are preparing a review of the world species of Leucozona, including those now placed in Ischyrosyrphus.

[One species: E. analis Kertész — India: SI, UP; Nepal; vii-viii.] ♂♀

I see no need to suppress the name; it should merely be considered a nomen nudum; if a species fitting the description is found the name is still available.

Key to Indian species of ALLOBACCHA Curran

- 1. Scutellum black; pleurotergite haired; pleuron black, at most with posterior mesopleuron yellow; prescutum, between yellow humerus and notopleural callus, black 2
- Scutellum at least partly yellow; pleurotergite bare; pleuron with yellow markings also on sternopleuron and pleurotergite (even on barrette in some species); humerus, notopleural callus and lateral prescutum between them yellow 4
- Humerus haired; face with at least lateral portions partly yellow; anterior mesopleuron bare; posterior mesopleuron at least partly yellow pollinose; alula medium in size with straight posterior margin 3
- Humerus bare; face black and at most sparsely white pollinose on lateral portions; anterior mesopleuron haired; pleuron wholly black; alula large with weakly rounded posterior margin, not straight ('Ind. Or.'; Ceylon; India: DE, GU, KN, MP, RA, TN; i-xii.) ♂♀ sapphirina (Wiedemann)
- 3. Wing with apical dark spot wider than marginal cell; female frons with pale pollinose spots subtriangular, shorter, placed at some distance away from anterior ocellus; male with pale hairs on frontal triangle long, longer than black hairs on lunular callus; yellow markings on posterior mesopleuron and notopleuron dull yellow, not contrasting sharply with black areas of pleuron and mesonotum (sternopleuron black, at most with some white short hairs on upper margin); dull yellow of notopleuron rarely extending above (Japan; Burma; Ceylon; India: ~~AS, BI, GO, HP, KL, KN, MG, MZ, TN, UP, WB~~; Nepal; i-xi.) ♂♀ apicalis (Loew)
- Wing with apical dark spot narrower than marginal cell, appearing as an extension of stigma; female frons with pale pollinose spots distinctly elongate, almost reaching anterior ocellus; male with pale hairs on frontal triangle shorter, at most as long as black hairs on lunular callus; yellow markings on posterior mesopleuron and notopleuron very bright, contrasting sharply with black areas of pleuron and mesonotum (upper sternopleuron ^{also} bright yellow, except in some specimens); bright yellow of notopleuron extending above distinctly (Ceylon; India ?; ii-iii, v-vii, x-xi.) ♂♀ . fallax (Austen)
- 4. Postmetacoxal bridge present; barrette black and bare; scutellum black at least on posterior two-thirds; alula almost absent 5
- Postmetacoxal bridge absent; barrette yellow and haired; scutellum yellow with median black marking; alula fairly well developed 7
- Face entirely yellow (India: SI; ix ?) ♂ binghami Ghorpedé, sp. nov. [Holotype ♂, Sikkim (Bingham) - ZMHU]
- Face yellow with a median dark vitta 6
- 6. Tergum 3 with posterior margin broadly black; sternum 4 with posteromedial projection long, narrow and truncate (India: WB; Burma ?; Nepal; iii ?, vii-ix.) ♂♀ elegans (Brunetti)
- Tergum 3 with posterior margin yellow or narrowly black; sternum 4 with posteromedial projection short, wide and truncate (Ceylon; India: KN; i, vi, ix, xii.) ♂♀ triangulifera (Austen)
- 7. Wing hyaline except for dark costal margin (Burma; Ceylon; India: AN ?, AS, KL, KN, MG, MN, MZ, WB; i-iv, viii, x-xii.) ♂♀ amphithoe (Walker)
- Wing with a broad dark vitta medially (India: KL, TN ?, WB; Ceylon; Nepal; Malaya; ii ?, ix-xi.) ♂♀ oldroydi Ghorpedé, sp. nov. [Holotype ♂, Nadungayam, 16-22.ix.1938 (B.M.-C.M. Expdn to S. India) - BMNH. Paratypes ♂ ♀, Sukna; Ceylon; Nepal; Malaya - BMNH, CNC, KGC, USNM]

what is lateral prescutum in front of scutum not hairy as humerus and notopleural

extending to where?

should up. sternop. bar be mentioned.

extending to where?

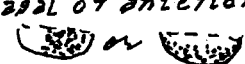
very short & could char. be mentioned?

as for binghami

Key to Indian species of ALLOGRAPTA Osten Sacken

- 1. Barrette black; anterior mesopleuron black; scutellum with a dark median spot; alula almost entirely microtrichose; terga 2-4 with yellow spots or fasciae not reaching lateral margins; sterna with median black vittae (India: TN, KL; iii-v, x.) ♂. . . bouvieri (Hervé-Bazin)
- Barrette yellow; anterior mesopleuron yellow ventrally; scutellum yellow or with dark median spot; alula bare at least on basal one-fifth; terga 2-4 with spots or fasciae confluent with lateral margins; sterna wholly yellow 2
- 2. Femur 1 with all yellow pile (except ^{for} some black hairs on extreme apex in some specimens); tibia 3 black with clear, distinct median yellow annulus; terga 3 & 4 with yellow fasciae reaching lateral margins at least in half ^{width} (Java; Burma; Ceylon; India: AH, AR, AS, BI, DE, KL, KN, MG, MN, MP, OR, SI, TN, UP, WB; i-xii) ♂♀. iavara (Wiedemann) ?
- Femur 1 with black hairs at least on apical one-third; tibia 3 black, median yellow annulus indistinct or absent; terga 3 & 4 with yellow fasciae reaching lateral margins only very narrowly 3
- 3. Mesonotum with all golden yellow hairs; alula bare only on basal one-third; tergum 2 with yellow spots reaching lateral margins only at a point; tergum 5 with arrowhead-shaped pair of yellow spots (India: KN; i, iv, x-xii) ♂. dravida Ghorpadé, sp. nov.

I don't think inverted commas are necessary - but it is each spot above has arrowhead shaped or arrowhead form on arrowhead

Holotype ♂, Bangalore, 15.x.1978 (Ghorpadé) - KGC. Paratypes ♂, Bangalore, Kemangundi - KGC / *basal or anterior*  *(one or more PT?)*

Mesonotum with black hairs on posterior half; alula bare on basal half; tergum 2 with yellow spots reaching lateral margins more widely; tergum 5 with a pair of oblique, elongate-oval yellow spots (India: AR, AS; Burma; iii, viii, xii) ♂♀. maculipleura (Brunetti)

elongate-oval or elongate oval? (probably both the same)

Key to Indian species of ASARKINA Macquart

- 1. Hairs on femur 1 and scutellum all black 2
- Hairs on femur 1 and scutellum yellow or yellow and black 3
- 2. Lower face distinctly produced ventrally, upper margin almost at 90° to infra-antennal area, tubercle not distinct but merged with upper margin of oral cavity; hairs on face yellow; antennal segment 3 elongate, twice as long as wide; femur 3 with yellow and black hairs (India: TN, KL, KN; Ceylon; ii, iv, ix-xi) ♂♀. ayyari Ghorpadé, sp. nov.
- [Holotype ♂, Yercaud, 19.ix.1978 (Ghorpadé) - KGC. Paratypes ♂ ♀, Nandi Hills, Yercaud, Mudigere, Ootacamund, Anaimalai Hills, Meppedi, Wynaad, Santhanatod, N. Pundalucya, Labugema Reservoir jungle, 4km NE Laksapana, Kanda-ela Reservoir, Rangala, 'Ceylon' - CNM, IARI, KGC, TNAU, USNM, ZMHU]
- Lower face not produced, tubercle distinct; hairs on face black; antennal segment 3 only one and half times as long as wide; femur 3 with all black hairs (India: WB; Nepal; Thailand; vii-viii, x) ♂♀. bhima Ghorpadé, sp. nov.
- 3. Hairs on face and femur 1 yellow and black; hairs on femur 3 all black; sterna with some black hairs (India: KN, AH; Ceylon; v, viii-ix, xi) ♂♀. belli Ghorpadé, sp. nov.
- [Holotype ♂, 35km W. Jog Falls, 18.xi.1976 (Ghorpadé) - KGC. Paratypes ♂ ♀, Amalapuram, Nagody, Bellahunsi-Hampasagaram Road, Kanneliya forest - TNAU, USNM]
- Hairs on face and femur 1 all yellow; hairs on femur 3 yellow or yellow and black; sterna with all yellow hairs 4

[Holotype ♂, Debrepani, 22.x.1961 (Ross & Cavagnaro) - CAS. Paratypes ♀, Darjeling, Debrepani, Kathmandu, Doi Inthan range - CAS, CNC, KGC, UZM]

where are these localities (NB, Nepal or Thailand); one should not have to examine a map to find out. The same applies to belli (and probably others).

[Holotype ♂, Jog Falls, 17.xi.1976 (Ghorpadé) — KGC. Paratypes ♂♀, Trincomalee, Kanneliya, Gilimale, Peradeniya — BMNH, USNM]

- 4. Anterior black fasciae on terga 3-5 absent; tergum 2 without median black vitta 5
 - Anterior black fasciae of terga 3-5 present, even if weak; tergum 2 with median black vitta 6
 - 5. Male with frontal hairs all yellow, in female upper frons black haired; tergum 3 in male with ^{all} yellow hairs, in female ^{with} yellow and black; femur 3 with ^{all} yellow hairs (China; Bangladesh; Ceylon; India: AH, AS, BI, KL, KN, PO, TN, UP, WB; Nepal; i-v, vii-xii.) ♂♀. incisuralis (Macquart)
 - Frontal hairs in male and female all black; tergum 3 in male with yellow and black hairs, in female ^{with} hairs all black; femur 3 with ^{most} yellow hairs, except black hairs distally (India: KN; Ceylon; i, iii, x-xi.) ♂♀. pitambari. Ghorpadé, sp. nov.
 - 6. Tergum 1 ^{medially} black; tergum 2 with black fascia not confluent with lateral margins; lower face distinctly produced, tubercle and oral cavity almost fused; male with frontal hairs long, longer than antennal segments 1+2 together (Japan; Burma; India: AS, MG, SI, UP, WB; Nepal; iii-v, vii-x.) ♂♀. porcina (Coquillett)
 - Tergum 1 all yellow; tergum 2 with black fascia confluent with lateral margins; lower face normal, tubercle distinct from oral cavity; male with frontal hairs shorter than antennal segments 1+2 together (India: KN, KL; iii, ix.) ♂♀. hema Ghorpadé, sp. nov.
- [Holotype ♂, Bannerghatta Park, 12.ix.1976 (Ghorpadé) — KGC. Paratypes ♂♀, Bannerghatta Park, Walayar forest, Thekkady, 'India'; — CNC, KGC]

Key to Indian species of BETASYRPHUS Matsumura

- 1. Tergum 2 with broad orange yellow fascia, ^{which is} confluent with anterior margin and about twice as broad as similar fascia on tergum 3 2
- Tergum 2 & 3 with subequal orange yellow or greyish fasciae, ^{which are} not confluent with anterior margins. 3
- 2. Male terminalia very large, surstyli asymmetrical; female sterna equally yellow and black coloured; black fascia on sternum 2 narrowly separate from lateral margins linga Ghorpadé, sp. nov. (India: KN, KL, TN; i, iv, ix, xii.) ♂♀
- [Holotype ♂, Nandi Hills, 3.xii.1973 (Ghorpadé) — KGC. Paratypes ♂♀, Nandi Hills, Bangalore, Yercaud, Kaikatty — CIBCI, KGC]
- Male terminalia normal, small, surstyli symmetrical; female sterna more black than yellow; black fascia on sternum 2 broadly confluent with lateral margins (India: UP, BI, SI, WB; Nepal; i-iii, vii, x-xii.) ♂♀. bazini (Brunetti)
- 3. Lower lobe of squama without erect hairs on upper surface; yellow or grey fascia on tergum 2 confluent with lateral margins; male with suture of eyes longer than length of ^{sub-ocular} triangle which is as long as broad and suture of eyes less than 90°; female with hairs on face almost all black, except ^{on} lower margin around oral cavity below tubercle ^{where white} (India: BI, HP, JK, MG, PU, UP, WB; Burma; i-iv, vii-x, xii.) ♂♀. isaaci (Bhatia)
- Lower lobe of squama with erect hairs, but without these in some specimens of fletcheri; yellow or grey fascia on tergum 2 not confluent with lateral margins; male suture of eyes equal to ocellar ^{triangle} triangle which is longer than broad and with suture of eyes greater than 90°; female with hairs on face mostly white, but with some black hairs below antennal bases and around tubercle in some specimens 4

I think it should be: anterior angle of eye junction or suture posteriorly face then 90. I think your first use of suture applies to a line which does not have an angle

same here

why suture rather than suture?

- 4. Anternal segment 3 orangish ventrobasally; tibia 1 & 2 all yellow^{with} no trace of dark median^B annulus; erect hairs on lower squamal lobe present seneifrons (Brunetti)
- Antenna almost all black; tibia 1 & 2 with distinct, though narrow, dark median annulus; erect hairs on lower squamal lobe mostly^{usually} absent, rarely a few hairs present fletcheri Ghorpadé, sp. nov.

(India: TN, KL; Ceylon; i-v, viii-xi.) ♂♀
 [Holotype ♂, Ootacamund, 23.x.1975 (Ghorpadé) — KGC. Paratypes ♂♀, Yercaud, Kallar, Ootacamund, Shembaganur, Kodaikanal, Manantoddy, Kalkatti, Murnar, Namukulali, 'Ceylon' — AMNH, BMNH, CAS, KGC, TNAD]

Key to Indian species of CHEYSOTOXUM Meigen

- 1. Mesonotum with lateral yellow vitta complete; facial black vitta absent or weak, present only in a few specimens; black genal vitta absent; sternum 2 yellow with a black^o complete or interrupted fascia 2
 - Mesonotum with lateral yellow vitta incomplete; facial black vitta present, distinct; black genal vitta present; sternum 2 black, or black with yellow spots on anterior and/or posterior margin 3
 - 2. Terga 2-4 with posterolateral corners produced into spines (China; Burma; vi-viii, ix.) ♂♀ draco Shanon
 - Terga 2-4 with posterolateral corners normal, not produced into spines (India: WB, HP, KN, TN, UP; Burma; Ceylon; Nepal; i-iii, v, vii-xii.) ♂♀ baphyrum Walker
 - 3. Sternum 2 black 4
 - Sternum 2 black with yellow spots on anterior and/or posterior margin(s) 6
 - 4. Mesonotum with median^o white^o pollinose vitta complete (India: MG; iii-iv.) ♀ quadrifasciatum Brunetti
 - Mesonotum with median^o white^o pollinose vitta incomplete 5
 - 5. Abdomen with lateral margin black; antennal segment 3 longer than segments 1+2 together ('India'; Burma; India: HP, UP, WB; iv-x.) ♂♀ . antiquum Walker (pt.)
 - Abdomen with lateral margin yellow and black; antennal segment 3 shorter than segments 1+2 together (India: UP; vi.) ♂♀ convexum Brunetti
 - 6. Scutellum black^{with} anterior margin yellow; antennal segment 3 shorter than segments 1+2 together (Europa; India: JK; vi.) ♂♀ fasciolatum (De Geer)
 - Scutellum yellow, medially translucent; antennal segment 3 longer^{or} equal to segments 1+2 together 7
 - 7. Abdomen with lateral margin black; sternum 2 with posterior margin black 8
 - Abdomen with lateral margin yellow and black; sternum 2 with posterior margin at least partly yellow 9
 - 8. Femora yellow with basal one-fourth, at least, black; scutellum yellow, at most translucent in centre ~~with a distinct black median macula~~ antiquum Walker (pt.)
 - ^{sp. n.?} Femora entirely yellow; scutellum yellow with a distinct black median macula[?] (Europe; India: BI; v.) ♂♀ arcuatum (Linnaeus)
 - 9. Tergum 2 with posterior margin black; sternum 2 with anteromedian yellow spot^{with} posterolateral corners yellow (Europe; India: HP, JK; Pakistan; vii.) ♂♀ intermedium Meigen
 - Tergum 2 posteromedially brownish yellow^{with} or narrow posterior margin brownish yellow; sternum 2 with a pair of large yellow spots anteriorly, posterior margin narrowly yellow (India: UP; viii.) ♂♀ cerbetti Ghorpadé, sp. nov.
- [Holotype ♂, Mussoorie, 3-14.viii.1978 (Copenhagen Zool. Mus. Exptn) — UZM. Paratype ♀, Mussoorie — UZM]

1. Face with posteroventral area contiguous to gena and oral margin black; femur 1 & 2 yellow ^{with} basal one-third black; femur 3 almost entirely black, except for extreme yellowish apex in some specimens (Ceylon; i-ii, iv-vii, ix-x; ♂ ♀) henryi Ghorpadé, sp. nov.
 [Holotype ♂, Kanda-ela, 2.vi.1975 (Wood & Petty) — USNM. Paratypes ♂ ♀, Ohiya, Mt Pidurutalagala, Nuwara Eliya, Kanda-ela, Rangala, Horton Plains, Hakgala Sanctuary, Strasby Estate near Upcot, Emalina — BMNH, CNC, CNM, USNM]
- Face entirely yellow; femur 1 & 2 entirely yellow; femur 3 black, with at least basal one-third yellow 2
2. Male tergum 3 with yellow fascia markedly emarginate posteriorly and distinctly narrowing to lateral margins (separated in middle in some specimens); female tergum 4 with yellow fascia broadly emarginate posteriorly, narrowing to lateral margins (India: KN, KL, TN; i, iii-iv, vii, x-xi; ♂ ♀) chola Ghorpadé, sp. nov.
 [Holotype ♂, Nandi Hills, 27.vii.1975 (Ghorpadé) — KGC. Paratypes ♂ ♀, Nandi Hills, Ootacamund, Kodaikaral, Kalkatty, 12km N. Munnar, Sidadur — AMNH, CAS, CNC, KGC, IARI]
- Male tergum 3 with subparallel yellow fascia, weakly emarginate posteriorly and only very slightly narrowing to lateral margins; female tergum 4 with subparallel yellow fascia, widening to lateral margins 3
3. Posterior mesopleuron yellow with anterior one-third to half black; hind tibia entirely black; male frons with triangular brownish yellow to brown supra-lunular spot; female tergum 2 with yellow spots separate (India: AS, MG, MN?, WB; v, vii-viii, x; ♂ ♀) citrinum (Brunetti)
- Posterior mesopleuron and pteropleuron entirely yellow; hind tibia with noticeable yellowish median annulus; male frons and lunule entirely yellow; female tergum 2 with yellow spots confluent (Laos; India: MG, WB; Nepal; vii-viii; ♂ ♀) clarum (Hervé-Bazin)

Key to Indian species of DASYSYRPHUS Enderlein

1. Frons with white hairs; femur 1 & 2 entirely yellow (India: JK; vi; ♂) pandu Ghorpadé, sp. nov.
 [Holotype ♂, Leh, 22.vi.1973 (Gupta) — KGC]
- Frons with black hairs; femur 1 & 2 yellow with basal half black 2
2. Hind tibia black on basal half or more; gena blackish; spots on terga 3 & 4 well separated; no pollinose mesonotal vittae (India: JK; vi; ♂) darada Ghorpadé, sp. nov.
 [Holotype ♂, Dress, 12.vi.1973 (Khanna) — KGC]
- Hind tibia yellow on basal half; gena yellow; spots on terga 3 & 4 usually confluent ^{and femur 3} & fascia, rarely narrowly separated; pollinose mesonotal vittae present 3

⁶ Citrogramma flavigenum Wyatt (1991: 159, Figs 5 & 16) will key out to C. chola Ghorpadé, sp. nov., but differs as follows. ~~Its~~ femur 3 is wholly black (like in henryi Ghorpadé, sp. nov. which could be its sister-species), the facial tubercle is narrowly brown, and femur 1 & 2 are basally black. The mesonotal hairs of flavigenum are described as "pile mostly black", whereas those in chola are equally yellow and black. "The almost uniformly brown dusted scutal disc" in flavigenum is dusted bluish in chola. C. flavigenum Wyatt was based on a single male holotype from Kodaikaral (India: TN), taken on 23.iii.1936 by the British Museum & Colombo Museum Expedition to south India, and is deposited in BMNH. I do not have any specimens that conform to the diagnostic characters of flavigenum (this is the correct ending, see footnote 1), though specimens of chola (Wyatt's 'Sp. A') possess metasternal hairs and not 'bare' as stated in his couplet 10 (Wyatt 1991: 157).
~~the metasternal hairs~~

- 3. Tergum 5 yellow only on posterior margin; facial black vitta not reaching antennal bases; femur 1 yellow haired ('E. Indies'; India: HP, JK, UP, WB; iii-v, vii-x, xii; ♂ ♀) orsua (Walker)
- Tergum 5 yellow on posterior and lateral margins; facial black vitta reaching antennal bases; femur 1 with mixed black and yellow hairs apically (India: KL, TN; iii-iv; ♂ ♀) rossi Ghorpadé, sp. nov.
- [Holotype ♂, 12km NE. Murnar, 20.iii.1962 (Ross & Cavagnaro) - CAS.
- Paratype ♀, Lovedale in Octocamund - KGC]

Key to Indian species of DIDEA Macquart

- 1. Face yellow with narrow black median vitta; scutellum with ^{only} all yellow hairs; tibia 3 black, basal one-third yellow; sternum 4 black (India: JK; viii-ix; ♂) vockerothi Ghorpadé, sp. nov.
- [Holotype ♂, Gulmarg, 17.viii-5.ix.1978 (Copenhagen Zool. Mus. Exprd) - UZM]
- Face entirely yellow; scutellum with mostly black hairs; tibia 3 wholly black; sternum 4 black with anterior ^{one} half yellow (Burma; China; India: MG; iv-v, x; ♂ ♀) poorva Ghorpadé, sp. nov.
- [Holotype ♂, Kambaiti, 29.v.1934 (Malaise) - ZMUH. Paratypes ♂ ♀, Kambaiti, Shillong, Chinkiang Hima - IARI, UZM, ZMUH]

Key to Indian species of DIDROIDES Brunetti

- 1. Femur 1-3 almost entirely yellow, at most extreme bases of coxae dark; tergum 1 laterally yellow; terga 2-4 with very broad yellow fasciae, posterior tergal margins also yellow at least medially ('India'; Burma; India: MG; iii, v; ♂ ♀) tigerinus (Bigot)
- Femur 1-3 yellow with at least basal one-fourth to one-third black; tergum 1 black, terga 2-4 entirely black, or with pairs of yellow spots or ^{with} not very broad yellow fasciae 2
- 2. Abdomen mostly black dorsally; tergum 3 black, or with pair of yellow spots which are always smaller than those on tergum 2, posterior margin black; terga 4 & 5 entirely black or ^{with} only extreme posterior margin of tergum 5 yellowish (India: MG, AR, SI, WB; Burma; Nepal; i, iii, v, viii, ix-xi; ♂ ♀) kempi Brunetti
- Abdomen with several yellow markings dorsally; terga 3 & 4 with yellow fasciae; tergum 5 mostly yellow 3
- 3. Femur 3 almost wholly, or at least basal two-thirds, black; tergum 2 all black, or with ^{small} yellow pair of spots; sternum 2 black or with anterior and posterior margins narrowly yellow; sterna 3 & 4 black, ^{each} with ^{large} yellow pair of spots on posterior margins (Burma; India: AR; iii-iv, xi; ♂ ♀) trilineatus Brunetti
- Femur 3 yellow with basal half to two-thirds black; tergum 2 with ^{pair} of large yellow spots which are narrowly separated in middle; ^{sterna} 2 & 3 black with anterior and posterior margins yellow; sternum 4 wholly black (India: SI, WB; viii; ♂ ♀) ovatus Brunetti

not as he mentioned; they are not below (and they are not part of the femora)

Key to Indian species of EPISTROPHE Walker

- 1. Femur 3 (especially ventrally) and tibia 3 (especially dorsally) with a fairly long, dense, black 'brush' of hairs; tergum 1 almost entirely yellowish white ('E. Indies'; Burma; India: HP, UP; iii, vi-x; ♂ ♀) aequalis (Walker)
- Femur 3 and tibia 3 without such a 'brush' of hairs; tergum 1 at least with a pair of posteromedian brownish-black spots 2

- 2. Eye haired 3
- Eye bare 4
- 3. Scutellum with mainly black hairs, ^{but with few} except some yellow hairs on margins; tergum 1 mostly black, ^{with} only lateral margins yellowish; tergum 2 with posterior margin almost wholly black (India: UP, JK, WB; Burma; Nepal; iv-vi, x; ♂ ♀) griseocincta (Brunetti)
- Scutellum with all yellow hairs; tergum 1 mostly yellow with a brownish black spot on the middle of each side; tergum 2 with posterior margin entirely yellow (Burma; v; ♀) flavopilosa Ghorpade, sp. nov.

~~Key to Indian species of EPISYRPHUS~~

- [Holotype ♀, Kambaiti, 24.v.1934 (Malaise) - CNC] *Should this be in Stockholm rather than in CNC? in ZMU?*
- Femur 3 yellow with apical ^{one-}half black; femur 1 & 2 yellow or very faintly brownish-black on extreme bases; tergum 2 with anterior half or more all yellow, except for a brownish-black median vitta in some specimens (India: WB, MG; Nepal; iv-v, vii, x; ♂ ♀) quinquevittata (Brunetti)
- Femur 3 yellow with basal three-fourths black; femur 1 & 2 yellow with basal one-third or more black; tergum 2 with anterior half black, except for yellow lateral margins (India: WB; x; ♀) carmichaeli Ghorpade, sp. nov.
- [Holotype ♀, Algarah nr Kalimpong, 27.x.1981 (Ghorpade) - KGC.
- Paratype ♀, Algarah - KGC]

A. ne-half is probably no ter than half!

Key to Indian species of EPISYRPHUS Matsumura

- 1. Anterior mesonotal collar of longer and denser hairs present; terga 2 & 4 with black median vitta; frons with three black spots above antennae (Formosa; Ceylon; Nepal; ix; ♂ ♀) arcifer (Sack)
- Anterior mesonotal collar of hairs absent; terga 2 & 4 without black median vitta; frons with only two black spots above antennae 2
- 2. Sterna with black spots medially, or immaculate (Europe; India: HP, JK, FU, UP; Pakistan; ii-x; ♂ ♀) balteatus (De Geer)
- Sterna 2 & 3 (at least) with complete or incomplete black subposterior fasciae (Java; Bangladesh; Ceylon; India: AS, BI, DE, GU, HA, HP, KL, KN, MG, MN, MP, PU, SI, TN, UP, WB; Nepal; i-xii; ♂ ♀) viridaureus (Wiedemann)

Key to Indian species of EUPRODES Osten Sacken

- 1. Alula entirely microtrichose 2
- Alula basomedially bare 3
- 2. Lunule yellow; scutellum with ^{only} all yellow hairs or with a few black hairs in middle; male with occipital fringe of hairs on dorsal one-fourth all yellow; female frons with dorsal half black and without dust spots; sternum 5 all yellow (Europe; India: HP, JK; Nepal; v, viii-x; ♂ ♀) latifasciatus (Macquart)
- Lunule yellow, with brownish spots above antennal bases; scutellum with black hairs except along margins; male with occipital fringe of hairs on dorsal one-fourth yellow with a row of black hairs; female frons with dorsal two-thirds or more black and with dust spots; sternum 5 yellow with median black spot (Afghanistan; Bhutan; India: HP, JK, PU, UP, WB; Nepal ?; i-ii, iv, vi-x, xii; ♂ ♀) pseudonitens (Dusek & Laska)
- 3. Tergum 2 with yellow spots broadly confluent; femur 3 with broad diagonal brownish annulus, or darkening on anterior half (China; Afghanistan; Ceylon; India: AR, AS, BI, DE, GU, HP, JK, KN, MG, PU, SI, TN, UP, WB; Nepal; Pakistan; i-ii, iv-xii; ♂ ♀) confrater (Wiedemann)
- Tergum 2 with yellow spots separate; femur 3 yellow, at most with basal one-fourth brownish black 4

- 4. Gena wholly black; facial tubercle brownish; male tergum 4 with posterior marginal yellow fascia entire, ^{with} terminalia large; female frons with dorsal half or less black, dust spots absent or reduced to an oblique 'finger' on each side and well separated in middle (Europe; India: AR, HP, JK, MG, PU, UP, WB; Nepal ?; Pakistan; iii-vi, viii-x; ♂ ♀) corollae (Fabricius)
- Gena yellow ^{with} anterior margin dark; facial tubercle yellow; male tergum 4 with posterior marginal yellow fascia emarginate in centre, ^{with} terminalia small, normal; female frons with dorsal half black with a pair of large dust spots ^{which are} narrowly separated medially (Sudan; Iran; Nepal; iv, xi-xii; ♂ ♀) muba (Wiedemann)

afica?

Key to Indian species of LEUCOZONA Sohner

- 1. Face entirely black; scutellum black ^{with} posterior one-third yellow; tergum 2 yellow (India: UP; viii; ♂) brunettii Ghorpadé, sp. nov.
[Holotype ♂, Mussooria, 3-14.viii.1978 (Copenhagen Zool. Mus. Expdn) - UZM]
- Face predominantly yellow ^{but} ~~except~~ gena and lower face black in virendra; scutellum yellow; tergum 2 with some black areas. 2
- 2. Scutellum with yellow hairs only; tibiae yellow; female frons with black hairs (Nepal; Burma; China; v-vi, viii; ♂ ♀) kingdonwardi Ghorpadé, sp. nov.
- Scutellum with yellow and black hairs; tibiae yellow and black; female frons with yellow and black hairs (India: UP; ix; ♀) virendra Ghorpadé, sp. nov.
[Holotype ♀, Dhakuri, 28.ix.1973 (Gupta) - KGC]
- [Holotype ♂, Nepal 28°00'N, 85°00'E, 21-27.v.1967 (Canadian Nepal Expdn) - CNC. Paratypes ♀, Adung Valley in NE. Burma, Shifu in Szechuan - AMNH, BMNH, USNM]

Should abdominal markings not be mentioned further?

Key to Indian species of MELISCAEVA Frey

- 1. Face entirely yellow, without any dark vitta or tubercle, except in ♀ female lefyoi which has a narrow ^{with} incomplete vitta. 2
- Face yellow with a broad ^{with} dark median vitta, or at least tubercle broadly dark. 5
- 2. Antenna entirely yellow; hind leg almost wholly yellow ^{with} ~~except~~ femur 3 slightly dark in centre in male; terga 3 & 4 with only anterior corners black, ^{with} anterior black fascia; female femur 3 all yellow (Burma; vi; ♂ ♀) malaisei Ghorpadé, sp. nov.
[Holotype ♂, Kambaiti, 11.vi.1934 (Malaise) - ZMUH. Paratype ♀, Kambaiti - ZMUH]
- Antenna yellow, dorsally blackish; femur 3 wholly yellow but with dark ^{area} portion in centre; tergum 3 with complete anterior black fascia which may be emarginate in middle; tergum 4 with anterior black fascia incomplete in centre 3

⁷Meliscaeva darjeelingensis Datta & Chakraborti is close to kusuma Ghorpadé, sp. nov., but differs as follows. Its facial tubercle is described as "slightly produced forward below". Its facial vitta is a "faint brown mid-line from base of antennae to mouth border". Its hind femur is "black except some basal portion and distal portion" and its "underside with long hairs". The male terminalia of darjeelingensis are not like those of any other Indian species of the genus keyed above. It was described by Datta & Chakraborti (1986: 4, Fig. 1) from 3 ♂ 3 ♀ collected in the Lloyd Botanical Garden at Darjeeling (India: WB) on 4.i.1971 by J.M. Julka and/or A.R. Bhowmik, and (15) deposited in the Zoological Survey of India, Calcutta, India.

3. Male tergum 2 with median vitta at broadest narrower than the posterior black fascia; male frons with hairs brownish yellow ~~not black~~; male terga 3 & 4 with complete anterior black fascia; female tergum 2 with median black vitta not developed or, if present, narrower than the posterior black fascia (Java; Ceylon; Malaya; Thailand; ii, v-vi, x; ♂ ♀) strigifrons (de Meijere)

- Male tergum 2 with median black vitta broader than the posterior fascia; male frons with black hairs; male tergum 4 with anterior black fascia incomplete; female tergum 2 with median black vitta broader than posterior black fascia 4 *what about tergum*

4. Female with facial vitta narrow, incomplete; tergum 5 with posterior black fascia reaching only ^{centre of} ~~centre of~~ tergum; male tibia 2 with black hairs on apical half (India: JK, HP, UP; viii-x; ♂ ♀)

- Female with face entirely yellow, ~~no~~ ^{without} median vitta; tergum 5 with posterior black fascia produced triangularly in middle almost to anterior margin; male tibia 2 with black hairs only on apical one-sixth (India: WB, MG; v; ♂ ♀) cinotelloides Ghorpadé, sp. nov.

[Holotype ♂, Darjéling, 1.v.1974 (Ghorpadé) -- KGC. Paratypes ♂ ♀, Darjéling, Shillong -- KGC, IARI]

5. Face yellow, only tubercle broadly brownish black, ~~no~~ ^{absent} median vitta; male frontal hairs yellowish brown; female terga 3 & 4 with complete anterior black fascia, not emarginate in centre; female frons at vertex only one-fourth as wide as at level of antennal bases (India: TN, KL; iii-iv, x; ♂ ♀) mathisi Ghorpadé, sp. nov.

[Holotype ♂, Yercaud, 20.ix.1978 (Ghorpadé) -- KGC. Paratypes ♂ ♀, Yercaud, Ootacamund, 13km NE. Murmur -- CAS, KGC]

- Face yellow with broad, complete or almost complete median dark vitta; male frontal hairs black; female tergum 3 with anterior black fascia complete but emarginate in centre, tergum 4 ^{with} anterior black fascia variable, frons at vertex broader, one-third as wide as at level of antennal bases 6

6. Scutellum dark on disc; lower face distinctly produced forward, with oral cavity almost three times as long as wide, facial vitta broad and complete; male tergum 3 with anterior black fascia complete and not emarginate, tergum 4 with only anterior corners black; female tergum 2 with median vitta broader than posterior black fascia, tergum 4 with anterior black fascia complete, not emarginate but very narrow (Ceylon; India: TN; vii, ix-xi; ♂ ♀) ceylonica (Keiser)

- Scutellum all yellow; lower face not produced, normal, oral cavity at most only twice as long as wide, facial vitta variable, broad or narrow, complete or incomplete; male tergum 3 with anterior black fascia complete and emarginate in centre, tergum 4 ^{with} anterior black fascia incomplete or complete as in magnifica; female tergum 2 with median vitta equal to or narrower than posterior black fascia, tergum 4 with anterior black fascia variable 7

The facial vitta doesn't seem to be reliable. I would suggest you put it after wing or omit it.

Facial vitta complete, narrower in male, broad in female (some females have an incomplete vitta); wing wholly microtrichose, except ^{at} extreme base of second costal cell anteriorly (India: HP, UP; viii-x; ♂ ♀) tribeni (Nayar)

Facial vitta broad, complete or almost complete; wing with costal and basal cells partly bare 8

8. Facial vitta complete, oral cavity more than twice as long as wide; lunule entirely black; male tergum 4 with incomplete anterior black fascia ~~in its~~ ^{in its} centre (India: WB; v, x; ♂ ♀) kusuma Ghorpadé, sp. nov.

[Holotype ♂, Darjéling, 1.v.1974 (Ghorpadé) -- KGC. Paratypes ♂ ♀, Debrepani, Kalimpong -- CAS, KGC]

- Facial vitta almost complete, oral cavity at most only twice as long as wide; lunule orange on extreme sides; male tergum 4 with complete anterior black fascia (India: WB; x; ♂ ♀) magnifica Ghorpadé, sp. nov.

[Holotype ♂, Debrepani, 22.x.1961 (Ross & Cavagnaro) -- CAS. Paratypes ♂ ♀, Debrepani -- CAS]

should mention be omitted.

are they definitely distinct? Unless terminalia differ would be doubtful.

Key to Indian species of PARASYRPHUS Matsumura

1. Terga 3 & 4 with yellow fasciae separated into a pair of arcuate spots; tibia 3 (in females only ?) yellow with a black median annulus (Nepal; v; ♂ ♀) *sherpa* Ghorpadé, sp. nov.
 [Holotype ♂, Nepal 27° 58' N, 85° 00' E, 18.v.1967 (Canadian Nepal Expdn) — CNC. Paratype ♀, Nepal 27° 58' N, 85° 00' E — CNC /
- Terga 3 & 4 with complete yellow fasciae; tibia 3 brownish-black except for basal one-fourth or less 2
2. Facial vitta brownish black, well developed and complete; oral margin broadly black; femur² 1 & 2 with more than basal one-third to half yellow; tibiae 1 & 2 with at least a subapical brownish black annulus (Japan; Nepal; iv-vi; ♂ ♀) *aeneostoma* Matsumura
- Facial vitta absent or very thin and incomplete, not reaching antennal bases; oral margin entirely yellow; femur 1 & 2 with only basal one-fourth to one-third brownish-black; tibia 1 & 2 all yellow 3
3. Facial tubercle with a narrow brownish median vitta; lower face with hairs brownish or black; sternum 3 with long yellow hairs and long or short black hairs (India: JK, HP, UP; vi, viii-x; ♂ ♀) *thompsoni* Ghorpadé, sp. nov.
 [Holotype ♂, Gulmarg, 18.x.1974 (Ghorpadé) — KGC. Paratypes ♀, Gulmarg, Dalhousie, Harsil — KGC, UZM /
- Facial tubercle yellow; hairs on lower face and sternum 3 all yellow (India: JK; x; ♂) *kashmiricus* Ghorpadé, sp. nov.
 [Holotype ♂, Pahalgam, 17.x.1974 (Ghorpadé) — KGC /

Key to Indian species of RHINOBACKHA de Meijere

1. Pleurotergite yellow on anterior two-thirds, ^{otherwise ?} rest black; face with oral margin all yellow; scutellum black, anterior one-third yellow; femur 3 brownish black except extreme base; female tergum 5 all black (India: KN, TN; viii, xi; ♂ ♀) *peterseni* Ghorpadé, sp. nov.
 [Holotype ♂, Kemmangundi, 11-16.xi.1977 (Copenhagen Zool. Mus. Expdn) — UZM. Paratypes ♂ ♀, Kemmangundi, Coonoor — KGC, UZM /
- Pleurotergite wholly black; face with oral margin at least partly brownish black; scutellum all black, or ^{with} less than anterior one-sixth yellow; femur 3 yellow, only dorsally brownish; female tergum 5 all black, or with a pair of vertical yellow vittae 2
2. Face with oral margin yellow on anterior half; antennal segment 3 partially yellow; scutellum black, ^{with} anterior one-sixth or less yellow; terga 2-4 ^{each} with a pair of oblique yellow spots; female tergum 5 black, with a pair of vittate yellow spots (Ceylon; ii-xi; ♂ ♀) *gracilis* de Meijere
- Face with oral margin, antennal segment 3, scutellum, and abdominal terga all brownish black or black (India: TN, KL; iii, x; ♂ ♀) *krishna* Ghorpadé, sp. nov.
 [Holotype ♂, Shembaganur, 31.x.1975 (Viraktamath) — KGC. Paratypes ♂ ♀, Shembaganur, Mumar — KGC /

Key to Indian species of SCAEVA Fabricius

1. Tergum 2 with pale spots not reaching lateral margins; tergum 5 with lateral margins mostly black 2
- Tergum 2 with pale spots confluent with lateral margins; tergum 5 with lateral margins mostly yellow 3
2. Scutellum almost wholly black-haired; tergum 2 with pale spots lunulate and narrow; terga 3 & 4 with pale spots lunulate, inner ends spatulate; tergum 5 with posterior yellow marginal fascia not sinuate (Europe; India: JK, PU, UP; Pakistan; vi, x-xii; ♂ ♀) *pyrastris* (Linnaeus)

- Scutellum with white hairs at least on anterior half; tergum 2 with pale spots triangular; terga 3 & 4 with pale spots broad and quadrate, inner ends truncate or weakly arcuate; tergum 5 with posterior yellow marginal fascia sinuate (Europe; Pakistan; iii, vi, viii-x; ♂ ♀) albomaculata (Macquart)
- 3. Lateral mesonotal margins not bright yellow and not distinct from dorsum; scutellum almost wholly black haired; terga 3 & 4 with pale spots lunulate (China; India: MG; i, iv, viii; ♂ ♀) lunata (Wiedemann)
- Lateral mesonotal margins bright yellow, distinct from black dorsum; scutellum with white hairs at least on anterior one-third; terga 3 & 4 with pale spots quadrate-oval (India: UP, DE, HP, JK, PU, RA, WB; Pakistan; i-iv, ix-x, xii; ♂ ♀) latimaculata (Brunetti)

Key to Indian species of SPHAEROPHORIA Le Peletier & Serville

'notopleural callus' or 'transverse suture' 2.

tergum 2?

- 1. Mesonotum with lateral yellow margins complete; facial black median vitta absent or very weak 2
- Mesonotum with lateral yellow margins incomplete, extending only to notopleural callus; facial black vitta variable 7
- 2. Antennal segment 3 wholly yellow, lunule yellow; scutellum with all yellow hairs; femur 1 with all yellow hairs; tergum 2 with yellow fascia reaching lateral margins in full width, not narrowing; female frons with median black vitta narrower than adjacent yellow areas, tergum 2 with yellow fascia posteriorly emarginate in centre, tergum 6 yellow with a subtriangular vertical black spot (India: WB, DE, HP, JK, MH, PU, UP; iii-v, vii-xii; ♂ ♀) bengalensis Macquart
- Antennal segment 3 at least faintly brown dorsally; scutellum with black hairs at least partially; tergum 2 with yellow fascia narrowing to lateral margins; female frons with median black vitta at least as wide as adjacent yellow areas, tergum 6 differently marked. 3
- 3. Femur 1 almost entirely black haired; male femur 3 with stout black spinules posteroventrally on apical one-third; female femur 3 with thick black hairs posteroventrally on apical one-third, tergum 2 with yellow fascia deeply emarginate posteriorly or narrowly separate divided in centre, tergum 6 with a subtriangular anteromedian black spot flanked by two similar spots on posterior margin (Sweden; India: JK; iv, vi-x; ♂ ♀) scripta (Linnaeus)
- Femur 1 with yellow hairs at least on basal one-third; male femur 3 with no such spinules; female femur 3 with normal hairs (not thick), tergum 2 with yellow fascia not emarginate posteriorly (at most narrowed in centre), tergum 6 differently marked. 4
- 4. Face with weak but distinct brownish black vitta; lunule at least partly brownish black; scutellum almost wholly black-haired; female frons with median black vitta very broad, at least three times as wide as adjacent yellow areas, tergum 6 with large subtriangular black spot anteromedially on margin, separated from posterior margin (India: TN, KL; iii-v, x; ♂ ♀) knutsoni Ghorpadé, sp. nov.
 [Holotype ♂, Kodaikanal, 29.x.1975 (Ghorpadé) -- KGC. Paratypes ♂ ♀, Ootacamund, Kodaikanal, Shembaganur, Murnar -- BMNH, CAS, CNC, KGC]
- Face entirely yellow, without vitta; lunule wholly yellow; scutellum with yellow hairs at least on lateral one-fourth; female frontal black vitta as wide as adjacent yellow areas, tergum 6 differently marked. 5
- 5. Male femur 1 with anterior half more or less wholly black-haired; female tergum 6 yellow with three black spots which are narrowly confluent in some specimens ('India'; India: AS, DE, HP, MG, SI, UP, WB; Nepal; ii-vii, ix-xi; ♂ ♀) indiana Bigot

- Male femur 1 with all yellow hairs, at most with a few black hairs on extreme apex; female tergum 6 yellow with median black vitta joining subposterior black fascia 6
- 6. Scutellum almost wholly yellow haired, at most with a few black hairs posteromedially; male tergum 2 with yellow fascia only slightly narrowed at lateral margins (more than half this width in centre); female tergum 6 with anteromedian black vittate spot, posteriorly with a faint pair of roundish black spots, distinct or confluent in some specimens (Australia; Burma; Ceylon; India: KL, KN, MG, MH, MP, PU, SI, TN, WB; Nepal; i-v, vii-xii; ♂♀) macrogaster (Thomson)
- Scutellum with more than median half black haired, only anterolateral corners yellow haired; male tergum 2 with yellow fascia narrowing considerably to lateral margins (here less than half width as in centre); female tergum 6 with a large black spot appearing as an anteromedian vittate spot joined to a transverse median fasciate spot (India: AR, AS, MN; v, x; ♂♀) vockerothi Joseph
- 7. Lunule yellow; tergum 2 with yellow fascia distinctly separated into two spots; scutellum almost wholly yellow-haired, at most with a few black hairs posteromedially (Abyssinia; India: JK; viii-x; ♂♀) rueppellii (Wiedemann)
- Lunule at least partially black; tergum 2 with entire yellow fascia; scutellum with at least posteromedian one-third black-haired 8
- 8. Frons all black-haired; scutellum almost entirely black-haired; female frons with black vitta twice as wide as lateral yellow areas, tergum 6 reduced, less than half as long as tergum 5 (India: HP, JK, UP, WB; Nepal; iv-vi, viii-x; ♂♀) viridanea Brunetti
- Frons yellow-haired; scutellum with yellow hairs at least on anterior half; female frontal vitta as wide as lateral yellow areas, tergum 6 normal (female of ladakhensis unknown) 9
- 9. Antennal segment 3 brownish-black only on dorsal half; femur 1 all yellow-haired; scutellum black-haired only posteromedially; female tergum 6 yellow with a large subtriangular black spot reaching anteromedian and lateral margins (India: AR, MG, SI, WB; Burma; i, iv-v, ix; ♂♀) assamensis Joseph
- Antennal segment 3 almost all brownish black; femur 1 almost wholly black haired; scutellum with posterior two-thirds or so black-haired; female unknown (India: JK; vi; ♂) ladakhensis Ghorpade, sp. nov.
 [Holotype ♂, Drass, 12.vi.1973 (Girish Chandra) - KGC]

Key to Indian species of SYRPHUS Fabricius

I would refer to refer only if size & length total length given other things and hair characters of male for separation.

- Larger flies, distinctly more robust in shape; wing with second basal cell wholly microtrichose; femur 3 covered with black hairs on more than basal half; tergum 2 with at least a few black hairs on apical half 2
- Smaller flies, more normal in shape; second basal cell at least partially bare; femur 3 and tergum 2 yellow-haired (less than or equal to basal half black-haired in dalhousiae) 1
- Eye distinctly haired, ^{hair but} short and densely in males, shorter and scattered in females; sternum 3 with a variously shaped, smaller median spot (not fascia) quadrate, elongate, or triangular; ~~XXXXXXXXXXXXXXXXXXXX~~ female femur 3 with at least basal half black; tibiae 1 & 2 in both sexes with at least basal one-third black (N. America; India: HP, JK, UP, WB; v, x-xi; ♂♀) torvus Osten Sacken
- Eye bare ^{which has} rarely very sparsely and minutely haired; sternum 3 with a wide median black fascia, its anterior margin produced medially and laterally; female femur 3 all yellow except ^{for} extreme dark base; tibiae 1 & 2 in male black at least on basal one-fourth, in female almost all yellow except for extreme bases (England; India: HP, JK, UP; viii-x; ♂♀) ribesii (Linnaeus)

deep basal cell refer to femur 3 tergum 2 or both 2

Did you not see torvus from Europe or ribesii from N.A. both are very common & widespread Palearctic spp. - a viridanea. [I realize, on rereading the introduction, that at least the torvus record is because of the type label.]

5. Femur 2¹ & 2 black on basal one-fifth to one-sixth; tibia 3 entirely yellow (Europe; India: JK; vi, x; ♂ ♀). vitripennis Meigen
 - Femur 2¹ & 2 black on basal one-third to half; tibia 3 black on apical half (India: AR, MG, SI, UP, WB; Nepal; iv, vi-xii; ♂ ♀). fulvifacies Brunetti

3. Legs almost wholly yellow, except at most the extreme bases of femur 2 & 2 and an oblique (dark) fascia on femur 3 (in dalhousiae) 4
 - Legs distinctly black on basal portions, on tibia^{at least} at least basal one-sixth, on femur^{at least} at least basal half. 5
4. Femur 3 with an oblique posteromedian black fascia; sternum 2 yellow with median brownish-black spot; sternum 3 yellow with a median brownish-black fascia (India: HP, JK, UP; vi-vii, ix-x; ♂ ♀) dalhousiae Ghorpadé, sp. nov.

~~.....~~
 [Holotype ♂, Dalhousie, 10.x.1974 (Ghorpadé) - KGC. Paratypes ♂ ♀, Srinagar, Dalhousie, Simla, Mussoorie - CIBCI, CNC, KGC /
 - Femur 3 and sternum 2 & 3 entirely yellow (India: JK; x; ♀) howletti Ghorpadé, sp. nov.
 [Holotype ♀, Srinagar, 16.x.1974 (Ghorpadé) - KGC. Paratype ♀, Srinagar - KGC]

→ Dr regulates on underside of mid baritarsus ^{of Syrphus} vary in colour or they do in Nearctic species?

Acknowledgements

My research on the Syrphidae germinated at the suggestion of my senior Professor, the late Dr M. Puttarudriah, when I joined the M.Sc. (Agri.) degree programme at the Entomology Department of the University of Agricultural Sciences at Bangalore in 1971. I owe my thanks to him and to Dr G.P. Channabasavanna, who acted as my Major Advisor through the M.Sc. thesis requirement and then for my Ph.D. degree from 1975-81. I also spent 1973-74 with Dr Virendra K. Gupta, at the Zoology Department of Delhi University, as his Ph.D. student and my grateful thanks are also due to him for introducing me to serious taxonomic research. Dr J.R. Vockeroth (CNC, Canada), Dr F.C. Thompson, Dr Lloyd Knutson and Dr Wayne N. Mathis (all USNM, U.S.A.) were instrumental in assisting and guiding my research when I was a Postdoctoral Research Fellow at the Smithsonian Institution in Washington, D.C. (U.S.A.) during 1982-83. Their help and encouragement then, and earlier (through ^{the} correspondence, loans and literature gifts), was critical in raising the quality of my research findings that are presented here. Many other persons need to be acknowledged (who helped me in many ways) but they will be named in our forthcoming paper. Suffice it for me to write here that I am indeed very grateful to all the individuals and institutions in India and abroad who supported and assisted my research on the Syrphidae, by providing loans or gifts of specimens, reprints or xerox ^{photo} copies of needed literature, or data and comments in correspondence, and also to those who collected for me or my research, with or without me, in the field. I must also thank the Council of Scientific and Industrial Research, New Delhi, India, and the Smithsonian Institution, Washington, D.C., U.S.A., for supporting my research on the Syrphidae financially. I am grateful to Drs F.C. Thompson and J.R. Vockeroth for their review of a draft ~~of the~~ manuscript of this paper.

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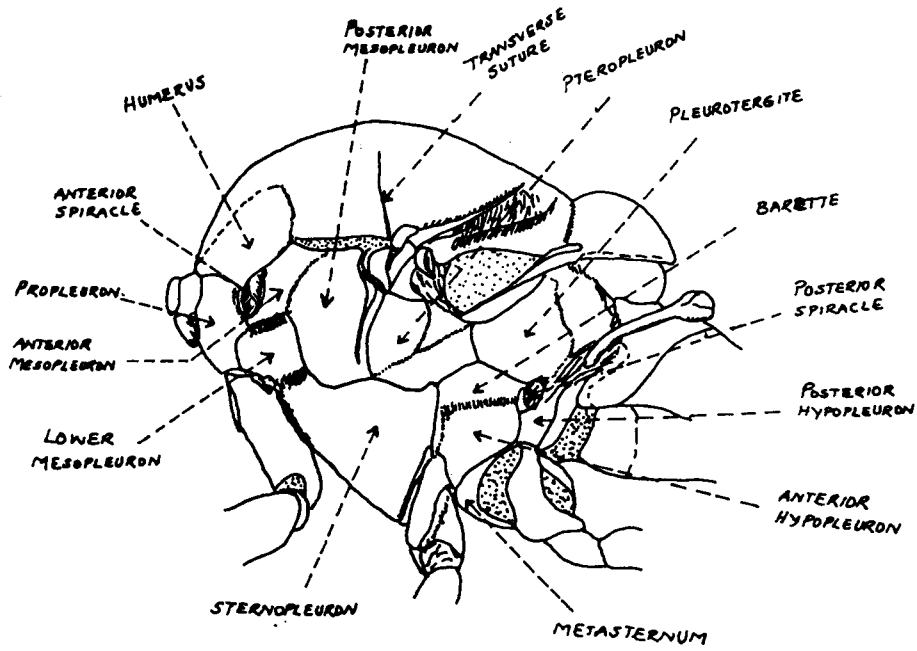
Dr Kumar Ghorpadé
08 July 1993

LEGENDS

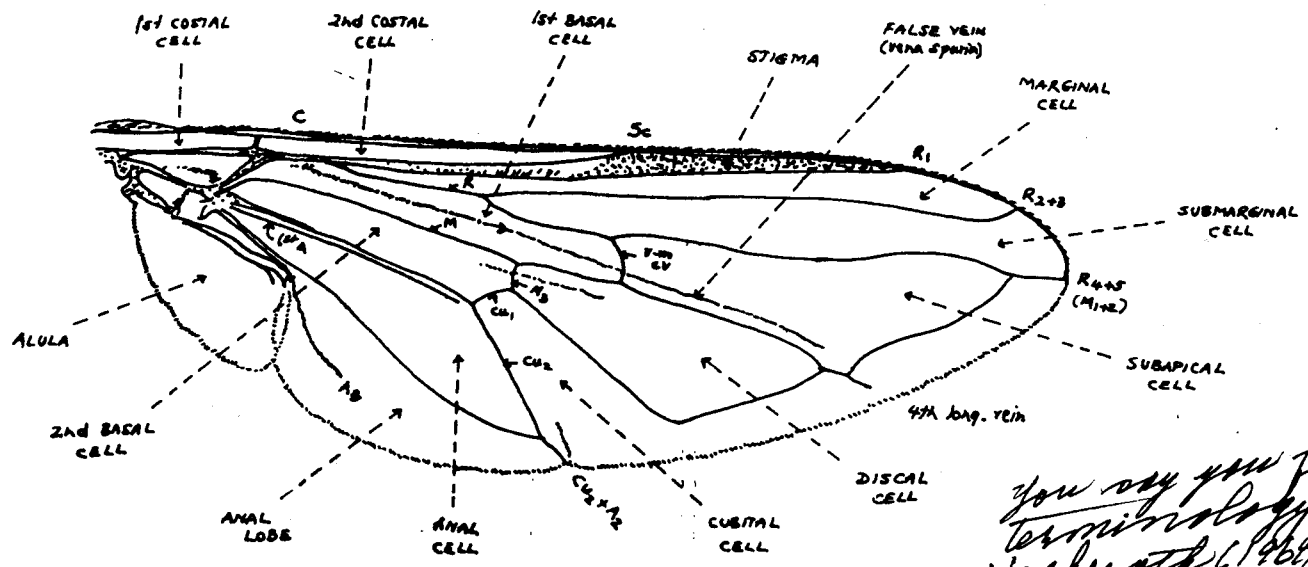
Figs 1-2. Key characters. (1) Pleuron; (2) Wing.

Figs 3-7. Key characters. (3) Head; (4) Abdomen; (5) Sternopleuron;
(6) Hind coxae; (7) Male terminalia.
^{posterior view}

should mesonotum (or scutum)
be labelled?

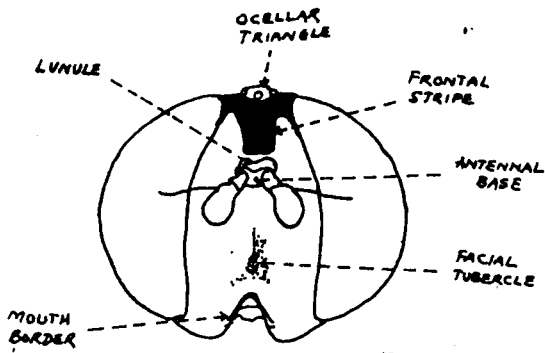


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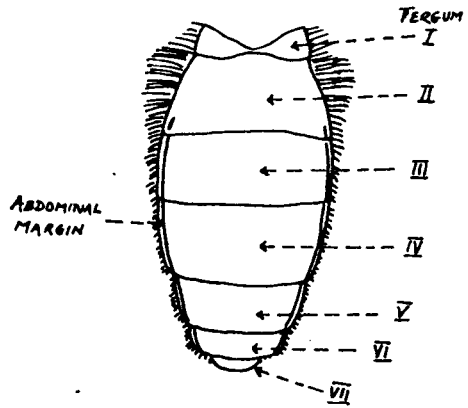


29 2

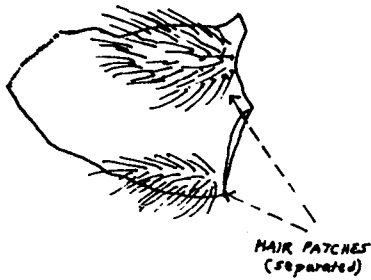
you say you follow terminology of Soderstrom (1960) but I did not use these names for most of the cells



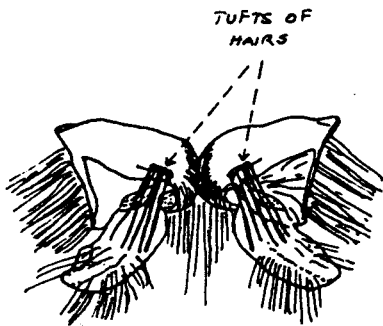
30



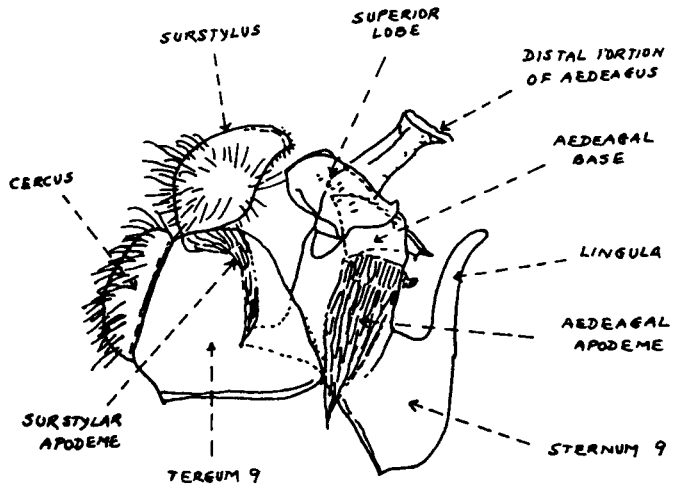
31 4



5 32



6 33



7 34