

OCCASIONAL PAPER No. 268

**Records of the
Zoological Survey of India**

**Taxonomic studies on Pteromalidae
(Hymenoptera : Chalcidoidea) of Southeast Asia
based on collections of Bohart Museum of
Entomology, University of California, Davis, USA.**

P. M. SURESHAN

ZOOLOGICAL SURVEY OF INDIA

OCCASIONAL PAPER No. 268

**RECORDS
OF THE
ZOOLOGICAL SURVEY OF INDIA**

**Taxonomic studies on Pteromalidae
(Hymenoptera : Chalcidoidea) of Southeast Asia based
on collections of Bohart Museum of Entomology,
University of California, Davis, USA.**

P. M. SURESHAN

*Zoological Survey of India, Estuarine Biological Station,
Hilltop, Gopalpur-on-Sea, Orissa-761 002, India.*

email: samanyu2003@yahoo.com

Edited by the Director, Zoological Survey of India, Kolkata



सत्यमेव जयते

**Zoological Survey of India
Kolkata**

CITATION

Sureshan, P. M. 2007. Taxonomic studies on Pteromalidae (Hymenoptera : Chalcidoidea) of Southeast Asia based on collections of Bohart Museum of Entomology, University of California, Davis, USA.. *Rec. zool. Surv. India, Occ. Paper No.*, **268** : 1-42.

Published : July, 2007

ISBN : 978-81-8171-154-0

© Govt. of India, 2007

ALL RIGHTS RESERVED

- No part of this publication may be reproduced stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise without the prior permission of the publisher.
- This book is sold subject to the condition that it shall not, by way of trade, be lent, resold, hired out or otherwise disposed of without the publisher's consent, in any form of binding or cover other than that in which, it is published.
- The correct price of this publication is the price printed on this page. Any revised price indicated by a rubber stamp or by a sticker or by any other means is incorrect and should be unacceptable.

PRICE

Indian Rs. 150.00

Foreign \$ 10 £ 8

Published at the Publication Division, by the Director, Zoological Survey of India, 234/4 A.J.C. Bose Road, 2nd MSO Building, Nizam Palace (13th floor), Kolkata - 700 020 and printed at Krishna Printing Works, Kolkata - 700 006.

**RECORDS OF THE
ZOOLOGICAL SURVEY OF INDIA
OCCASIONAL PAPER**

No. 268

2007

Pages 1-42

CONTENTS

INTRODUCTION	1
ABBREVIATIONS OF DEPOSITORIES	1
LIST OF GENERA GROUPED UNDER DIFFERENT SUBFAMILIES	2
GENERA AND SPECIES IN ALPHABETICAL ORDER	2
1. <i>Acroclisoides indicus</i> Ferriere	2
2. <i>Agiommatus paria</i> (Motschulsky)	4
3. <i>Anisopteromalus calandrae</i> (Howard)	4
4. <i>Callitula anguloclypea</i> Sureshan	4
5. <i>Callitula heydoni</i> sp.nov.	5
6. <i>Callitula peethapada</i> Narendran & Mohana	6
7. <i>Callitula</i> sp.	6
8. <i>Coelopisthia lankana</i> Sureshan	6
9. <i>Dinarmus acutus</i> (Thomson)	8
10. <i>Dinarmus basalis</i> (Rondani)	8
11. <i>Dipara intermedia</i> Sureshan & Narendran	9
12. <i>Dipara</i> sp.	9
13. <i>Gastrancistrus</i> sp.	9
14. <i>Grahamisia gastris</i> Sureshan & Narendran	9
15. <i>Halticoptera propinqua</i> (Waterston)	11
16. <i>Herbertia indica</i> Burks	11
17. <i>Homoporus</i> sp.	13
18. <i>Inkaka keralensis</i> Sureshan & Narendran	13

19. <i>Inkaka</i> sp.	13
20. <i>Kumarella angulus</i> Sureshan	14
21. <i>Lariophagus distinguendus</i> (Forster)	14
22. <i>Lyubana longigastra</i> Sureshan	16
23. <i>Lyubana</i> sp.	16
24. <i>Macroglenes</i> sp.	16
25. <i>Merismomorpha</i> sp.	18
26. <i>Mesopolobus</i> sp.	18
27. <i>Metastenus concinnus</i> Walker	18
28. <i>Mokrzeckia menzeli</i> Subba Rao	18
29. <i>Neolyubana noyesi</i> Sureshan	20
30. <i>Norbanus acuminatus</i> Dut & Ferriere	20
31. <i>Norbanus equus</i> Sureshan	24
32. <i>Norbanus malabarensis</i> Sureshan	24
33. <i>Norbanus thekkadiensis</i> Sureshan	24
34. <i>Oniticellobia longigastra</i> Sureshan & Narendarn	26
35. <i>Oricoruna arcotnesis</i> (Mani & Kurian)	26
36. <i>Oxysychnus lankaensis</i> sp. nov.	27
37. <i>Pachyneuron aeneum</i> Masi	28
38. <i>Pachyneuron bangalorensis</i> sp. nov.	28
39. <i>Pachyneuron solitarium</i> (Hartig)	29
40. <i>Panstenon lankaensis</i> sp. nov.	30
41. <i>Papuopsia striata</i> Sureshan	31
42. <i>Paracarotomus cephalotes</i> Ashmead	31
43. <i>Parurios</i> sp.	31
44. <i>Propicroscytus oryzae</i> (Subba Rao)	33
45. <i>Pseudocatolaccus bouceki</i> sp. nov.	33
46. <i>Spalangia fuscipes</i> Nees	34
47. <i>Spalangia nigroaenea</i> Curtis	34

48. <i>Sphegigaster brunneicornis</i> (Ferriere)	36
49. <i>Sphegigaster karnatakaensis</i> sp. nov.	36
50. <i>Sphegigaster stepicola</i> Boucek	37
51. <i>Syntomopus carinatus</i> Sureshan & Narendran	38
52. <i>Systasis dalbergiae</i> Mani	38
53. <i>Systasis parvula</i> Thomson	39
54. <i>Systasis</i> sp.	39
SUMMARY	39
ACKNOWLEDGEMENTS	40
REFERENCES	40

INTRODUCTION

The present paper is the result of a study on a collection of Pteromalidae deposited in the Bohart Museum of Entomology, University of California, Davis, USA, which was made available for my studies through a loan arranged by the kind courtesy of Dr. Steven L. Heydon. The collections are mainly of Sri Lanka, India and some South East Asian countries. The present account is an addition to the taxonomic knowledge on Pteromalidae of Indian subcontinent and South East Asia.

Pteromalidae of Indian subcontinent was first reviewed by Boucek *et al.* (1979), which was supplemented by the works of Farooqi & Subba Rao (1985, 1986) who keyed out and catalogued the genera and species of Pteromalidae known from the region. Sureshan (2003) reviewed the subfamily Pteromalinae of the Indian subcontinent. Later Sureshan and Narendran (2003) compiled a checklist of the Pteromalidae and also provided an identification key for the genera of Pteromalidae known from the Indian subcontinent (Sureshan & Narendran, 2004a). Recently a few new taxa were also described in the family (Narendran *et al.* 2004, Sureshan, 2004, 2005 a,b, 2006 a,b, Sureshan & Narendran, 2004b and 2005 a, b, c).

This paper deals with 38 genera of Pteromalidae (30 genera with 43 identified species (including six new species) and 7 with species are not identified). The genera are grouped under different subfamilies and subfamilial classification by Boucek (1988) is followed here. The species studied are arranged in the alphabetical order.

F1-F6 – Funicular segments 1 to 6; OOL- Ocellocular distance; POL- Postocellar distance; SMV- Submarginal vein; MV- Marginal vein; PMV- Postmarginal vein; STV- Stigmal vein; T1-T6 - Gastral tergite 1-6.

ABBREVIATIONS OF DEPOSITORIES

BMNH - The Natural History Museum, London, U.K.

HDEO - Hope Department of Entomology, University Museum, Oxford.

IARI - Division of Entomology, Indian Agricultural Research Institute, New Delhi, India.

LUZN - Zoological Museum, Lund University, Sweden

NMV - Naturhistorisches Museum, Vienna, Austria.

- UCDC Bohart Museum of Entomology, University of California, Davis, USA.
 USNM - United States National Museum of Natural History, Washington DC, USA.
 ZMMS - Mosco State University Museum, Mosco, USSR.
 ZSI - Zoological Survey of India, Kolkatta, India.
 ZSIC - Zoological Survey of India, Western Ghats Field Research Station, Calicut, India.

LIST OF GENERA GROUPED UNDER DIFFERENT SUBFAMILIES

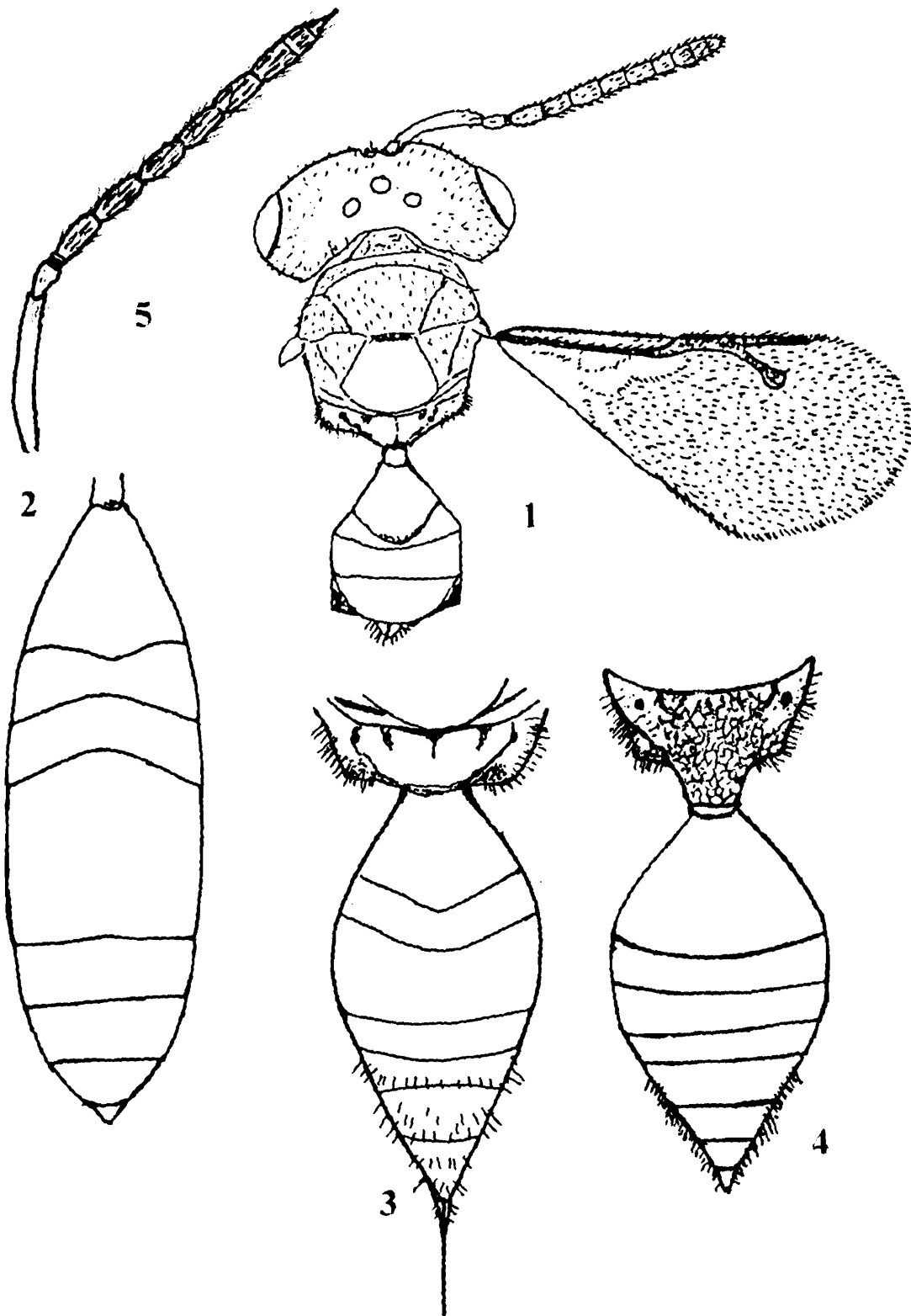
- Diparinae : *Dipara, Grahamisia, Parurios*
 Spalangiinae : *Spalangia*
 Herbertinae : *Herbertia*
 Ormocerinae : *Systasis*
 Erotolepsiinae : *Papuopsia*
 Pteromalinae : *Acroclisoides, Agiommatius, Anisopteromalus, Callitula, Coelopisthia, Dinarmus, Homoporus, Inkaka, Kumarella, Lariophagus, Lyubana, Merismomorpha, Mesopolobus, Metastenus, Mokrzeckia, Neolyubana, Norbanus, Oniticellobia, Oricoruna, Oxysychus, Pachyneuron, Paracarotomus, Propicroscytus, Syntomopus, Pseudocatolaccus, Sphegigaster.*
 Miscogasterinae : *Halticoptera*
 Panstenoninae : *Panstenon*
 Pireninae : *Gastrancistrus, Macroglenes*

GENERA AND SPECIES IN ALPHABETICAL ORDER

1. *Acroclisoides indicus* Ferriere (Fig. 1)

1931. *Acroclisoides indicus* Ferriere, *Bull. Ent. Res.*, **22** : 279. (BMNH)

Diagnostic characters : Length 1.4 mm. Head and thorax dark metallic blue, lower face mostly with golden reflection, gaster dark metallic blue dorsally and brown ventrally; lower posterior corner of gena produced into a short spine; antennae with pedicel plus flagellum almost equal to head width; forewing with PMV only a little longer than MV; gaster 6x as long as head plus thorax combined.



Figs. 1. *Acroclisoides indicus* Ferriere, female : body dorsal view; 2. *Agiommatus paria* (Motschulsky), female gaster dorsal view; 3. *Anisopteromalus calandrae* (Howard), female propodeum and gaster dorsal view; 4. *Callitula anguloclypea* Sureshan, female gaster dorsal view; 5. *Callitula heydoni* sp. nov. female antenna

Material examined : 1 Female, Sri Lanka : Monera gala, 2.5 km ne. Butala udugana, 10.xi.1993, M. Soderland.

Distribution : India, Myanmar, Sri Lanka (current study)

Remarks : Parasitoid of eggs of Pentatomid Heteroptera.

2. *Agiommatus paria* (Motschulsky) (Fig. 2)

1863. *Eulophus paria* Motschulsky. *Bull. Soc. Imp. Nat. Moscou.*, **36** : 63. (ZMMS) (Combination by Boucek, *et al* 1979)

1931. *Agiommatus acherontiae* Ferriere. *Bull. Ent. Res.*, **22** : 279-280. Syn. Boucek, *et al.* 1979.

Diagnostic characters : Length 2.3-2.5 mm. Head and thorax bright metallic greenish blue; gaster aeneous brown with two yellowish transverse stripes above; pronotum sharply angulate along its front margin; gaster oval, little longer than thorax, petiole 2x as long as broad.

Material examined : 1 Female, Sri Lanka : Moneragala, 2.5km ne. Butala udugana, 10.xi.1993, M. Soderland.

Distribution : India, Sri Lanka.

Remarks : Parasitoid of eggs of Spingid Moths (Lepidoptera).

3. *Anisopteromalus calandrae* (Howard) (Fig. 3)

1881. *Pteromalus calandrae* Howard. *Ann. Report U.S. Dept. Agr. for*, **1880** : 273. (USNM, presumably destroyed). (For further synonyms see Sureshan, 2003)

Diagnostic characters : Length : 2.1-3.1 mm. Head and thorax bluish black, gaster brownish black; head finely reticulate; POL 1.6x OOL; antennal scape not reaching median ocellus, pronotal collar with sharp edge; gaster elongate, ovate, T1 posteriorly produced.

Material examined : 1 Female, India. 916 m. Karnataka, Bangalore, 11-30.vii.1989, K.Ghorpade YPT; 1 Female, same data as above except 1-10. iii.1989.

Distribution : Cosmopolitan

Remarks : Cosmopolitan parasitoid of beetles associated with stored grains.

4. *Callitula anguloclypea* Sureshan (Fig. 4)

2002. *Callitula anguloclypea* Sureshan. *Rec. zool. Surv. India.*, **100**(1-2) : 25. (ZSIC)

Diagnostic characters : Length 1.2-1.7 mm. Head and thorax black, gaster brown with a yellow spot at base dorsally; anterior margin of clypeus produced; antennal scape reaching

very little above level of vertex, F1 little shorter than pedicel; pronotal collar distinctly margined; gaster as long as thorax, hind margin of T1 curved medially.

Material examined : 1 Female, Sri Lanka, Central Kandy District, Univ. Peradeniya, Hantana Mt. 7° 15' N, 80° 37' E, 10-14. Viii. 1999. M & J. Wasbauer MT.

Distribution : India, Sri Lanka (current study)

Remarks : This is the first record of the species from Sri Lanka and outside the type locality

5. *Callitula heydoni* sp. nov. (Figs. 5-7)

Female : Length 2.5 mm. Head and thorax dark metallic blue, gaster brown with yellowish brown dorsally up to end of T6 and also ventrally. Legs testaceous except hind coxae with a dark bluish patch on the basal half. Antennae brown except scape and pedicel testaceous; mandibles yellowish brown. Eyes cupreous. Tegulae and veins pale brown, wings hyaline.

Head : (Fig. 6) moderately reticulate. In dorsal view head width 1.9x length, POL sub equal to OOL (5 : 4.5); temple length 0.4x eye length; occipital line moderately curved, not carinate; eye length 1.3x width. Head in front view width 1.23x height, anterior margin of clypeus weakly emarginate, radiately striated, adjacent areas of mouth margin also striated, inner orbits slightly curving downwards beyond insertion of antennae; malar grooves distinct, malar space 0.4x eye length, face convex. Antennae (Fig. 5) inserted above middle of face, scape exceeding well above level of vertex, pedicel plus flagellum length 1.3x head width, scape slightly longer than eye, pedicel distinctly shorter than F1 (0.7x), three anelli, third slightly longer, F1 and F2 equal, F3-F4 slightly shorter, F5 shortest, clava sharply acuminate, slightly longer than two preceding segments combined, pubescence dense on funicle, each funicular segments with two irregular rows of long sensillae.

Thorax : (Fig. 6) Reticulate punctate, pronotal collar not margined anteriorly. Mesoscutum with notauli incomplete, width 2.3x length. Scutellum less convex, slightly longer than mesoscutum medially, frenum not indicated. Dorsellum shiny. Propodeum (Fig. 7) with nucha distinct, posterior margin deeply curved in, propodeum medially 1.45x as long as wide, no median carina, plicae indicated only anteriorly enclosing a deep fovea internally, spiracles large, oval, touching hind margin of metanotum. Prepectus finely reticulate with a deep fovea posteriorly. Mesopleuron moderately reticulate with a transverse groove on the upper half. Legs slender, hind tibia with one spur. Forewing length 2.5x width, marginal fringe small, pubescence less distinct, speculum open below, basal vein with few hairs, less distinct, basal cell with few scattered hairs. Relative lengths : MV 16, PMV 11, STV 5.

Gaster : (Fig. 7) Elongate, almost as long as head plus thorax combined. Petiole quadrate, reticulate, hind margin of tergites straight, in dorsal view length 2.5x width, hypopygium reaching hind margin of T3.

Holotype : Female, Sri Lanka, Central Kandy District, Univ. Peradeniya, Hantana Mt. 7° 15' N, 80° 37' E, 10-14. Viii.1999. M&J. Wasbauer MT (in Bohart Museum of Entomology, University of California, Davis, USA).

Etymology : Named after Dr. Steven. L. Heydon, University of California, Davis.

Remarks : This species resembles *C. keralensis* Sureshan in general morphology but differs from it in having clypeus with anterior margin slightly emarginate, gaster brown with yellowish brown dorsally and ventrally, fore and hind coxae not concolorous with thorax but testaceous except a metallic blue patch on dorsal part of hind coxa, scape slightly longer than eye, exceeding well above level of vertex, gaster with hind margin of T1-T3 not produced. (in *keralensis* anterior margin of clypeus roundly produced, gaster almost black with metallic blue reflection on T1 dorsally, fore and hind coxae concolorous with thorax, scape little shorter than eye, exceeding level of vertex, gaster with hind margin of T1-T3 slightly produced).

6. *Callitula peethapada* Narendran & Mohana (Fig. 8)

2001. *Callitula peethapada* Narendran & Mohana. *Uttar Pradesh J. Zool.*, 21(1) : 31. (ZSIC).

Diagnostic characters : Length 1.4-2.1 mm. Head and thorax metallic green with bronzy reflection dorsally; gaster brown with a broad yellowish spot dorsally at base; head 1.4x as wide as thorax, POL 1.6x OOL; anterior margin of clypeus shallowly emarginate, antennal scape reaching well beyond level of vertex, terminal stylus of clava long; pronotal collar anteriorly margined, gaster elongate, ovate, 0.84x as long as head plus thorax combined.

Material examined : 1 Female, Sri Lanka, Bedulla, 5 km e Wellimada, 9.xi.1993, M. Saderlund ss.

Distribution : India, Sri Lanka (current study)

Remarks : The species is reported here for the first time from Sri Lanka and outside the type locality.

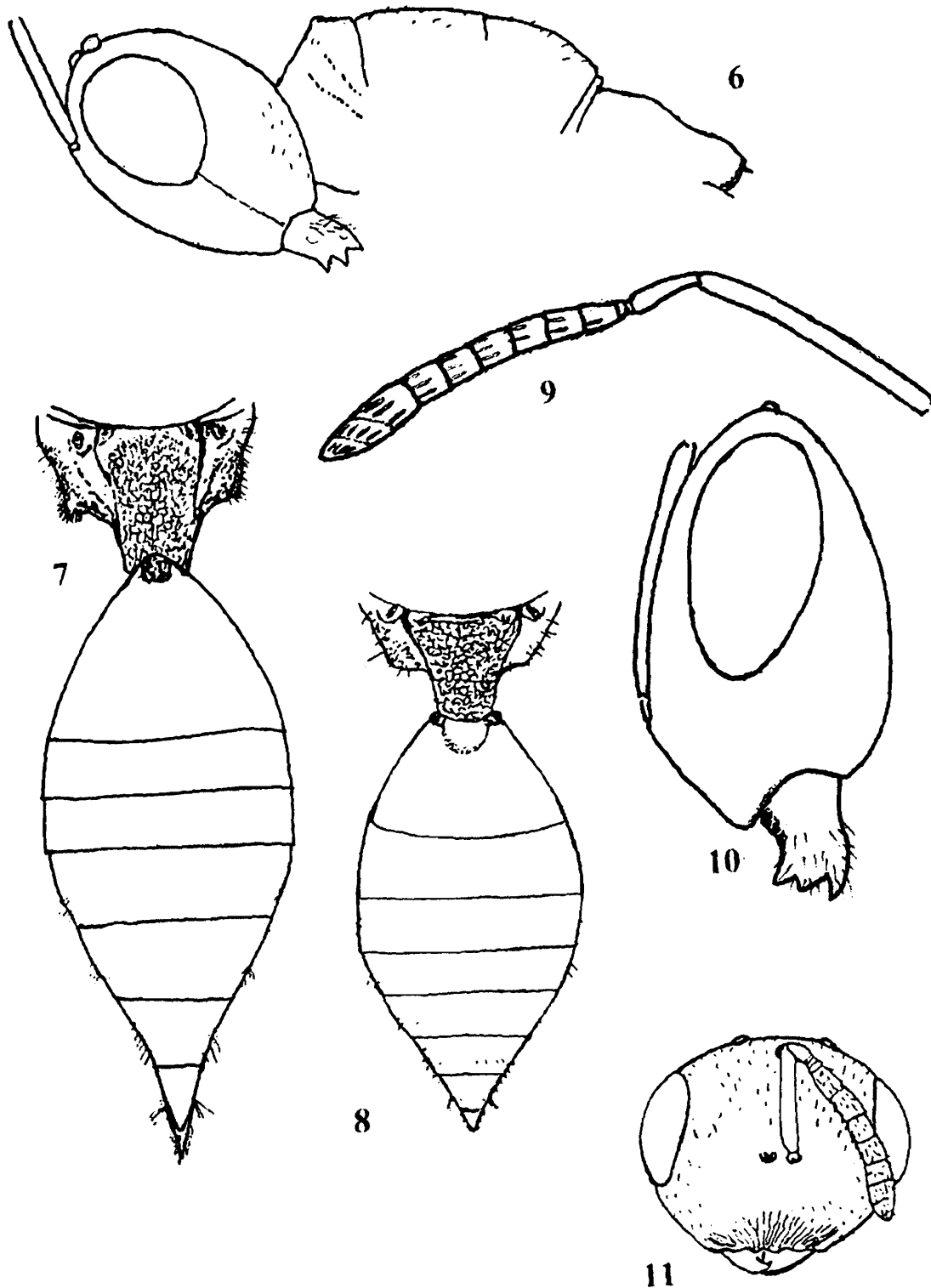
7. *Callitula* sp.

Material examined : 4 males, Sri Lanka, Moneragala e Passara, Badalkoboru, 9-xi.1993, M.Soderlund.

Remarks : Specimens are kept unidentified, since females not examined.

8. *Coelopisthia lankana* Sureshan (Figs. 9-10)

2006a. *Coelopisthia lankana* Sureshan. *Zoos'print journal*, 21(3) : 2187-2188. (UCDC).



Figs. 6-7. *Callitula heydoni* sp. nov. female : 6. head and thorax in profile; 7. propodeum and gaster dorsal view; 8. *Callitula peethapada* Narendran & Mohana, female propodeum and gaster dorsal view; 9-10. *Coelopisthia lankana* Sureshan, female : 9. antenna, 10. head in profile; 11. *Dinarmus acutus* (Thomson) female head in front view.

Diagnostic characters : Length 2.4 mm. Head and thorax dark metallic bluish green, almost black on head, gaster dark brown. Head in profile with face receding below toruli and forming an angle of about 130° with the frons; anterior margin of clypeus with two teeth; antennae with pedicel plus flagellum 0.9x head width, first anellus small, F1 elongate; propodeum with median area 1.8x as broad as long; gaster with hind margin of T1 produced.

Material examined : 1 Female (Holotype) Sri Lanka, Rantembe Sanctuary, Viet, Randenigala, Kandy dist., Central province 07° 13' N 080° 57' E, 23-30.viii.1999, coll. M.T.M & J. Washbauer

Distribution : Sri Lanka.

Remarks : Sureshan (2006a) reported the genus for the first time from Oriental region.

9. *Dinarmus acutus* (Thomson) (Fig. 11)

1847. *Pteromalus robustus* Walker. 230. Syn. Graham, 1969 (nec. Walker, 18350) (HDEO)

1878. *Dinarmus (Dinramus) acutus* Thomson. *Hym. Scand.*, 5 : 56. (For other synonymy see Rasplus, 1989).

Diagnostic characters : Length 2.1-3.3 mm. Dark metallic blue; anterior margin of clypeus with two small teeth; antennae with third anellus not longer than second; propodeum with nucha long; fore wing with PMV as long as MV; gaster short, 0.7x as long as head plus thorax combined.

Material examined : 1 Female : India, 916 m. Karnataka, Bangalore, 21-30.iv.1989, K. Ghorpade MT; 1 Male, 2 Female, same data as above except 11-20.v.1989; 1 Male, Sri Lanka : Central province, Kandy dist. Viet.Randenigala, Ratembe Sanct. Mahaweale. R.N 07° 12' E 080° 57', 25-29-viii.1999 (Malaise trap), M & J.Washbauer.

Distribution : India, Sri Lanka (current study), Europe.

Remarks : Parasitoid of Bruchid beetles, being recorded for the first time from Sri Lanka.

10. *Dinarmus basalis* (Rondani) (Fig. 32)

1877. *Entedon basalis* Rondani. *Boll. Soc. Ent. Ital.*, 9 : 174. (USNM) (Combination by Boucek, 1974). (For other synonymy see Rasplus, 1989).

Diagnostic characters : Length : 2.2-2.7 mm. Dark green with brassy reflection; anterior margin of clypeus slightly produced, shallowly emarginate; POL 1.3x OOL; antennae with scape hardly reaching median ocellus, third anellus longest, forewing with PMV longer than MV; gaster ovate, dorsally flat.

Material examined : 2 Female, 3 Male, India 916 m. Karnataka, Bangalore, 21-30.iv.1989, K. Ghorpade MT; 2 Female, Sri Lanka, Moneragala, 25 km ne Buttala, Udugana, 10.xi.1993. M. Soderlund.

Distribution : India, Pakistan, Sri Lanka (current study)

Remarks : Parasitoid of Bruchid beetles, recorded here for the first time from Sri Lanka.

11. *Dipara intermedia* Sureshan & Narendran (Fig. 12-13)

2005c. *Dipara intermedia* Sureshan & Narendran. *Rec. zool. Surv. India.*, **105**(1-2) : 105-109. (UCDC).

Diagnostic characters : Length 2.5 mm. Yellowish brown; clypeus little raised, anterior margin straight; OOL almost as long as POL; vertex with 3 pairs of setae; antennae with pedicel plus flagellum 1.62x as long as head width; pronotal collar with fine carina, anterior part of mesoscutum with a semicircular smooth yellow area, mesoscutum with 2 pairs of long setae, scutellum with 2 pairs of short setae, propodeum shiny, plicae incomplete, median carina weakly indicated. Forewing stump very short. Gaster elongated, smooth, 2x as long as thorax, petiole 1.2x as long as wide with two fine backwardly directed hairs on each side basally.

Material examined : 1 Female, Sri Lanka: Central province, Kandy dist., Hantana Mt. N 7° 15' E 80° 37', 10-14.vii.1999 (in pan trap), coll. M & J. Washbauer.

Distribution : Sri Lanka.

Remarks : This is the first described species of *Dipara* from Sri Lanka. Boucek et al (1979) also reported an undetermined species of *Dipara* from Sri Lanka.

12. *Dipara* sp.

Material examined : 1 Male, Sri Lanka, Central province, Kandy dist. Hantana Mt. N 07° 015' E 08° 037', 10-14.viii.1999. Pan trap, M & J Washbauer.

Remarks : The specimen couldn't be identified since it is badly damaged, probably the male of *D.intermedia* Sureshan & Narendran.

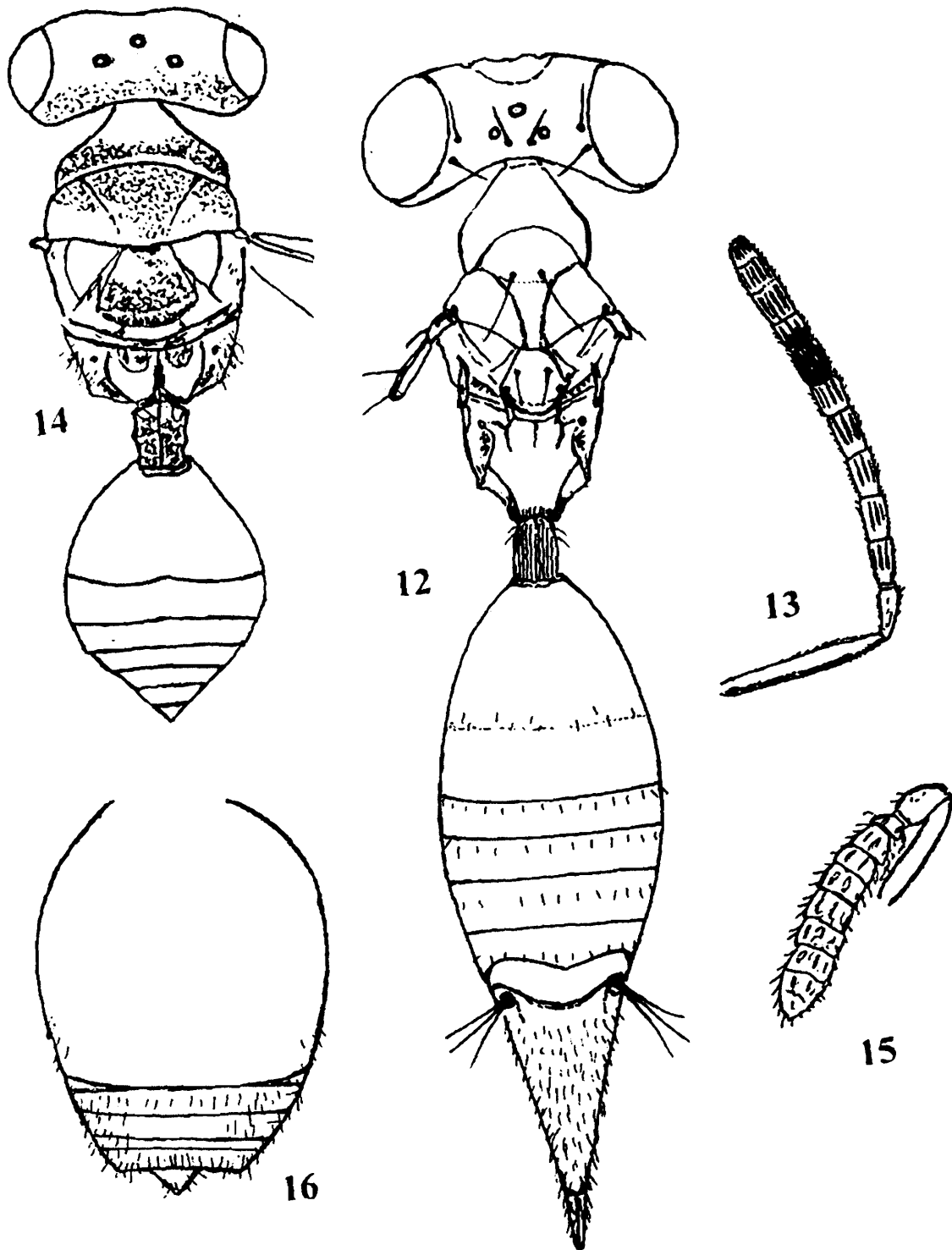
13. *Gastrancistrus* sp.

Material examined : 1 Male, Sri Lanka, Central province, Kandy Dist. Vict. Randenigala, Rantembe Sanct. Mahawele R. N 07° 12' E 080° 57', 25-29.viii.1999, Malaise trap. M & J Wasbauer.

Remarks : Since the specimen is a male the species couldn't be confirmed. This is the first record of the genus from Sri Lanka.

14. *Grahamisia gastra* Sureshan & Narendran (Fig. 67)

2004b. *Grahamisia gastra* Sureshan & Narendran. *Zoos'print Journal*, **19**(9) : 1616-1618. (UCDC).



Figs. 12-13. *Dipara intermedia* Sureshan & Narendran, female : 12. body dorsal view, 13. antenna; 14. *Halticoptera propinqua* (Wasterston) female, body dorsal view; 15-16. *Herbertia indica* Burks female : 15. antenna, 16. gaster dorsal view.

Diagnostic characters : Length 1.8-1.9 mm. Body brownish yellow with two brown bands on face; gaster with an yellow transverse band covering hind part of T1 and base of T2; antennae with pedicel plus flagellum 1.4x as long as head width; propodeum without median carina and plicae united in the form of 'V' above nucha; F6 partly whitish yellow as on clava; forewing stump with 4 setae.

Material examined : 1 Female : Sri Lanka : Central Province, Kandy Dist., Hantana Mount. 07°15' N & 80° 37' E, coll. M & J Washbauer (in pan trap).

Distribution : Sri Lanka.

Remarks : This is the first described species of *Grahamisia* from Sri Lanka. Boucek et al (1979) also reported an undetermined species from Sri Lanka.

15. *Halticoptera propinqua* (Waterston) (Fig. 14)

1915 : *Polycystus propinquus* Waterston, *Ceylon. Bull. Ent. Res.*, 5 : 325. (Combination by Boucek et al. 1979.) (BMNH).

Diagnostic characters : Length : 1.3-1.6 mm. Head, thorax and petiole metallic bluish green, gaster brown. Head about 1.3x as broad as thorax; POL 1.4x OOL; antennae with pedicel plus flagellum 0.9x head width; propodeum shiny with median carina, plicae complete; gaster petiole reticulate, hind margin of T1 and T2 slightly incised in the middle.

Material examined : 1 Female : Sri Lanka : Central Kandy Dist. Katalu oya Estate base of Kandasami Male 7° 24' N 80° 07' E, 1- ix.1999, ypt. M & J Wasbauer; 2 Female, data same as above.

Distribution : India, Sri Lanka, Pakistan.

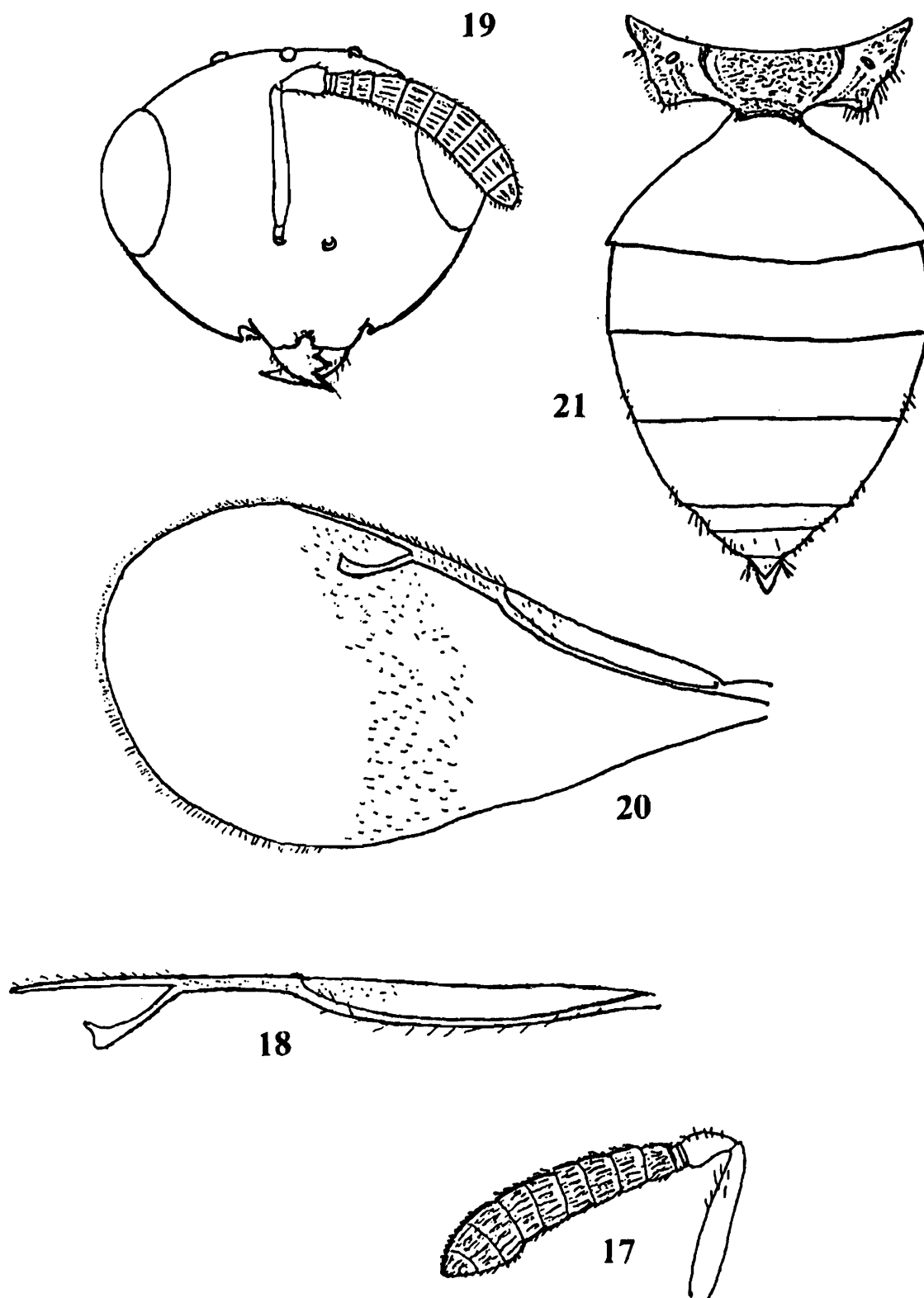
Remarks : The species is originally described from Sri Lanka

16. *Herbertia indica* Burks (Figs. 15-16)

1959 : *Herbertia indica* Burks, *Proc. Ent. Soc. Wash.*, 61(6) : 252. (USNM)

Diagnostic characters : Length 1.1-1.5 mm. Black, metallic violaceous reflection on face and gaster dorsally; legs whitish except coxae, trochanter and femora bluish black; head and thorax granulate reticulate; antennae inserted on lower face, scape not reaching middle of face, extending 0.75x eye height, F1 shorter than pedicel, clava as long as three preceding segments combined; forewing with MV slightly greater than 2x as long as PMV; gaster broad and short, T1 covering most of the gaster.

Material examined : 1 Female : India, 916M. Karnataka, Bangalore, 21-30.iii.1987, coll. Ghorpade, M.T.



Figs. 17-18. *Inkaka keralensis* Sureshan & Narendran female : 17. antenna, 18. forewing venation; **19-21.** *Inkaka* sp. Female : 19. head in front view, 20. forewing, 21. propodeum and gaster dorsal view.

Distribution : India, Sri Lanka, Malaysia.

Remarks : Parasitoid of leaf mining dipterous larvae

17. *Homoporus* sp.

Material examined : 1 Male, Sri Lanka : Kalutara, 4 km ne Badurelia, 8.iv.1993, M. Soderlund ss.

Remarks : This is the first record of the genus from Sri Lanka. The species identity couldn't be confirmed since female specimens not examined.

18. *Inkaka keralensis* Sureshan & Narendran (Figs. 17-18)

1997. *Inkaka keralensis* Sureshan & Narendran. *Hexapoda*, 9(1&2) : 30. (ZSIC)

Diagnostic characters : Length 1.4-1.6 mm. Head and thorax black, gaster brownish black with blue reflection dorsally on T1; POL 1.7x OOL; antennae with funicular segments wider than long, clava little longer than three preceding segments combined; mesoscutum coarsely reticulate, notauli not traceable; gaster ovate, length 1.9x that of hind tibia.

Material examined : 13 Female, India : Karnataka, 916m. Bangalore, 21-30.iii.1987, Ghorpade. M.T.

Distribution : India.

Remarks : This is the first record of the species outside the type locality in India

19. *Inkaka* sp. (Figs. 19-21)

Female : Length : 1.5 mm. Black, gaster dark brown, ventral part paler; antennae testaceous; tegulae brown, wings hyaline, veins pale brown.

Head : (Fig. 19) Distinctly engraved reticulate, in dorsal view 2x as broad as long, temple narrow, 0.3x as long as eye length; POL 1.3x OOL; eye 1.3x as long as broad (in profile). In front view head 1.2 x as broad as high, malar space 0.77x as long as eye, posterior margin of genae sharp, not carinate. Antennae inserted on lower ocular line, distinctly clavate, pedicel plus flagellum 0.77x as long as head width, scape not reaching front ocellus, 0.8x as long as eye, funicular segments transverse with one row of sensillae; pedicel distinctly longer than F1.

Thorax : Highly convex, pronotum almost shiny, collar not visible from above. Mesoscutum 2x as broad as long, distinctly reticulate, notauli incomplete. Scutellum with distinct frenal groove, slightly shorter than median length of mesoscutum. Propodeum (Fig. 21) finely reticulate medially, lateral areas almost shiny, plicae complete, spiracles oval, post spiracular sulcus not distinct, callus with pubescence less dense, propodeum medially 0.6x as long as

scutellum. Mesopleuron shiny except a triangular area beneath wings. Metapleuron shiny. Forewing (Fig. 20) 2.1x as long as wide, discal pubescence less distinct, marginal fringe present, basal part of wing almost bare. Relative lengths : SMV 23, MV 7, PMV 7, STV 5.

Gaster : (Fig. 21) 1.5x as long as broad, 0.9x as long as head plus thorax, hypopygium reaching end of T5.

Holotype : Female : Sri Lanka : Central Candy dist. Kataleru Oya Estate, base of Kandasami Male, 07° 24' N 80° 07' E, i-ix.1999, Ypt. M & J Washbauer (in Bohart Museum of Entomology, University of California, Davis, USA)

Remarks : This species readily resembles *I. keralensis* Sureshan & Narendran but differs from it in having different colour, body sculpture, antennae with funicular segments highly transverse, forewing with MV thicker, gaster 1.5x as long as broad in dorsal view and T4 longer than T3 (in *keralensis* gaster 1.3x as long as broad, T4 very short, funicular segments less transverse, forewing with MV less thick). The specimen is kept unnamed for want of further material for study.

20. *Kumarella angulus* Sureshan (Fig. 22)

1999. *Kumarella angulus* Sureshan. *Oriental Ins.*, **32** : 100-101. (ZSIC)

Diagnostic characters : Length 3.9-4 mm. Head and thorax dark metallic blue, gaster brown; POL 0.7x OOL; antennal toruli above lower margin of eyes, third anellus little longer, pedicel as long as F2; propodeum with median area in the form of four depressed areas; gaster 1.3x as long as head plus thorax.

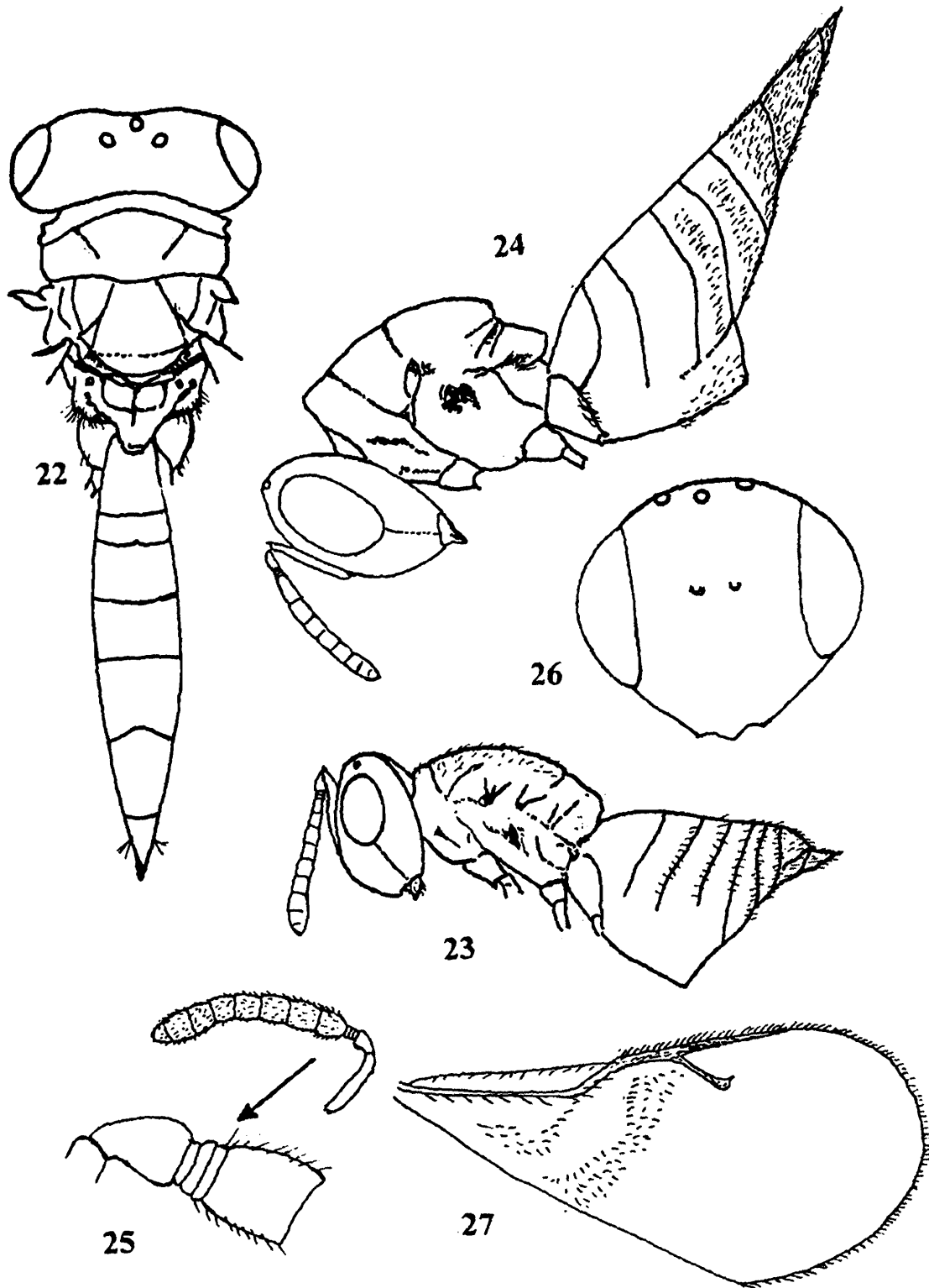
Material examined : 1 male : Laos : Vietnam prov., Ban van Eue, 30.iii.1967, Native coll. Bishop Museum; 1 female : Malaysia : Sclangor Botanical garden, Unveriti Malaya, Kuala Lumpur, 29.ii.1996, S.L. Heydon; 2 female, Vietnam : Dalat, 6 kms, 1400-1500 mt. 9.vi.-7.vii.1961. coll. N.R. Soences; 1 female, Dalat, 1500 mt. 29.iv.-4.v.1960, coll. L.W. Quate; 1 Female, Taiwan : Wishe, 1150 mt. 7.v.1983. coll. Henry Townes; 1 male, Thailand, Chiangdao, 5-11.iv.1958. Native coll. Bishop Museum.

Distribution : India, Vietnam, Malaysia, Taiwan, Thailand.

Remarks : Sureshan (2004) reported further extension of the distribution of this species in Southeast Asia.

21. *Lariophagus distinguendus* (Forster) (Fig. 23)

1841 : *Pteromalus distinguendus* Forster. *Beitrag Zur Monogr. Pterom. Nees.*, **1** : 17. (NMV) (type presumably lost) (combination by Gahan, 1921)



Figs. 22. *Kumarella angulus* Sureshan, female, body dorsal view; **23.** *Lariophagus distinguendus* (Forster) female, body in profile; **24.** *Oniticellobia longigastra* Sureshan & Narendran female, body in profile; **25-27.** *Oricoruna arcotensis* (Mani & Kurian) female : **25.** antenna, **26.** head front view, **27.** forewing.

Diagnostic characters : Length 2.1-3.1 mm. Head and thorax bluish black, gaster black; head finely reticulate, densely pubescent; face swollen, clypeus narrowly emarginate; antennae with pedicel plus flagellum almost equal to width of head, flagellum proximally not stouter than pedicel; apical margin of forewing without cilia: gaster dorsally convex.

Material examined : 1 Female, Sri Lanka : Central Kandy dist. Univ. Paradeniya Hantana Mt. 7° 15' N 80° 37' E, 10-14. viii.1999, M & J. Wasbauer Mt.

Distribution : Cosmopolitan.

Remarks : Though a widely distributed parasitoid of beetles in stored grain, being reported for the first time from Sri Lanka.

22. *Lyubana longigastra* Sureshan (Figs. 73-76.)

2007. *Lyubana longigastra* Sureshan *Rec. zool. Surv. India*, 107 (Part-3) : 2 (UCDC)

Diagnostic characters : Length 2.4 mm. Head and thorax dark metallic blue; gaster blackish brown with metallic blue reflection on basal part, mainly on T1 dorsally; head and thorax with extensive but short and subdecumbant pilosity; POL : OOL 5.5 : 2.5; clypeus anteriorly with two sharp teeth; both mandibles with 4 teeth. Antennae inserted below middle of face, formula 11353. Propodeum medially almost half as long as scutellum, median carina slightly indicated in the anterior ends which end with some weak transversely striated reticulation in the nuchal area, few short rugae on either sides of median carina anteriorly; adpetiolar area less shiny. Forewing (Fig.98) not densely pilose with speculum open below, basal hairline indicated. Gaster with hind margin of T1 slightly and arcuately produced, T2 slightly produced.

Material examined : 1 Female (Holotype) : Sri Lanka : Central Province, Kandy dist., Vict. Randenigala. Rantembne Sanct. Mahawele R. N 07° 12' E 080° 57', 25-29, viii. 1999. Malaise trap. M & J Washauer.

23. *Lyubana* sp.

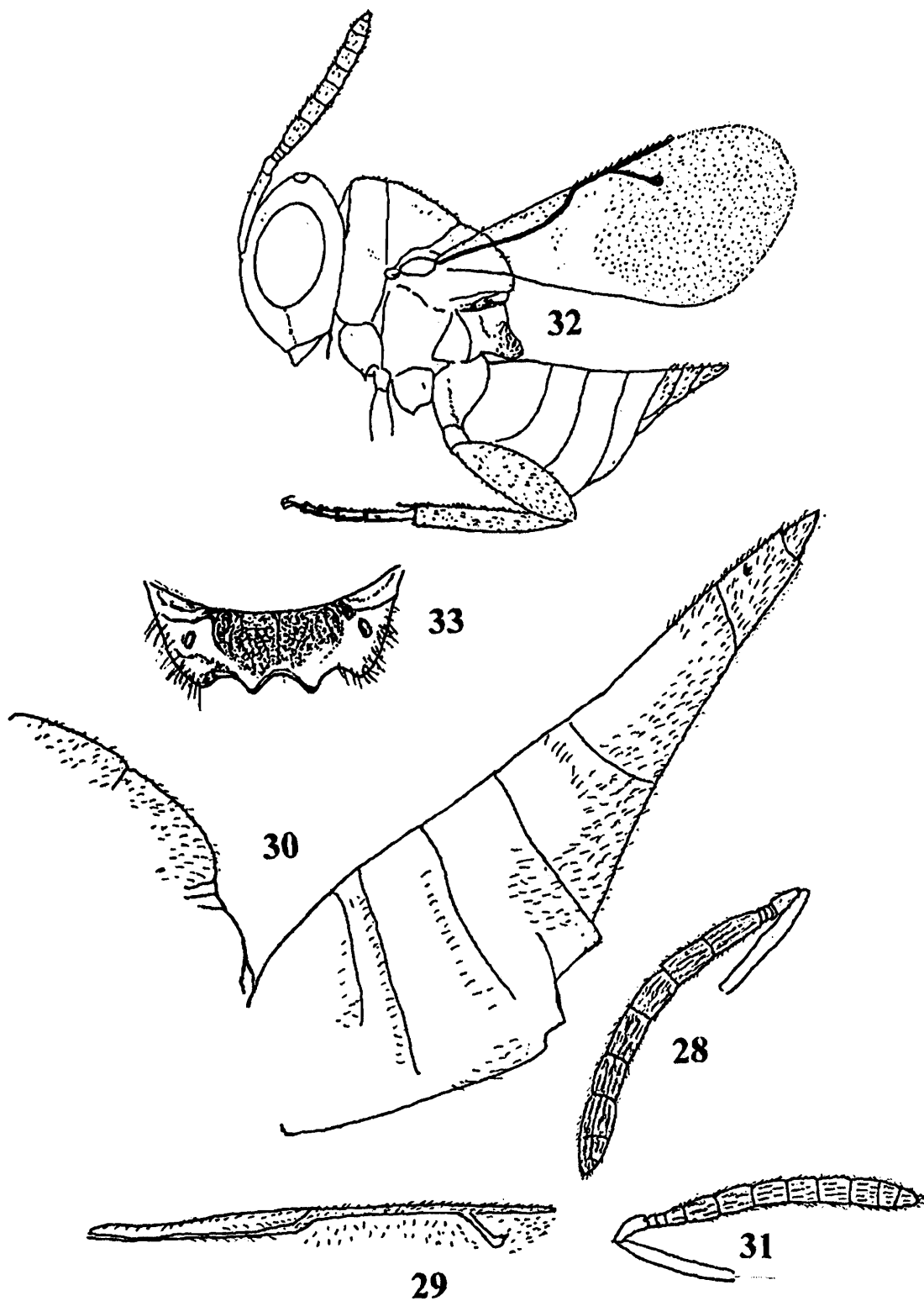
Material examined : 1 male, Sri Lanka. Kalutara, 4 km ne. Badurlia. 8.iv.1993. M. Soderlund ss.

Remarks : The specimen kept unidentified since female specimens are not available for study.

24. *Macroglenes* sp.

Material examined : 2 Male, India, 916m Karnataka : Bangalore, 21-30.iv.1989. K. Ghorpade MT.

Remarks : One species of *Macroglenes* viz. *M. sivani* Narendran & Sureshan is known from India. The specimens are kept unidentified since it is difficult to ascertain the species identity from male specimens only.



Figs. 28-31. *Oxysychus lankaensis* sp.nov. female : 28. antenna, 29. forewing venation, 30. thorax and gaster in profile; 31. male antenna. 32. *Dinarmus basalis* (Rondani), female body in profile; 33. *Mokrzeckia menzeli* Subba Rao, female, propodeum dorsal view.

25. *Merismomorpha* sp.

Material examined : 1 Male : Sri Lanka, Galle 1.5 m ne Ben tota, 13.iv.1993, M. Soderlund s.s.

Remarks : This forms the first record of the genus from Sri Lanka. The specimen kept unnamed for want of female material.

26. *Mesopolobus* sp.

Material examined : 3 male, Sri Lanka, Kalutara, 4 km ne. Badurelia 8.iv.1993, M. Soderlund ss., 1 Male (only head and thorax).

Remarks : Though the specimens closely resemble *M. Keralensis* Sureshan & Narendran in general morphology they are kept unidentified since the species identification is not possible until female specimens are compared.

27. *Metastenus concinnus* Walker (Figs. 34-35)

1834. *Metastenus concinnus* Walker. *Ent. Mag.*, 2 : 302. (BMNH)

Diagnostic characters : Length : 1.5 mm. Brownish black; anterior margin of clypeus shallowly emarginate, POL little longer than OOL; posterior margin of gena sharp, antennae inserted centre of face, with pedicel longer than F1; pronotal collar carinate, scutellum with frenum marked; propodeum with nucha moderate, coarsely reticulate, plicae sharp and complete; gaster as long as head plus thorax combined.

Material examined : 1 Female, India 916 m. Karnataka, Bangalore, 11-30.xi.1988, K. Ghorpade MT; 2 Male, same data as above except 21-30.iv.1989, 15 Female, same data as above.

Distribution : India, Europe.

Remarks : This forms the further report of the species from India after Sureshan (2003).

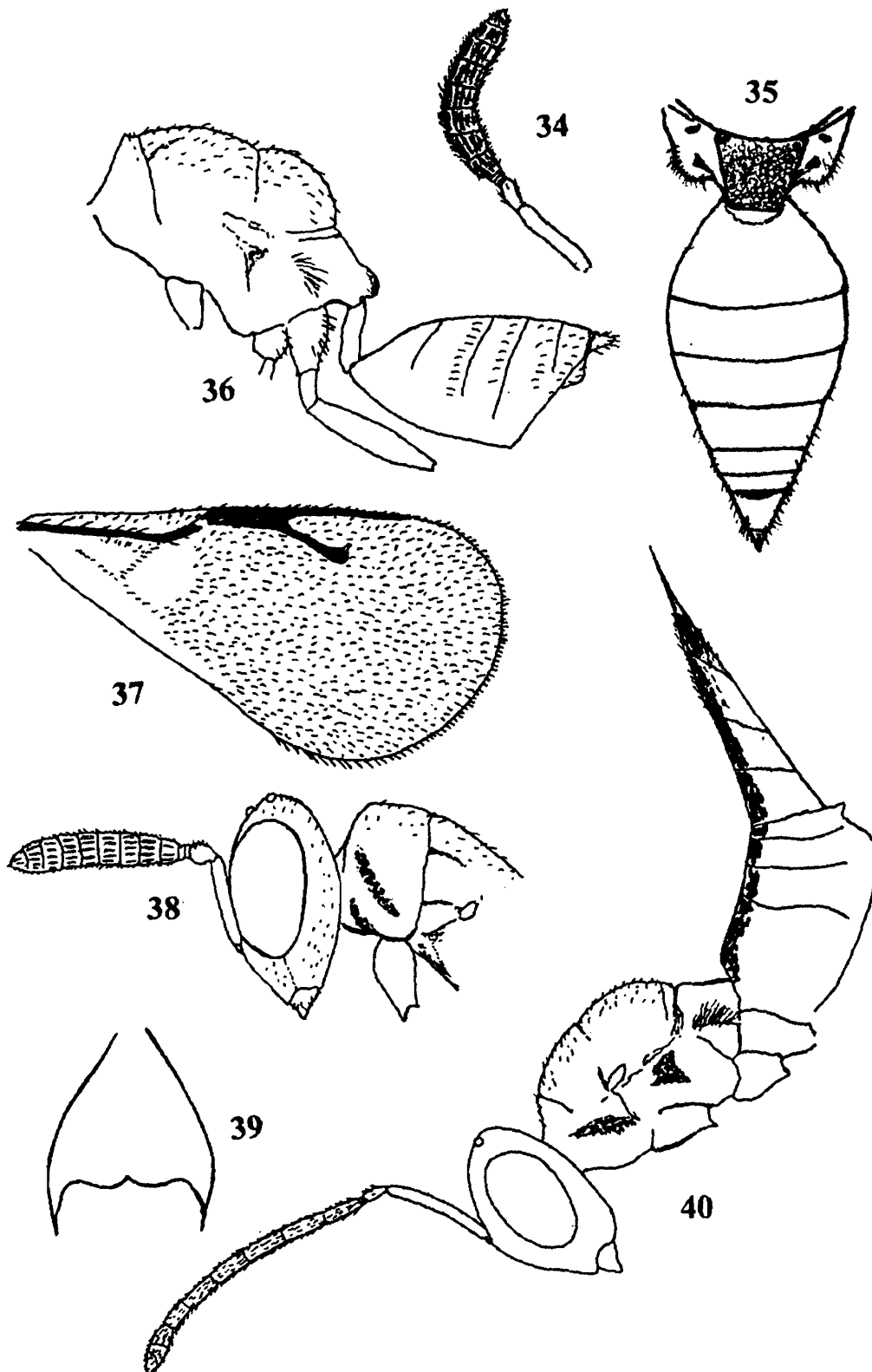
28. *Mokrzeckia menzeli* Subba Rao (Fig. 33)

1973. *Mokrzeckia indica* Subba Rao. *Oriental Ins.*, 7 : 358. (ex parte) (Subba Rao, 1981) (BMNH)

1981. *Mokrzeckia menzeli* Subba Rao. *Proc. Ind. Acad. Sci., (Anim. Sci.)* 90 : 479. (BMNH)

Diagnostic characters : Length : 2.4-2.6 mm. Head and thorax bright metallic green; gaster dark brown with metallic tinge on sides; clypeus with anterior margin deeply incised; antennae inserted in middle of face; POL shorter than OOL; pronotal collar carinate; gaster ovate-lanceolate, ovipositor exerted.

Material examined : 7 Female, India : 916 m. Karnataka : Bangalore, 11-30.xi.1988, Ghorpade MT.



Figs. 34-35. *Metastenus concinnus* Walker, female : 34. antenna, 35. propodeum and gaster dorsal view; 36-37. *Pachyneuron solitarium* (Hartig), female : 36. body (without head) in profile; 38-39. *Syntomopus carinatus* Sureshan. Female : 38. head and thorax (part) in profile; 39. gaster (T1) dorsal view. 40. *Propicroscytus oryzae* (Subba Rao) female, body in profile.

Distribution : India

Remarks : The species was previously known from Kerala and Uttar Pradesh, reported here for the first time from Karnataka.

29. *Neolyubana noyesi* Sureshan (Figs. 48-50)

2006b. *Neolyubana noyesi* Sureshan. *Rec. zool. Surv. India*, : 106(1-2) (UCDC)

Diagnostic characters : Length 2.5 mm. Head and thorax dark metallic blue, gaster brown with metallic blue reflection; antennae pale brown except scape and pedicel testaceous; head and thorax with extensive short pilosity, head finely reticulate, gena almost shiny, right mandible with four and left with three teeth, POL 1.8x OOL, antennae with 3 anelli and 5 funicular segments, pedicel longer than F1, clava with sutures oblique, micropilosity strip extending upto base of second claval segment. Thorax moderate reticulate, pronotum 0.87x as wide as mesoscutum, propodeum with nucha distinct, callus convex, ending in a blunt conical projection. Gaster little longer than head and thorax combined, hind margin of T2 and T3 subangulate, hind margin of T2-T4 with median indentation.

Material examined : 1 Female (Holotype) Sri Lanka : Central Province, Kandy Dist. Vict. Randenigala Rantembe Sanctuary, N 07° 13' E 08° 057', 23-30.viii.1999, coll. MT. M & J. Washbauer

Distribution : Sri Lanka.

Remarks : This is a monotypic genus of subfamily Pteromalinae known only from Sri Lanka having close affinity with *Lyubana* Boucek

30. *Norbanus acuminatus* Dut & Ferriere (Fig. 41)

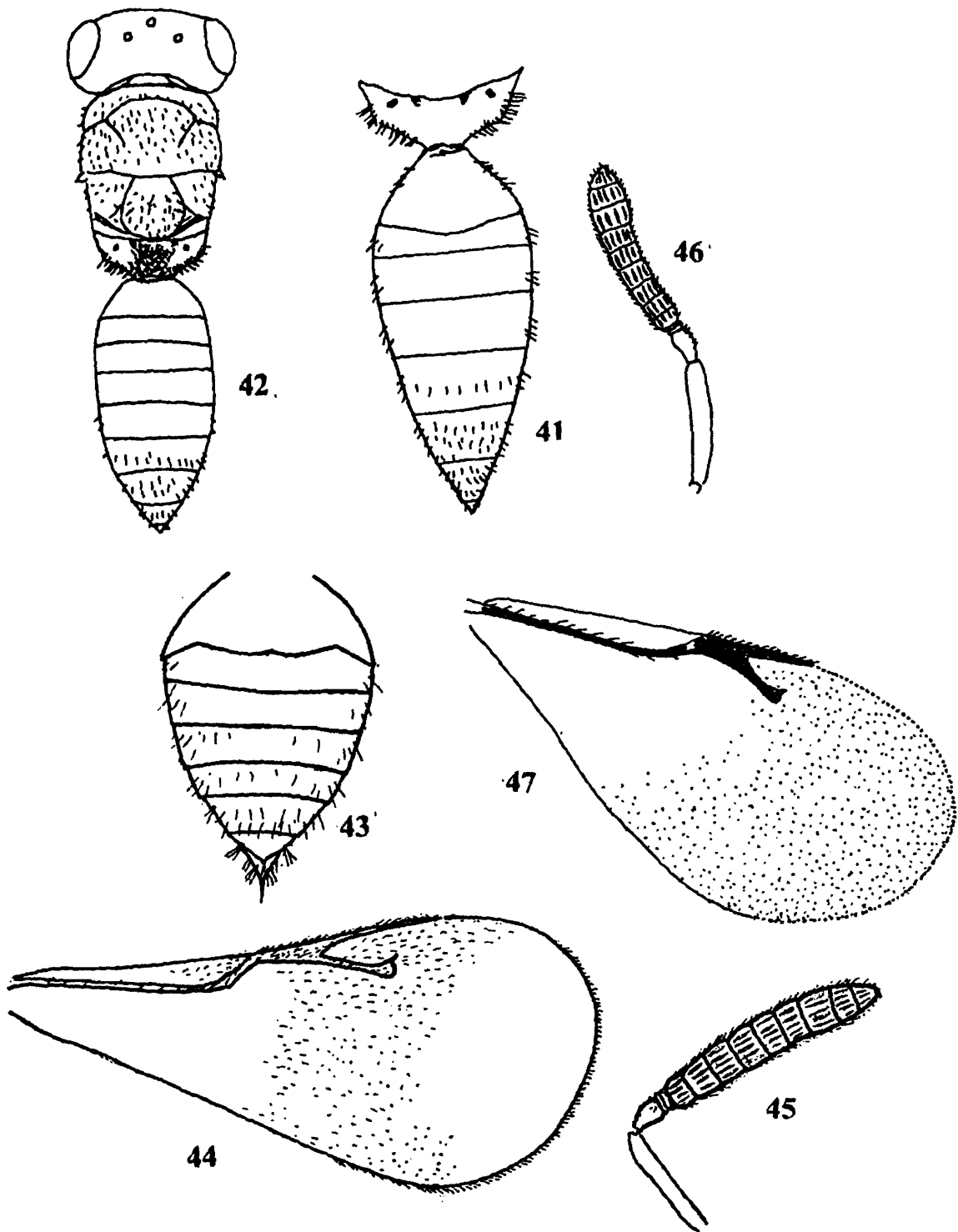
1961. *Norbanus acuminatus* Dutt & Ferriere. *Ind. Jr. Agric. Sci.*, 31 : 141. (ZSI)

Diagnostic characters : Length 2.5-5 mm. Head and thorax bluish black, gaster brown with coppery shine; POL almost as long as OOL; antennae with second anellus twice as long as first, clava almost as long as two preceding segments combined; forewing with discal pubescence small; gaster elongate, 1.2x as long as head plus thorax combined.

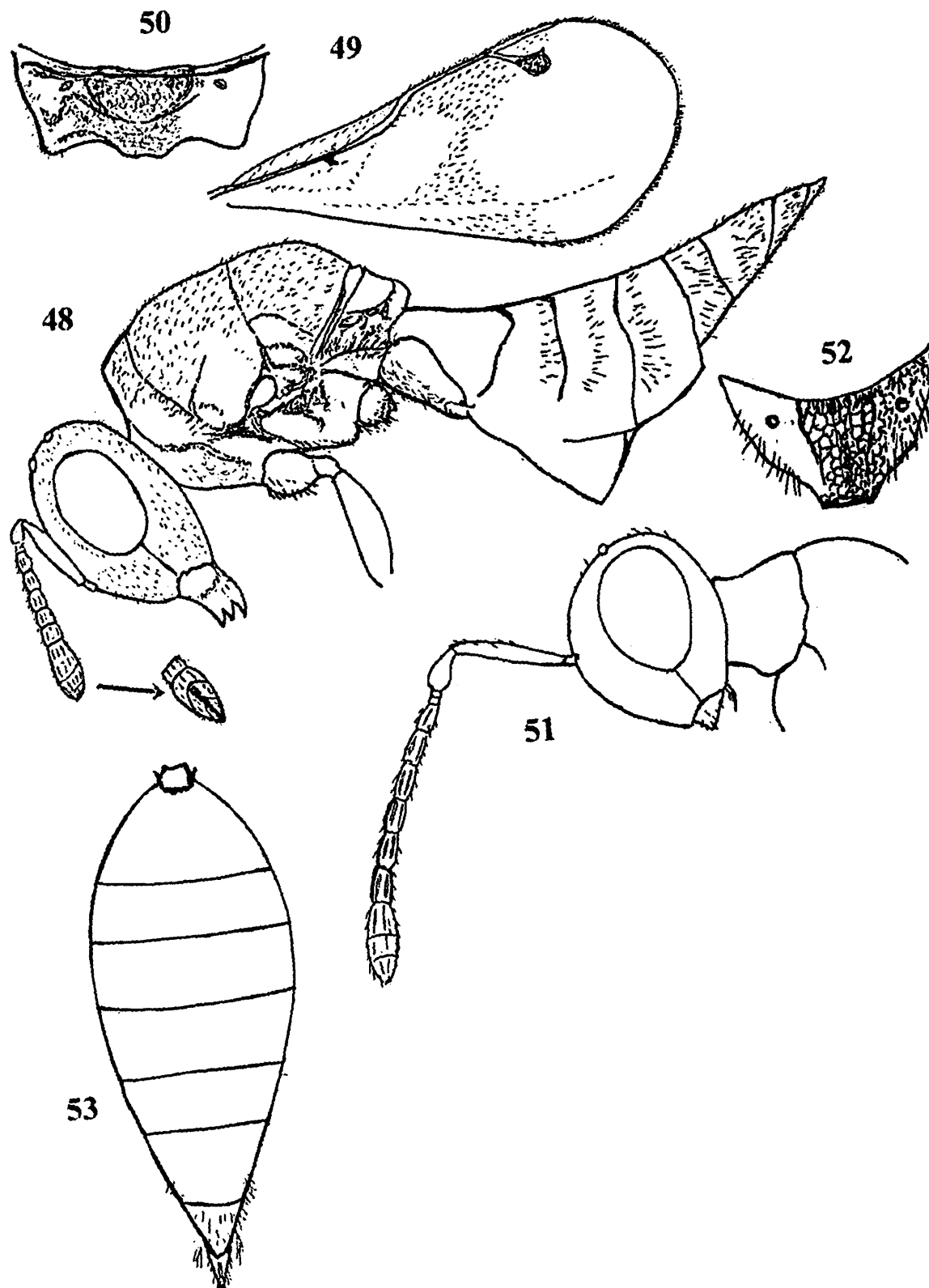
Material examined : 1 Female, India : 916 m. Karnataka : Bangalore, 21-30.iii.1987. coll. Ghorpade MT.

Distribution : India.

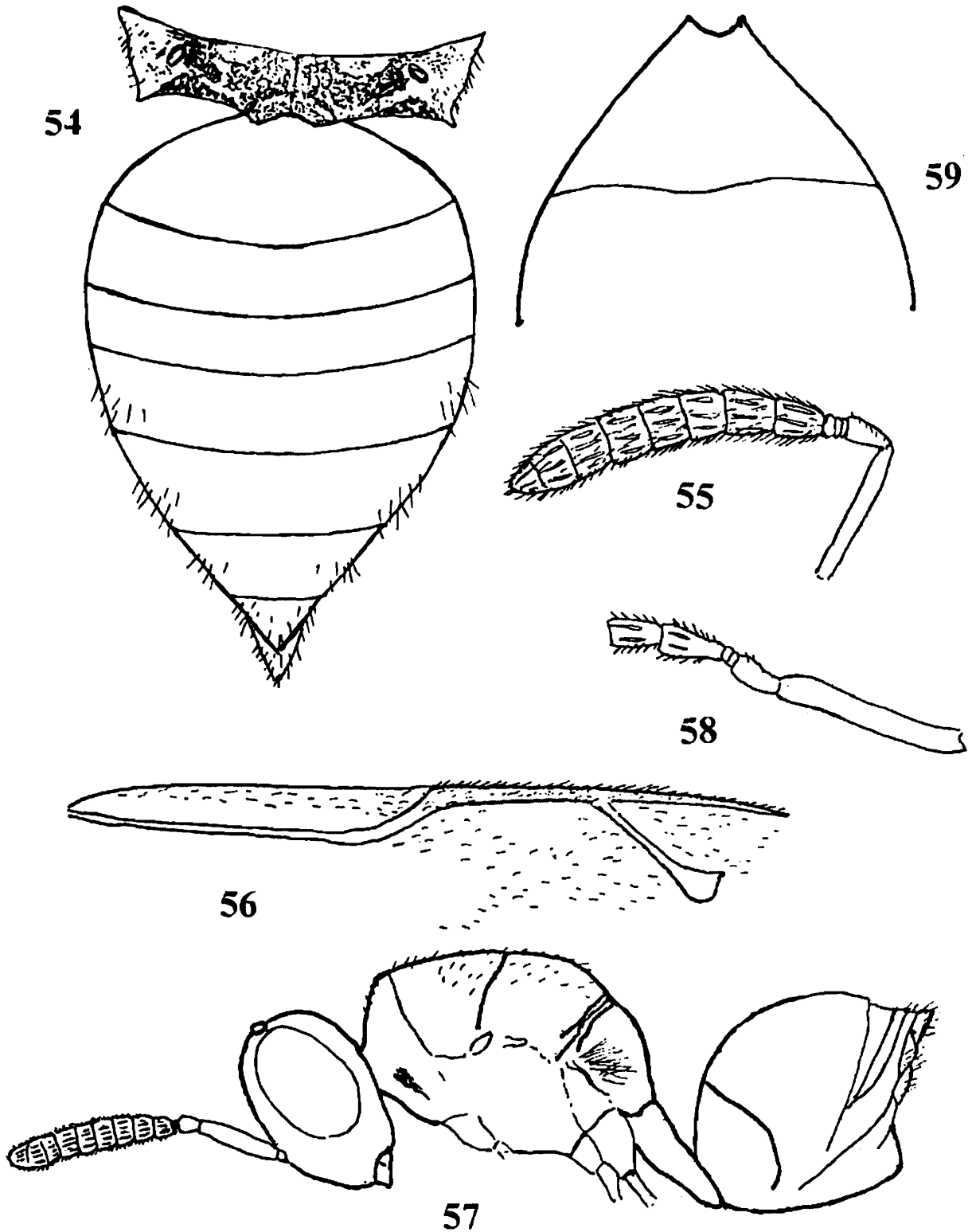
Remarks : This forms the first record of the species from Karnataka. The species was known earlier from Kerala and West Bengal.



Figs. 41. *Norbanus acuminatus* (Dut & Ferriere) female propodeum and gaster dorsal view; 42. *Norbanus thekkadiensis* Sureshan, female body dorsal view; 43-45. *Pachyneuron bangalorensis* sp. nov. female : 43. gaster dorsal view 44. forewing, 45. antenna. 46-47. *Pachyneuron aeneum* Masi, female : 46. antenna 47. forewing.



Figs. 48-50. *Neolyubana noyesi* Sureshan. Female : 48. body in profile, 49. forewing, 50. propodeum dorsal view.
51-53. *Panstenon lankaensis* sp. nov. female 51. head in profile, 52. propodeum dorsal view, 53. gaster dorsal view.



Figs. 54-56. *Pseudocatolaccus bouceki* sp. nov. female : 54. propodeum and gaster dorsal view; 55. antenna, 56. forewing venation. 57. *Sphegigaster stepicola* Boucek, female, body in profile; 58-59. *Sphegigaster brunneicornis* (Ferriere) female : 58. antenna (basal part); 59. gaster (T1) dorsal view.

31. *Norbanus equus* Sureshan (Figs. 63-64)

2003. *Norbanus equus* Sureshan. *Rec. zool. Surv. India, Occ. Paper No.*, 205 : 61. (ZSIC)

Diagnostic characters : Length 1.9-3.1 mm. Head and thorax dark metallic blue, gaster blackish brown with metallic blue reflection dorsolaterally and ventrally; POL 1.3x OOL; antennae with anelli equal, transverse, pedicel plus flagellum little shorter than head width, clava with terminal stylus sharp; forewing with discal pubescence less distinct; gaster elongate, ovate, 1.1x as long as head plus thorax combined.

Material examined : 2 Female, India 916 m. Karnataka, Bangalore, 21-30.iv.1989, K. Ghorpade MT; 2 Males, same data as above; 2 Female, same data as above except 11-20.v.1989.

Distribution : India.

Remarks : The species is reported for the first time outside the type locality in India.

32. *Norbanus malabarensis* Sureshan (Figs. 65-66)

2003. *Norbanus malabarensis* Sureshan. *Rec. zool. Surv. India., Occ. Paper No.*, 205 : 62. (ZSIC)

Diagnostic characters : Length 2.9-4.1mm. Head and thorax bluish black, gaster reddish brown; head uniformly engraved reticulate; POL as long as OOL; antennae with pedicel plus flagellum 1.1x as long as head width, second anellus 2x as long as first; forewing with discal pubescence moderately dense; gaster lanceolate, 1.2x as long as head plus thorax combined.

Material examined : 1 Female : India : Karnataka, Bangalore, 916 m. 1-10.iii.1989, K. Ghorpade MT.

Distribution : India.

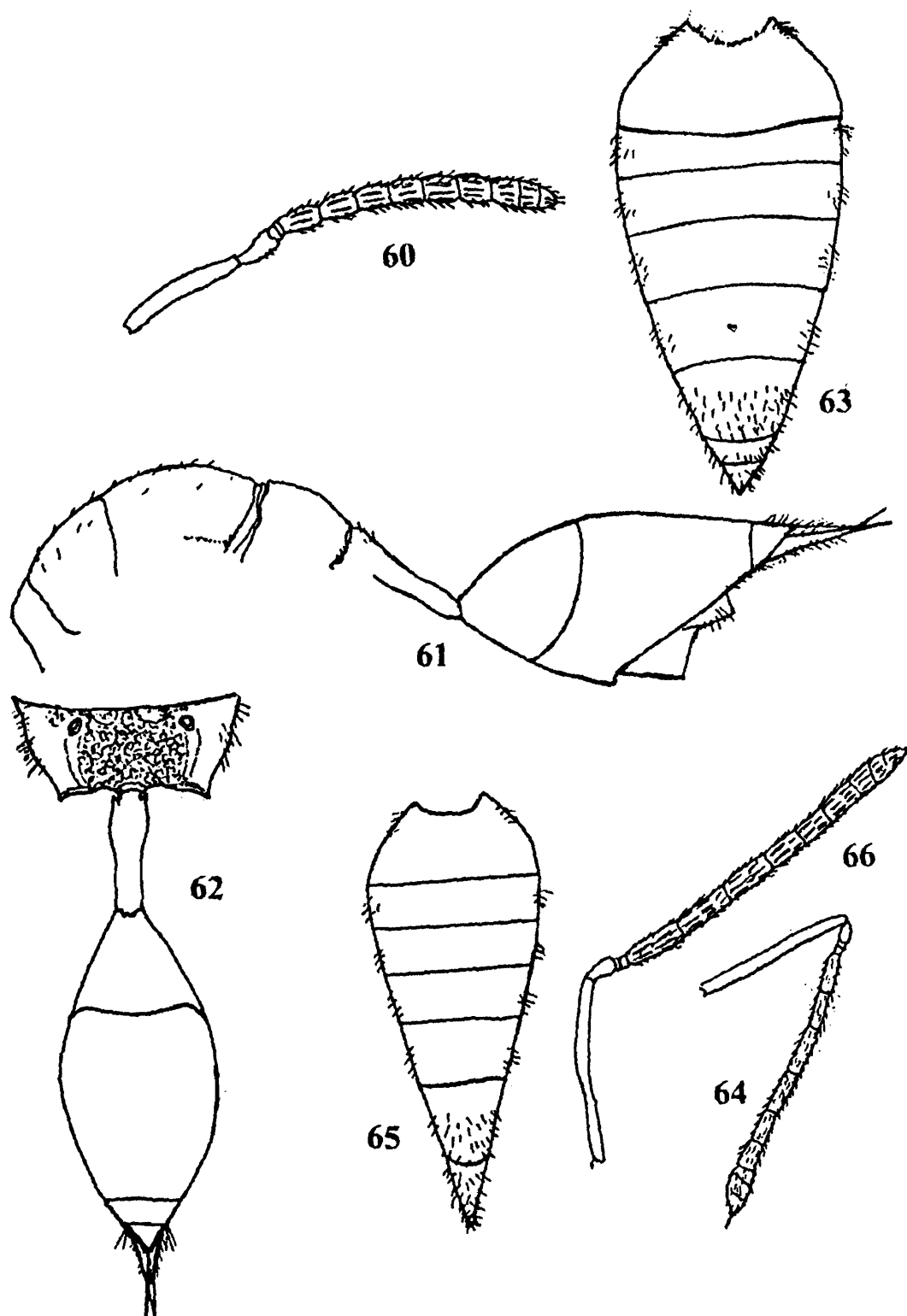
Remarks : The species is reported here for the first time outside the type locality in India.

33. *Norbanus thekkadiensis* Sureshan (Fig. 42)

2003. *Norbanus thekkadiensis* Sureshan. *Rec. zool. Surv. India., Occ. Paper No.*, 205 : 60. (ZSIC).

Diagnostic characters : Length 1.8-2.2 mm. Head and thorax bluish black, antennae and gaster uniformly testaceous, POL 1.98x OOL; anterior margin of clypeus shallowly emarginate; pronotum as broad as mesoscutum, posterior margin of collar deeply emarginate; gaster not much pointed towards tip, as long as head plus thorax combined.

Material examined : 1 Female, India : 916 m. Karnataka, Bangalore, 21-30.iv.1989, K. Ghorpade, MT; 1 Female, India : 916 km. Karnataka, Bangalore, 11-30.xi.1988, K. Ghorpade M.T; 1 Female, same data as above except 1-10.iii.1989.



Figs. 60-62. *Sphegigaster karnatakaensis* sp. nov. female : 60. antenna, 61. body (without head) in profile, 62. propodeum and gaster dorsal view; 63-64. *Norbanus acuminatus* (Dut & Ferriere) female : 63. gaster dorsal view, 64. antenna; 65-66. *Norbanus malabarensis* Sureshan, female : 65. gaster dorsal view, 66. antenna.

Distribution : India.

Remarks : The species is previously known only from Kerala, the type locality. It is being reported for the first time from Karnataka.

34. *Oniticellobia longigastra* Sureshan & Narendarn (Fig.24)

1994. *Oniticellobia longigastra* Sureshan & Narendran. *Rec. zool. Surv. India.*, **94**(1) : 113. (ZSIC).

Diagnostic characters : Length : 2.5-5 mm. Body shiny black; head 1.2x as broad as thorax; POL 1.5x OOL; antennae with third anellus as long as first and second combined; propodeum with costula weak, plicae indicated only by an anterior swelling mesad of spiracle; gaster narrow, acuminate, 1.4x as long as head plus thorax combined.

Material examined : 1 Female : Sri Lanka : Central Province, Kandy dist., Vict. Randenigala. Rantembe Sanct. Mahawele R. N 07° 12' E 080° 57', 25-29. viii, 1999. Malaise trap. M & J Wasbauer.

Distribution : India, Sri Lanka (current study)

Remarks : This is the first record of the species from Sri Lanka. Boucek (1979) reported an undetermined species of *Oniticellobia* from Sri Lanka.

35. *Oricoruna arcotnesis* (Mani & Kurian) (Figs. 25-27)

1953. *Pachycrepoides arcotnesis* Mani & Kurian. *Ind. J. Ent.*, **15** : 11(Combination by Boucek *et al.* 1979). (Type lost)

1953. *Pachycrepoides coorgensis* Mani & Kurian. *Ind. J. Ent.*, **15** : 10. (Type lost).

Diagnostic characters : Length : 1.5-2 mm. Black. Legs yellowish brown, wings hyaline; head viewed from above rectangular, 2.5x as broad as long, vertex dull, distinctly and coarsely punctate, mandibles with 3 and 4 teeth; antennal scape reaching up to median ocellus, pedicel slightly shorter than F1, which is equal to F2, which is longer than F3; pronotum closely and finely punctate; propodeum without median carina, forewing with SMV nearly 3x MV, which is slightly longer than STV; gaster as long as thorax.

Material examined : 1 Male, India. 916 M. Karnataka, Bangalore 21-30.iv.1989, K. Ghorpade M.T; 4 female, same data as above; 1 Female, same data above except 11-20 v.1989.

Distribution : India.

Remarks : Boucek (1978) synonymised *P. coorgensis* Mani & Kurian with *P. arcotensis* and according to him the only difference between the two species is in the nature of clypeus. In *coorgensis* clypeal margin is rounded and in *arcotensis* it is acute. The present specimens show character state closer to *coorgensis* in the nature of clypeus and antenna, but a separation of these two species is difficult since the primary types of both are lost.

36. *Oxysychus lankaensis* sp. nov. (Figs. 28-31)

Female : Length 3.3 mm. Head and thorax metallic bluish black, gaster brown with slight metallic blue reflection; antennae with scape and pedicel testaceous, remainder brown; coxae and femora brown except middle coxae testaceous, hind femora basally and fore and mid femora almost completely brown, remainder of legs testaceous with tips of tarsi brown; tegulae testaceous, wings hyaline, veins testaceous.

Head : In dorsal view 1.9x as broad as long, POL almost 2x OOL, temple length 0.31x eye length, occiput strongly receding, head moderately and engraved reticulate with moderate dense pubescence. Head in front view 1.2x as broad as high, clypeus radiately striated, anterior margin with two strong teeth; malar space 0.5x as long as eye, eye 1.3x as long as broad (in profile), malar grooves distinct; gena finely carinate posteriorly. Antennae (Fig. 28) inserted almost in middle of face, toruli separated by their individual diameter, scape 0.7x as long as eye, reaching middle of front ocellus, pedicel shorter than F1, anelli transverse, equal in length, F1 as long as pedicel plus anelli combined, F2 little shorter than F1, F3 and F4 equal, little shorter than F2, F5 shortest, clava as long as 2 preceding segments combined, F1 with three rows of sensillae, other funicular segments with 2 rows of long sensillae.

Thorax : 1.4 xs as long as broad, reticulate punctate with moderate dense pubescence, pronotal collar anteriorly with an irregular carina, with a smooth line posteriorly. Mesoscutum with notauli almost complete, slightly obliterated in the posterior end. Mesoscutum 1.9x as broad as long. Scutellum as long as mesoscutum medially, frenum not separated, indicated by a smooth line on sides. Propodeum with reticulation smooth and small meshed, nucha very small, posterior margin deeply incurved, median carina slightly indicated in the anterior end, plicae sharp, indicated up to middle, enclosing a broad, deep fovea anteriorly, spiracles oval, close to metanotum, callus finely reticulate with moderate dense pubescence. Prepectus finely reticulate. Metapleuron finely reticulate. Mesopleuron reticulate except for a triangular shiny area below wings. Hind tibia with two spurs. Forewing (Fig. 29) 2.4x as long as broad, with marginal fringe very small, almost indistinct, basal part almost bare, otherwise pubescence less conspicuous, speculum open below, costal cell completely hairy in the tip. Relative lengths : SMV 22, MV 11.5, PMV 7, STV 4.

Gaster : (Fig. 30) 1.44x as long as head plus thorax combined, slender, elongate, 4.3x as long as broad, posterior margin of T1 almost straight, hypopygium reaching little below hind margin of T4.

Male : Length 2.1 mm. Resembles female but differs in having antenna with scape exceeding above vertex level; gaster short, brown with a whitish patch dorsally in the basal half, antennae (Fig. 31) testaceous with clava brown, with 2 anelli and 6 funicular segments, F1 narrow, forewing with basal cell and basal vein pubescent

Holotype : Female : Sri Lanka, Central province, Kandy dist, Vict. Randenigala, Rantembe Sanct. N 07°13' E 080° 057', 23-30.viii.1999, Mt. M & J. Washbauer. **Paratype** : 1 Male. Same data as holotype (in Bohart Museum of Entomology, University of California, Davis, USA)

Remarks : This species closely resembles *O.coimbatorensis* Ferriere in general morphology but differs from it in having antennae with F1 1.5x as long as pedicel, propodeum with indication of median carina anteriorly, color bluish black, gaster with metallic blue reflection basally, legs with coxae brown, thorax distinctly reticulate. (in *coimbatorensis* F1 more than twice as long as pedicel, propodeum with no median carina, head and thorax dark green, gaster shining green at base, coxae green and thorax finely reticulate).

37. *Pachyneuron aeneum* Masi (Figs. 46-47)

1929. *Pachyneuron aeneus* Masi. *Ann. Mus. Civ. Stor. Nat. Giacomo Doria*, **53** : 229. (MCSG).

1974. *Pachyneuron kamathi* Mani & Saraswat. *Mem. School. Ent. Agra No.*, **3** : 95. (Synonymised by Boucek *et al.*, 1979)

1974. *Pachyneuron deccanensis* Mani & Saraswat. *Mem. School. Ent. Agra No.*, **3** : 95. (synonymised by Boucek *et al.*, 1979)

Diagnostic characters : Dark brown to black; anterior margin of clypeus weakly emarginate; antenna with scape not reaching median ocellus; thorax finely reticulate; forewing without marginal fringe, discal ciliation very sparse, indistinct, PMV only slightly longer than STV, MV strongly thickened.

Material examined : 1 Female, India : Karnataka, Bangalore, 21-30.iii.1987, K.Ghorpade MT.

Distribution : India.

Remarks : This is the first record of the species from Karnataka.

38. *Pachyneuron bangalorensis* sp. nov. (Figs. 43-45)

Female : Length 1.5-1.6 mm (Holotype 1.5 mm). Head and thorax dark metallic blue, gaster dark brown; antennae with scape and pedicel testaceous, rest brown; legs with coxae blackish brown, femora yellowish brown on basal $\frac{3}{4}$ area, remainder of legs testaceous with tips of tarsi brown. Tegulae and veins pale brown, wings hyaline.

Head : Uniformly and moderately reticulate with small hairs, clypeus well marked off, radiately striated, striae extending in the form of elongated reticulations outside clypeal area, anterior margin of clypeus almost straight, very slightly emarginate. In front view head width 1.25x height, posterior margin of gena sharp, not carinate, lamina of gena ending in a blunt lobe; malar groove indistinct; malar space 0.6x as long as eye length (in profile), eye 1.2x as long as broad. Head in dorsal view 2.4x as broad as long, temple length 0.4x eye length, POL 1.6x OOL, occipital line strongly curved, angulate posteriolaterally. Antennae (Fig. 45) inserted below middle of face, toruli widely separated, scrobe deep, scape not reaching median ocellus, 0.82x as long as eye, pedicel plus flagellum 0.75x head width, anelli 2, funicular segments 6, pedicel longer than F1, length 1.5x width, funicular segments transverse, each with one row of sensillae, clava almost equal to 4 preceding segments combined.

Thorax : Anterior margin of pronotum carinate, finely reticulate, broad smooth area behind carina. Mesoscutum and scutellum moderately reticulate with small hairs. Mesoscutum 1.8x as broad as long, notauli incomplete, reaching half length of mesoscutum. Axillae advanced strongly, scutoscuteellar suture of both sides almost meeting. Scutellum medially as long as mesoscutum, frenal line indicated only on sides. Propodeum with median area moderately reticulate, lateral area almost fine, plicae indicated anteriorly, enclosing a deep fovea inside, spiracles oval, separated from hind margin of metanotum by their long diameter, post spiracular sulcus distinct, nucha small, separated by a constriction, almost smooth. Propodeum medially little shorter than half-length of scutellum. Metapleuron finely reticulate. Mesopleuron moderately reticulate. Prepectus smooth. Relative lengths: hind femur 14, tibia 14, tarsus 14; hind tibia with one spur. Forewing (Fig. 44) 2x as long as broad, marginal fringe present, discal pubescence small, less dense, indistinct, MV 2.75x as long as broad, basal part of wing bare, costal cell with few hairs in the distal part, stigmal vein only slightly shorter than MV (5 /5.5), PMV 1.72x MV. Relative lengths : MV 5.5, PMV 10, STV 5.

Gaster : (Fig. 43) petiole short, sculptured, gaster 0.75x as long as head plus thorax combined (in profile), hypopygium reaching end of T5, ovipositor little exerted, posterior margin of T1 little indented in the middle; in dorsal view gaster 1.2x as long as broad.

Holotype : Female : India, 916 m, Karnataka, Bangalore, 21-30.iii.1987, Ghorpade MT. **Paratype** : 1 female, data same as holotype. (in Bohart Museum of Entomology, University of California, Davis, USA)

Remarks : This species resembles *P.leucopiscida* Mani in general morphology but differs from it in having occipital line strongly curved at vertex and angulate posterolaterally, POL 1.6x OOL, antennae inserted below middle of face, scape not reaching median ocellus, STV as long as MV (in *leucopiscida* occipital line very slightly curved at vertex and not angulate, antennae inserted in middle of face with scape reaching front ocellus, and forewing with STV much longer than MV).

39. *Pachyneuron solitarium* (Hartig) (Figs. 36-37)

1758. *Pachyneuron coccorum* acutt. Ex. parte (nec. *Ichneumon coccorum*) Linn. *Syst. Nat.* 10 th Ed., (Hartig coll. Munich)

1838. *Chrysolampus solitarius* Hartig. *Jahr. Forst. forst. Naturk.*, 1 : 250. (For further synonymy and other details see Graham, 1969).

Diagnosotic characters : Head and thorax bluish black, gaster dark bluish green; clypeus medially produced, anterior margin slightly emarginated or truncate; antennal scape reaching upper edge of front ocellus; propodeum sloping at less steep angle, narrowed posteriorly and remarkably produced beyond base of hind coxae, nucha finely reticulate with front edge not distinctly defined; forewing with MV as long as STV, gaster fusiform, petiole slender, shiny.

Material examined : 1 Female, India 916 m. Karnataka, Bangalore, 21-30.iii.1987, K. Ghorpade MT.

Distribution : India, Europe.

Remarks : This is an uncommon species being reported here from India subsequent to the record by Sureshan (2003).

40. *Panstenon lankaensis* sp. nov. (Figs. 51-53)

Holotype : Female : Length 1.6 mm. Head and pronotum yellowish brown, pronotum more yellowish, rest of thorax dark metallic green; gaster including petiole brown; antennae brown except basal half of scape pale yellow; legs pale yellow; tegulae pale brown; wings hyaline, veins pale whitish yellow.

Head : (Fig. 51) Almost polished, lower face and occiput coriaceous, dorsally collapsing. In dorsal view head width 1.9x length and in front view width 1.2x height. POL almost 2.5 x OOL; lower margin of clypeus slightly arched; malar space 0.6x eye length; frons 1.42x length of eye; eye length 1.4x width (in profile); toruli higher up on face, distance between lower margin of toruli and lower margin of clypeus 1.3x greater than that between toruli and upper margin of head; scape as long as eye, upper end of scape above vertex level; pedicel longer than F1; anelli equal; F1 shorter than F2 which is little longer than F3, F3-F6 almost equal, little shorter than F2; funicular segments with one row of sensilla; club as long as 2.5 preceding segments combined.

Thorax : Moderately convex, 0.8x as broad as head, pronotum almost shiny, collar with very slight indication of a carina mid dorsally, almost non carinate. Mesoscutum coriaceous, 1.7x as broad as long, transscutal groove broad, notauli incomplete, groove like. Scutellum similarly sculptured as mesoscutum. Propodeum (Fig.52) irregularly alveolate-rugulose, plicae traceable, but not strong, spiracles round, propodeum medially 1.44x as long as scutellum. Forewing narrow, 2.9x as long as broad, marginal fringe long. Relative lengths MV 13.5, PMV 10, STV 2.5.

Gaster : (Fig. 53) Ovate lanceolate, petiole strongly transverse without hairs on sides, gaster 2.4x as long as broad in dorsal view and 1.3x as long as thorax, hypopygium reaching end of T4.

Holotype : Female : Sri Lanka : Central Kandy Dist. Univ. Peradeniya, Hantana Mt. 7° 15' N 80° 37', 10-14. viii.1999, coll. M&J.Wasbauer M.T. Paratype : 1 Female, same data as above (length 1.1 mm) (in Bohart Museum of Entomology, University of California, Davis, USA).

Remarks : This species resembles *P. collare* Boucek in general morphology but differs from it in having strongly transverse gastral petiole without hairs laterally, gaster 1.3x as long as thorax, forewing 2.9x as long as broad with MV 5.4x STV, POL 2.5x OOL, antennae inserted not very high so that scape exceeds vertex level a little and difference in antennal structure (in *collare* Boucek gastral petiole fully as long as broad with erect hairs on sides, gaster about as long as thorax, forewing 3.2x as long as broad with MV shorter, 3.9x as long

as STV, POL 1.65x OOL, antennae inserted very high on face with different funicular segments). It also resembles *P. oxylus* Walker but differs from it in having different antenna, longer malar space, dorsally not sunken gaster, finer reticulation on thorax, and uniformly yellow pronotum. Among the other Oriental species it differs from *P. impube* Xiao & Huang and *P. valleculare* Xiao & Huang in having non-carinate pronotum. It resembles *P. annuliforme* Xiao & Huang in having non-carinate pronotum but differs from it in the nature of antenna.

41. *Papuopsia striata* Sureshan (Fig. 68)

2005. *Papuopsia striata* Sureshan. *Rec. zool. Surv. India.*, 105(3-4) : 81-84. (UCDC).

Diagnostic characters : Length 2.2 mm. Black with faint metallic gloss; antennae with 6 funicular segments (if clava counted 2 segmented, then funicle with 7 clearly separated segments), gaster with T1 having longer striae on sides reaching upto middle.

Material examined : 1 Female, Sri Lanka : Kegalla district (1 km S. Rambukkana), 7.xi.1993, coll. Soderlund.

Distribution : Sri Lanka.

Remarks : This is the first described species of *Papuopsia* from the Oriental region. Previously the genus was known only from the Papua New Guinea.

42. *Paracarotomus cephalotes* Ashmead (Fig. 69)

1894. *Paracarotomus cephalotes* Ashmead. *Trans. Amer. Ent. Soc.*, 21 : 336. (USNM)

Diagnostic characters : Length 4 mm. Black, gaster brownish black. POL as long as OOL; antennae inserted above lower margin of eyes, scape hardly reaching median ocellus; anterior margin of clypeus produced, shallowly emarginate. Pronotal collar carinate; notauli broadly groove like, complete. Gaster with hypopygium long.

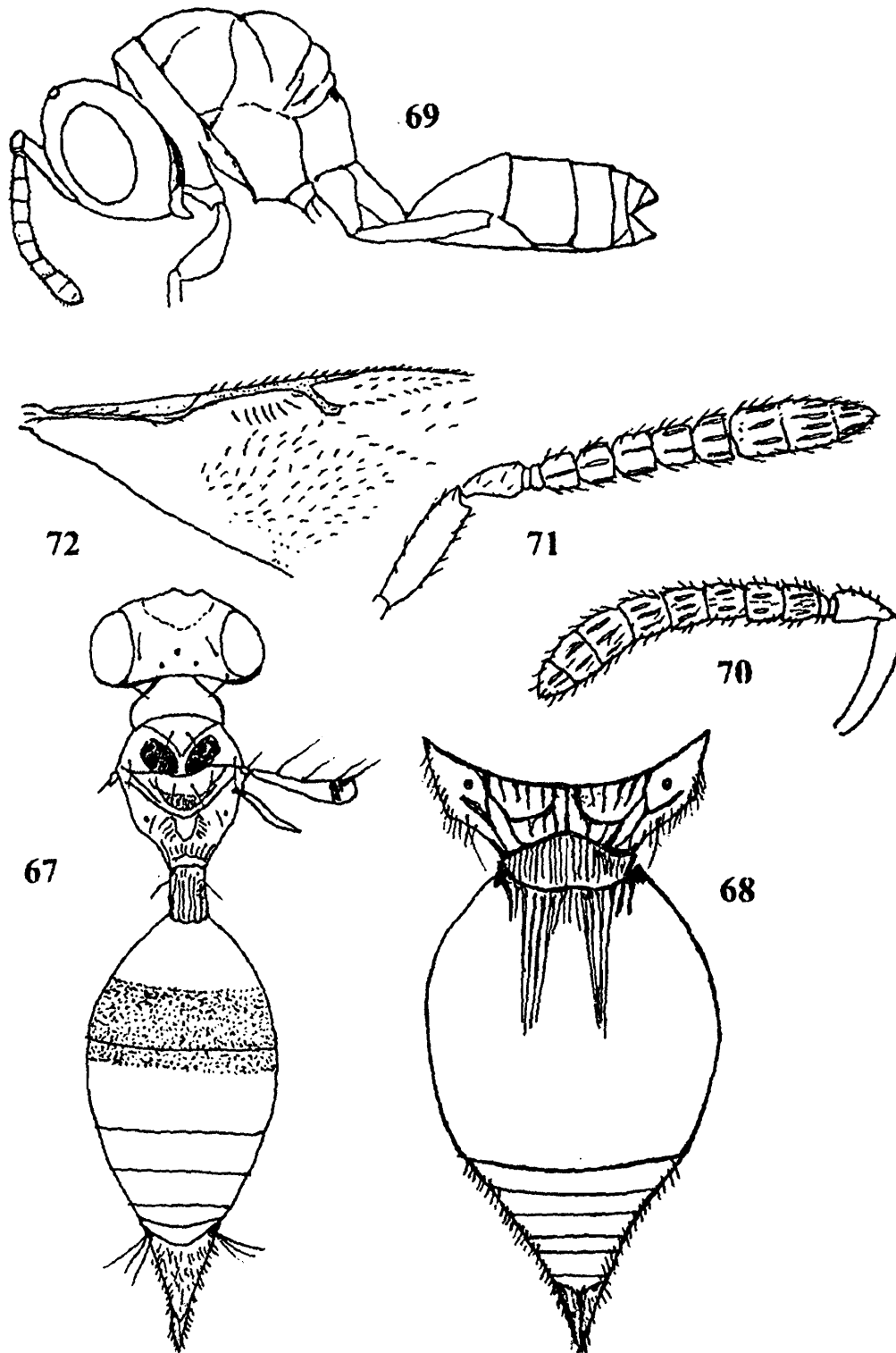
Material examined : 1 Female, Sri Lanka : Central Kandy Dist., Katalu oya Estate base of Kandasami Male, 7° 24' N 80° 07' E, i-ix.1999. YPT M & J Wasbauer; 1 Male, India, 916 m Bangalore, ii.1979, coll. K. Ghorpade MT.

Distribution : Cosmopolitan.

Remarks : Though a cosmopolitan species, not common. This is the first record for the species from Sri Lanka.

43. *Parurios* sp.

Material examined : 1 Male, Sri Lanka : Central Kandy Dist. Univ. Paradeniya Hantana Mt. 7° 15' N 80° 37' E, 10-14. viii.1999, M & J. Wasbauer Mt.



Figs. 67. *Grahamisia gastrae* Sureshan & Narendran, female, body dorsal view; 68. *Papuopsia striata* Sureshan female, propodeum and gaster dorsal view; 69. *Paracarotomus cephalotus* Ashmead, female body in profile; 70. *Systasis dalbergiae* Mani, female antenna; 71-72. *Systasis parvula* Thomson, female : 71. antenna, 72. forewing venation.

Remarks : This is the first record of the genus from Sri Lanka. Narendran et al (2000) described a species of *Parurios* from Kerala, India. Since the only specimen available here is a male, it is kept unidentified.

44. *Propicroscytus oryzae* (Subba Rao) (Fig. 40)

1973. *Obtusiclava oryzae* Subba Rao. *Bull. Ent. Res.*, **62** : 627. (Combination by Boucek *et al.*, 1979). (BMNH).

Diagnostic characters : Length 2.4-4 mm. Head and thorax metallic green, dorsum usually with distinct green iridescence in certain lights; gaster pale to dark yellow, sides and middle with brown streaks longitudinally; gaster lanceolate, 1.2x as long as head plus thorax combined.

Material examined : 1 Female, India : Karnataka, Bangalore, 916 m. 11-30.vii.1989, K. Ghorpade YPT.

Distribution : India, Sri Lanka.

Remarks : Closely resembles *P. mirificus* (Girault), mainly segregated by the body colour. Boucek *et al* (1979) synonymised *Obtusiclava oryzae* with *Propicroscytus mirificus* (Girault). Later Xiao & Huang (2000) revised the status of *oryzae* and retained it.

45. *Pseudocatolaccus bouceki* sp. nov. (Figs. 54-56)

Female : Length 2.2 mm. Head and thorax black with slight metallic reflection; gaster brown. Antennae with scape testaceous to brown, remainder brown. Legs brown except hind femora wholly and distal part of mid femora whitish, tarsi testaceous. Tegulae brown, wings hyaline, veins pale brown; eyes cupreous, mandible brown.

Head : Uniformly and finely reticulate with small curved white hairs; occiput finely striate reticulate. Head 1.2x as wide as thorax; clypeus almost shiny, anterior margin deeply emarginate in the form of two blunt teeth; genae with a deep hollow reaching beyond middle of malar area; malar space 0.76x eye length, malar groove not indicated; eye length 0.76x width. Antennae (Fig. 55) inserted below middle of face at lower ocular line, scape not reaching median ocellus, length 0.8x eye length, pedicel plus flagellum 0.7x head width, pedicel 2x as long as wide, three anelli, third almost as long as first and second combined, F1 little longer than wide, as long as F2, F3-F5 little shorter than F2, clava little shorter than three preceding segments combined, each funicular segments with one row of long sensillae, pubescence moderately dense. In dorsal view head width 2.3x length, occiput strongly receding, not carinate; temple length 0.5x eye length; POL little longer than OOL (5/4). In front view head width 1.3x height, eyes separated by 1.6x their height.

Thorax : Less wider than head, moderately and minutely reticulate with small curved hairs; pronotal collar narrow, not carinate anteriorly, but with few irregular transverse ridge,

moderately reticulate, narrower than mesoscutum. Mesoscutum with notauli incomplete, width 2.1x length. Scutellum medially as long as mesoscutum, frenum not marked. Median area of propodeum (Fig. 54) finely reticulate, lateral parts almost shiny, median carina weakly indicated, spiracles small, oval, little away from hind margin of metanotum, nucha small, separated by a small depression, plicae indicated, not sharp, median area of propodeum half as long as scutellum, propodeum width 4.6x median length, callus ending in a blunt tooth posteriorly. Prepectus smooth, with a median fovea. Mesepisternum moderately reticulate, lower mesepimeron and metapleuron finely reticulate; upper mesepimeron shiny. Hind tibia with one spur. Forewing (Fig. 56) length 2.1x width, marginal fringe small, pilosity beyond speculum moderate, basal vein indicated by few hairs in the base, stigmal vein capitate. Relative lengths SMV 14, MV 9, PMV 7, STV 5.5.

Gaster : (Fig. 54) in dorsal view length 1.6x width, as long as head plus thorax combined, hypopygium reaching end of T4.

Holotype : Female, Sri Lanka, Badulla, 5km e. Wellimada, 9.xi.1993, M. Soderlund ss.
Paratype : 1 Female data same as holotype (in Bohart Museum of Entomology, University of California, Davis, USA).

Etymology : Named after Dr. Z. Boucek, the father of modern Chalcidology.

Remarks : In general morphology this species resembles *P.nitescens* (Walker) but differs from it in having propodeum with a median carina, plicae not sharp and no carinulae on the median area (In *nitescens* propodeum with median carina usually absent or represented only at the front of propodeum behind this effaced or formed into oblique carinulae).

46. *Spalangia fuscipes* Nees (Figs. 77-78)

1834. *Spalangia fuscipes* Nees, *Hym. Ichneum. Affin.Monogr.*, 2 : 270. (Type presumably lost)

Diagnostic characters : Length 1.5-2 mm. Black, head oblong in dorsal view, smooth, with scattered piliferous punctures and long hairs; antennae short, pedicel as long as F1+F2, F1 subquadrate, other funicular segments transverse; pronotum bell shaped without any crossline and immargined, scutellum almost flat, gastral petiole about 1.4x as long as broad.

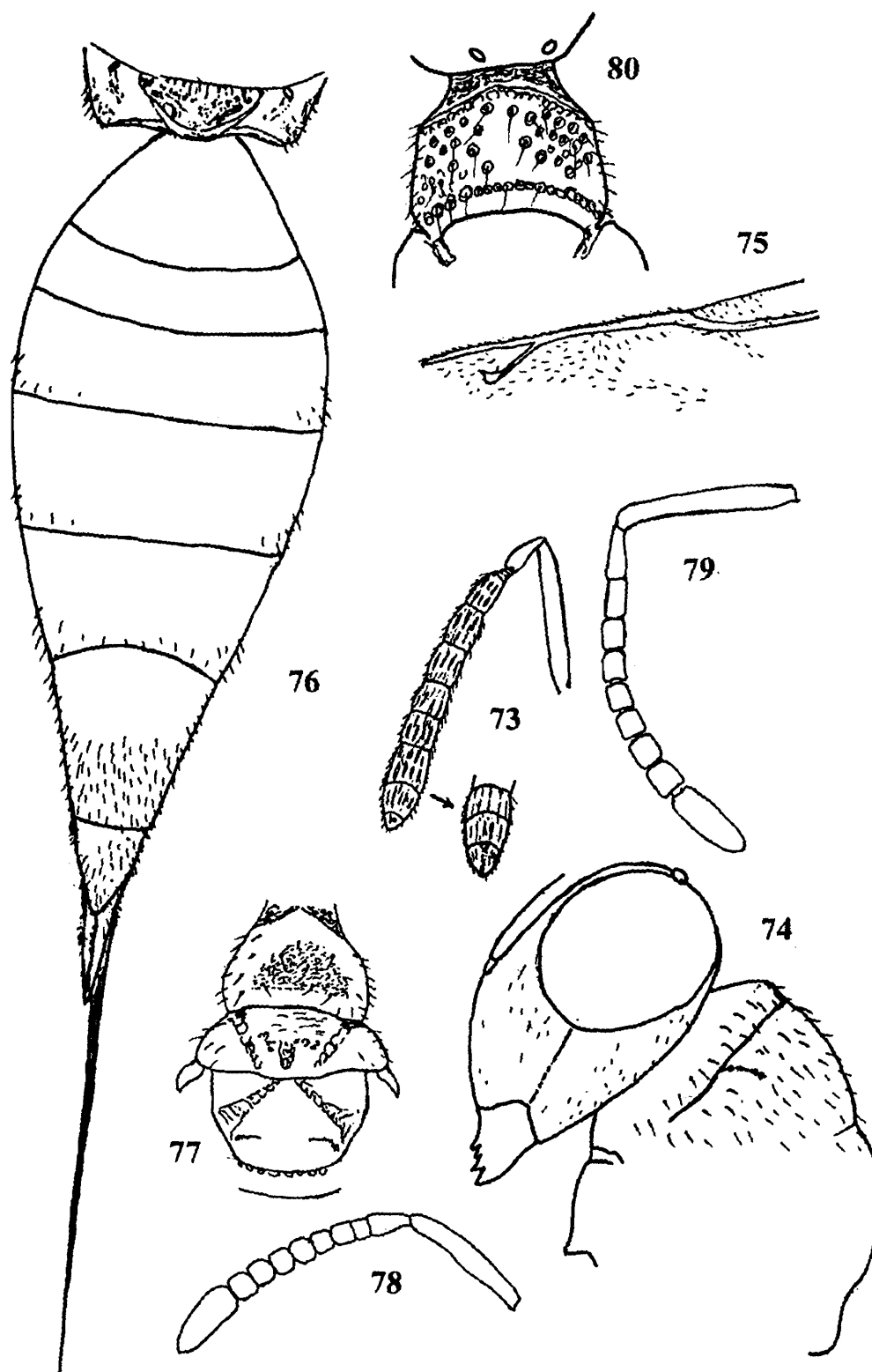
Distribution : India, Europe, North America.

Material examined : 1F, India : Karnataka : Bangalore, 916 m., 21-30.iv.1989, coll. K. Ghorpade, MT.

Remarks : Ahmad (1998) recorded this species for the first time from India based on collection from Andhra Pradesh. Here it is recorded from Karnataka after Ahmad (1998).

47. *Spalangia nigroaenea* Curtis (Figs. 79-80)

1839. *Spalangia nigroaenea* Curtis : *Brit. Ent.*, 16 : fol. 740. P (2). (Curtis coll. Melbourne) (For further synonymy see Graham, 1969).



Figs. 73-76. *Lyubana longigastrea* Sureshan, female : 73. antenna, 74. head and thorax (part) in profile; 75. forewing venation, 76. propodeum and gaster dorsal view; 77-78. *Spalangia fusiceps* Nees, female : 77. thorax dorsal view 78. antenna; 79-80. *Spalangia nigroaenea* Curtis, female : 79. antenna; 80. thorax (part) dorsal view.

Diagnostic characters : Length : 2.9-3.8 mm. Black, often with brassy lusture; pronotum with an isolated crenulate cross-line consisting of close punctures in front of hind margin, disc of collar more or less smooth, impunctate, collar bordered anteriorly by a narrow groove setting off ridge like margin; head distinctly longer than broad (in male only as long as broad), umbilicately punctured with interspaces about as wide as punctures; gaster petiole expanded anteriorly.

Material examined : 1 Female, Sri Lanka : Central Province : Kandy Dist., Katalu Oya Estate, base of Kandasami Male, 7° 24' N 80° 07' E, 1-ix.1999, YPT. M & J. Wasbauer; 1 M, Sri Lanka : Central Province : Kandy Dist, Hantana Mt. N 07° 15' E 80° 37', 10-14-viii.1999, Pan trap, coll. M & J. Wasbauer; 1.M, India : Karnataka, Bangalore, 916 m., 21-30.iii.1987, coll. Ghorpade MT.

Distribution : Cosmopolitan.

Remarks : A cosmopolitan parasite in fly puparia, especially of the synanthropic species. The species is being recorded for the first time from Sri Lanka.

48. *Sphегigaster brunneicornis* (Ferriere) (Figs. 58-59)

1930. *Trigonogastra brunneicornis* Ferriere *Bull. Ent. Res.*, 21 : 356-357. (Lectotype BMNH). (Combination by Boucek *et al.* 19798). (For synonym see Noyes, 2006).

Diagnostic characters : Length : 2-2.5 mm. Body dark green, almost black. Antennal scape, pedicel and anelli yellow, otherwise reddish brown; F1 longer than pedicel, narrowed basally, funicular segments longer than wide except F6 subquadrate, pronotum distinctly carinate; gaster (without petiole) not longer than thorax.

Material examined : 3 Female, Thailand, Chiang Mai, Thung Huay Kho Thambou Donpao Amphur Mae Wang. 20-30 .iii.1997, Sonthichai MT.

Distribution : India, Sri Lanka, Thailand.

Remarks : The species is being recorded for the first time from South east Asia, outside India and Sri Lanka.

49. *Sphегigaster karnatakaensis* sp. nov. (Figs. 60-62)

Female : length 1.7 mm. Head thorax and petiole dark metallic blue, head more blackish, gaster brown; coxae concolorous with thorax, remainder of legs testaceous with tips of tarsi brown; antennae with scape and pedicel testaceous, remainder brown. Tegulae brown, wings hyaline, veins pale brown.

Head : Finely reticulate with small white pubescence. In dorsal view head 2.1x as broad as long, POL as long as OOL; occiput round, non carinate; temple length 0.8x eye length; clypeus with two sharp teeth, radiately striated. In front view head width 1.3x height;

antennae (Fig. 60) inserted only little below middle of face, scape reaching median ocellus, little shorter than eye, anelli two, transverse, pedicel 2x as long as broad, pedicel plus flagellum as long as head width, F1 as long as pedicel, funicular segments longer than broad, almost equal in length, flagellum gradually broadening towards tip, clava almost equal to 2.5 preceding segments combined, funicular segments with one row of long sensillae. Malar space 0.3x eye length (in profile), eye length 1.5x width, gena almost fine, not carinate, with a broad hollow at mouth corner reaching half length of malar space, malar groove distinct.

Thorax : (Fig. 61) Distinctly reticulate with long white hairs, pronotal collar not carinate, with a broad smooth strip posteriorly. Mesoscutum with notauli incomplete, 2.1x as broad as long, reticulation coarse. Scutellum medially slightly longer than mesoscutum, frenal area marked by broader reticulation. Propodeum (Fig. 62) medially shorter than scutellum (0.8x), median area distinctly reticulate, lateral parts and nuchal area shiny, spiracle small, oval, almost touching hind margin of metanotum, plicae indicated only anteriorly, post spiracular sulcus distinct. Prepectus almost shiny, with a broad depression. Mesopleuron reticulate except upper mesepimeron smooth. Metapleuron finely reticulate. Legs slender. Forewing length 2.34x width, marginal fringe long, pubescence distinct, basal part almost bare, basal vein not indicated, speculum open below. Relative lengths : MV 13, PMV 10.5, STV 5.5.

Gaster : (Figs. 61, 62) Petiole finely reticulate, almost shiny, 3.5x as long as broad, broad at base with forwardly directed hairs on either side, gaster fusiform, in dorsal view 2.2x as long as broad, posterior margin of T1 slightly produced, T2 largest, ovipositor exerted.

Holotype : Female : India 916 m. Karnataka, Bangalore, 21-30.iv.1989. K. Ghorpade MT. (in Bohart Museum of Entomology, University of California, Davis, USA)

Remarks : This species resembles *S. reticulata* Sureshan and Narendran in general morphology especially in the nature of gaster, antenna etc but differs in having POL as long as OOL, scape reaching front ocellus, forewing with basal vein bare, gastral petiole almost fine (in *reticulata* POL 1.6x OOL, scape hardly reaching front ocellus, forewing with basal vein indicated, gastral petiole moderately reticulate even on sides.

50. *Sphegigaster stepicola* Boucek (Fig. 57)

1965. *Sphegigaster stepicola* Boucek. *Acta Fauna Ent. Mus. Natl. Pragae*, **11** : 12-14. (BMNH) (Boucek *et al.*, 1979 synonymised)

1971. *Acroclisis melanagromyzae* Mani. *J. Nat. Hist.*, **5** : 591-593. (Synonymy by Boucek *et al.*, 1979)

Diagnostic characters : Length 1.5-2 mm. Body shiny black, slender. Antennae with all funicular segments transverse, F1 shorter than pedicel. Gaster oval, shorter than thorax, petiole length nearly 3x width.

Material examined : 1 Female : Thailand, Chiang Mai, Thung huay Kho Thambou Donpao Amphur Mae Wang. 20-30.iii.1997, S.Sonthichai MT; 1 Female, Data same as above except 10-20.iv.1997; 1 Female data same above except 10-20.iii.1997.

Distribution : India, Thailand, Europe.

Remarks : This is the first record of the species from Southeast Asia other than India.

51. *Syntomopus carinatus* Sureshan & Narendran (Figs. 38-39)

1999 : *Syntomopus carinatus* Sureshan & Narendran. *Rec. zool. Surv. India.*, 97(4) : 84. (ZSIC).

Diagnostic characters : Length 2.1 mm. Head thorax and petiole metallic green, gaster brown with greenish tinge; head width 2.14x length, POL 1.6x OOL; antennal scape not reaching median ocellus, clava as long as 2.5 preceding segments combined; propodeum with median carina complete, median area finely reticulate, gaster petiole length almost 2x width.

Material examined : 1 Female, Malaysia : Pahang Tanah Rata Cameron highlands, 16-18.vi.1996, S.L. Heydon & S. Fung; 2 Male, same data as above; 1 Female, Thailand, Chiang Maithung Huay Kho Thambou Dompao Amphur Mae Wang 20-30.iii.1997, S. Sonthichai, MT. 2 Male, same data as first.

Distribution : India, Malaysia, Thailand.

Remarks : The species is hitherto known only from India, and is being recorded for the first time from other Southeast Asian countries.

52. *Systasis dalbergiae* Mani (Fig. 70)

1942. *Systasis dalbergiae* Mani. *Indian. J. Ent.*, 4 : 157-158. (IARI).

Diagnostic characters : Length 1.5-1.8 mm. Body bright metallic green. Antennae dark brown; head in front view rounded, OOL 1.25x ocellar diameter; face rugosely punctuate between scape and inner orbital border, just below antennae transversely reticulate; both mandibles tridentate; antennae with pedicel much longer than F1, all funicular segments quadrate, subequal.

Material examined : 8 Female. India : Karnataka : Bangalore, 916 m. 11-20.x.1988, K. Ghorpade; 3 Male, same data as above.

Distribution : India.

Remarks : This is the first record of the species outside type locality.

53. *Systasis parvula* Thomson (Figs. 71-72)

1876. *Systasis parvula* Thomson. *Hym. Scand. Pteromalus (Swe). H. Ohl. Lund.* : 205. (LUZN).

Diagnostic characters : Length : 1.6-2 mm. Body blue or green, scape metallic green or blue, reaching median ocellus; F1 half as long as pedicel, clava longer than combined length of F3-F5; propodeum with plicae ridge like with smooth crest lacking or extending only half way to anterior edge of propodeum; gaster length 1.2-1.5x width and 0.85 -0.92x combined length of head and thorax

Material examined : 17 female, Sri Lanka, Moneregala, 2.5km Ronketiya, 10-xi.1993. Soderlund ss., 1 female, Sri Lanka, Ratna pura, 5 km nw. Weddagala, 8-xi.1993, M.Soderlund, 18 male, same data as first, 2 male, Sri Lanka, Moneregala, 8km Ronketiya, 10-xi. 1993, M. Soderlund ss.

Distribution : Palearctic, Nearctic and Oriental regions.

Remarks : This is the first record of the species from the Oriental region

54. *Systasis* sp.

Material examined : 2 male, India : Karnataka, Bangalore, 916 m, 1-15 viii. 1987, K. Ghorpade ypt. 1 female, same data except 11-20.v.1989, K. Ghorpade.

Remarks : The species identity couldn't be made since the specimens are badly damaged or belong to male sex only.

SUMMARY

The present paper deals with the description of 6 new species and taxonomic informations on other 48 species of Pteromalidae under 37 genera from South east Asia. The study is based on collections loaned from the Bohart Museum of Entomology, University of California, USA which was made mainly from India, Sri Lanka and some South East Asian countries like Taiwan, Malaysia, Laos, Vietnam and Thailand during the years 1958-1997. The new species described here are *Pachyneuron bangalorensis* sp. nov., *Pseudocatolaccus bouceki* sp. nov, *Sphegigaster karnatakaensis* sp. nov. *Oxysychnus lankaensis* sp. nov. *Panstenon lankaensis* sp. nov. and *Callitula heydoni* sp. nov. As part of study of the present material one new genus and 6 new species were also described earlier viz. *Neolyubana* Sureshan, 2006, *Neolyubana noyesi* Sureshan, 2006, *Grahamisia gastris* Sureshan & Narendran, 2004, *Coelopisthia lankana* Sureshan, 2006, *Dipara intermedia* Sureshan & Narendran, 2005, *Papuopsia striata* Sureshan, 2005 and *Lyubana longigastra* Sureshan (in press). (Sureshan 2005 b, 2006 a, b, Sureshan (in press) and Sureshan & Narendran 2004, 2005 c).

The study reveals the extension of distribution of some genera and species in Southeast Asia. The genera *Coelopisthia* Forster, *Papuopsia* Boucek and *Pseudocatolaccus* Boucek

are reported for the first time from the Oriental region for new species (one each) described under each genera from Sri Lanka. The genus *Lyubana* Boucek is reported for the first time from the Indian subcontinent based on the description of a new species from Sri Lanka. The genera *Gastrancistrus* Westwood, *Homoporus* Thomson, *Lariophagus* Crawford, *Merismomorpha* Girault *Paracarotomus* Ashmead, *Mesopolobus* Westwood, *Oxysychus* Delucchi, and *Parurios* Girault are reported for the first time from Sri Lanka. The distributional range of species *Systasis parvula* Thomson has been extended to the Oriental region by reporting it from Sri Lanka. The distribution of *Kumarella angulus* Sureshan, *Sphegigaster brunneicornis* (Ferriere), and *Syntomopus carinatus* Sureshan and Narendran has been extended to South East Asia. Some species which were known earlier from Indian subcontinent are also reported for the first time from Sri Lanka viz. *Acroclisoides indicus* Ferriere, *Callitula anguloclypea* Sureshan, *Callitula peethapada* Narendran & Mohana, *Dinarmus acutus* (Thomson), *Dinarmus basalis* (Rondani), *Oniticellobia longigastera* Sureshan and Narendran and *Spalangia nigroaenea* Curtis. The present study indicates the richness of the Pteromalid fauna and the gaps in taxonomic knowledge of the group from the Indian subcontinent and South east Asia. The occurrence of many interesting genera and species in Sri Lanka and South east Asian countries indicates the need for further serious attempts for collections of Pteromalidae from these areas which were very poorly explored earlier.

ACKNOWLEDGEMENTS

I am grateful to the Director, Zoological Survey of India, and the Officer in charge, Zoological Survey of India, Estuarine Biological Station, Gopalpur-on-Sea, Orissa for providing facilities for undertaking the work. I am also grateful to Dr. Steven L. Heydon, Bohart Museum of Entomology, University of California, USA for arranging the loan of specimens and providing some literature on Pteromalidae.

REFERENCES

- Boucek, Z. 1978. *Oricoruna* and *Manineura*, new Pteromalid genera (Hymenoptera) from the Oriental Region. *Oriental insects*, 12(4) : 469-472.
- Boucek, Z. 1988. Australasian Chalcidoidea (Hymenoptera). C.A.B. International Wallingford, U. K. : 1-832.
- Boucek, Z. Subba Rao, B.R. & Farooqi, S.I. 1979. A preliminary review of Pteromalidae (Hymenoptera) of India and adjacent countries. *Oriental Insects.*, 12(4) : 433-467.
- Faarooqi, S.I. & Subba Rao, B.R. 1985. Family Pteromalidae pp. 254-263. In Subba Rao & Hayat (Eds.) The Chalcidoidea (Insecta : Hymenoptera) of India and the adjacent countries part. I. Review of families and keys to families and genera. *Oriental Insects*, 19 : 161-310 & 15pp.

- Faarooqi, S.I. & Subba Rao, B.R. 1986. Family Pteromalidae pp. 279-306. In : Subba Rao & Hayat (Eds.) *The Chalcidoidea (Insecta : Hymenoptera) of India and the adjacent countries part. II. A catalogue. Oriental Insects., 20* : 1-430.
- Graham, M.W.R. de. V. 1969. The Pteromalidae of north-western Europe (Hymenoptera : Chalcidoidea). *Bull. Bri. Mus. Nat. Hist. (Ent.). Suppl., 16* : 1-908.
- Narendran, T.C., T.V. Mini & K.A. Karmaly. 2000. A new species of *Parurios* Girault (Hymenoptera : Pteromalidae : Diparinae) from Kerala (India). *Bull. Pure and Applied Sci., 194(2)* : 137-140.
- Narendran, T.C., P.M. Sureshan, P. Girish Kumar and Santhosh, S. 2004. A new species and a new record of the genus *Macroglenes* Westwood (Hymenoptera : Chalcidoidea) from India. *Zoos 'print journal., 19(12)* : 1704-1705.
- Noyes, J.S. 2006. Universal Chalcidoidea Database. www.nhm.ac.uk/entomology/chalcidoids.
- Rasplus, J.Y. 1989. Revision Des Espèces Afrotropicales Du Genre *Dinarmus* Thomson (Hymenoptera : Pteromalidae). *Annls Soc. ent Fr. (N.S.), 25(2)* : 135-162.
- Subba Rao, B.R. 1981. Descriptions of new species of Pteromalidae from the Orient (Hymenoptera : Chalcidoidea). *Proc. Ind. Acad. Sci., (B) 90* : 473-482.
- Sureshan, P.M. 2003. Pteromalinae (Pteromalidae : Chalcidoidea : Hymenoptera) of Indian subcontinent. *Rec. zool. Surv. India., Occ. Paper No. 205* : 1-170.
- Sureshan, P.M. 2004. On the distribution and variations in species of *Kumarella* Sureshan (Hymenoptera : Chalcidoidea : Pteromalidae) *Rec. zool. Surv. India., 103(3-4)* : 125-127.
- Sureshan, P.M. 2005 a. New host and distributional records for *Solenura ania* (Walker) from India and redescription of *Solenura feretrius* (Walker) (Hymenoptera : Chalcidoidea : Pteromalidae) *Rec. zool. Surv. India., 105(1-2)* : 111-116.
- Sureshan, P.M. 2005 b First record of *Pauopsia* Boucek from the Oriental region with the description of a new species from Sri Lanka. (Hymenoptera : Chalcidoidea : Pteromalidae) *Rec. zool. Surv. India., 105(3-4)* : 81-84.
- Sureshan, P.M. 2006a. First record of *Coelopisthia* Forster (Chalcidoidea : Pteromalidae) from Oriental region with the description of a new species from Sri Lanka. *Zoos 'print journal, 21(3)* : 2187-2188.
- Sureshan, P.M. 2006 b. A new genus of Pteromalidae from Sri Lanka with a note on synonymy (Hymenoptera : Chalcidoidea) *Rec. zool. Surv. India., 106(1)* : 63-67.
- Sureshan, P.M. (2007) First record of *Lyubana* Boucek from Indian subcontinent with the description of a new species from Sri Lanka (Hymenoptera : Chalcidoidea : Pteromalidae) *Rec. zool. Surv. India, 107 (Part-3)* : 1-5.

- Sureshan, P.M. and Narendran, T.C. 2003. A checklist of Pteromalidae (Hymenoptera : Chalcidoidea) from the Indian subcontinent. *Zoos' print journal*, **18**(5) : 1099-1110.
- Sureshan, P.M. and Narendran, T.C. 2004a. Key to the Genera of Pteromalidae of India and the adjacent countries (Hymenoptera : Chalcidoidea). *Rec. zool. Surv. India. Occasional paper*, **229** : 1-56.
- Sureshan, P.M. and Narendran, T.C. 2004b. Description of a new species of *Grahamisia* Delucchi from Sri Lanka and key to the world species (Hymenoptera : Chalcidoidea : Pteromalidae) *Zoosprint journal*, **19**(9) : 1616-1618.
- Sureshan, P.M. and Narendran, T.C. 2005 a. Description of a new species of *Ophelosia* Riley with synonymic and taxonomic notes on Indian Eunotinae (Hymenoptera : Chalcidoidea : Pteromalidae) *Zoosprint journal*, **20**(5): 1854-1855.
- Sureshan, P.M. and Narendran, T.C. 2005 b. A new species of *Theocolax* Westwood (Chalcidoidea : Pteromalidae) parasitizing wood boring beetles from India. *Rec. zool. Surv. India*, **104**(1-2) : 141-146.
- Sureshan, P.M. and Narendran, T.C. 2005 c. A new species of *Dipara* Walker (Hymenoptera : Pteromalidae) from Sri Lanka and key to the species of Indian subcontinent. *Rec. zool. Surv. India*, **105**(1-2) : 105-109.
- Xiao H, DW Huang. 2000. A taxonomic study on Pteromalidae (Hymenoptera) from Hainan, China. *Entomotaxonomia*, **22** : 140-149.