



A TAXONOMIC REVIEW OF *CHRYSOCHARIS* FOERSTER (HYMENOPTERA: EULOPHIDAE) OF INDIAN SUBCONTINENT

T.C. NARENDRAN*, NAKEER RAZAK** AND P.M. SURESHAN***

* All India Coordinated Research Project, C/o Western Ghat Regional Centre
Zoological Survey of India, Calicut, Kerala, 673006, India

**Department of Zoology, Punjabi University, Patiala, Punjab, 147002, India

***Western Ghat Regional Centre, Zoological Survey of India
Calicut, Kerala, 673006

INTRODUCTION

The genus *Chrysocharis* Foerster is represented so far by 137 species in the world (Noyes, 2012). Among these 25 species occur in the Oriental Region and 13 species are known from the Indian subcontinent (which includes India, Pakistan, Bangladesh, Nepal, Myanmar, Bhutan and Sri Lanka) (Hansson, 1985a, 1985b; Khan et al., 2005). The species of *Chrysocharis* are economically very important since their hosts are mostly larvae or pupae of Leaf mining insects. The purpose of this paper is to review *Chrysocharis* species of the Indian subcontinent, to describe new taxa and to provide a new key for identification of these species.

Depository: The Holotypes and paratypes of all new species described in this paper are deposited in ZSIK.

Acronyms: BMNH= The Natural History Museum, London; GBP= G.B. Pant University, Pant Nagar, India; CNC = Canadian National Collection, Ottawa, Canada; DZUC= Department of Zoology, University of Calicut, India; ETHZ= Entomologisches Institute der E.T.H., Zurich, Switzerland; HNHM = Hungarian Natural History Museum, Budapest, Hungary; LUZN = Zoological Museum, Lund University, Sweden; NPC = National Pusa Collection, Indian Agricultural Research Institute, New Delhi; NZSI

= National Collections of Zoological Survey of India, Kolkata, India; ORST = Muséum National d'Histoire Naturelle, Paris, France USNM = United States National Museum of Natural History, Washington, D.C. ZSIK = The Western Ghat Regional Centre, Zoological Survey of India, Kozhikode, India; ZDAMU = Insect Collection, Department of Zoology, Aligarh Muslim University, Aligarh, India.

Abbreviations used: CC = Costal cell; F1 to F4 = Funicular segments 1 to 4; L = Length; MV = Marginal vein; OOL = Minimum distance between eye and posterior ocellus; PMV = Postmarginal vein; POL = Minimum distance between posterior ocelli on vertex; PSGA = Parastigma; SMV = Submarginal vein; STV = Stigmal vein.

Genus *Chrysocharis* Foerster

Chrysocharis Foerster, 1856: 79. Type species *Chrysocharis femoralis* Foerster, 1861: 38; designated by Ashmead, 1904: 370.

Euophthalmomyia Ashmead, 1904: 339. Type species *E. pallidipes* Ashmead. 1904, by original designation. Synonymy with *Chrysocharis* by Yoshimoto, 1973.

Nesomyia Ashmead, 1904a: 344. Type species *N. albipes* Ashmead, 1904b, by original designation. Synonymy with *Chrysocharis* by Peck, 1951.

Keywords: Review, *Chrysocharis*, Indian subcontinent, key, new species, Eulophidae

Omphalchrysocharis Girault, 1917: 3. Type species *N. orientalis* Girault, 1917, by original designation. Synonymy with *Chrysocharis* by Kamijo, 1976.

Rhiconopeltoidea Girault, 1917: 3. Type species *R. amsterdamensis* Girault, 1917, by monotypy. Synonymy with *Chrysocharis* by Yoshimoto, 1973.

Kratochviliana Malac, 1943: 87. Type species *K. moravica* Malac, 1943, by monotypy. Synonymy with *Chrysocharis* by Graham, 1963.

Epilampsis Delucchi, 1954a: 3. Type species *Derostenus boops* Thompson, 1878: 266, by original designation. Synonymy with *Chrysocharis* by Graham, 1963.

Eidolampsis Delucchi, 1954a: 3. Type Species: *Entedon gemma* Walker, 1839:53, by monotypy. As subgenus of *Epilampsis* Delucchi.

Oxycharis Delucchi, 1954b: 286. Type species *Dendrostenus punctifrons* Thmopson, 1878:263, by original designation. As subgenus of *Chrysocharis* Foerster.

Trichocharis Delucchi, 1954b : 286. Type species *Chrysocharis pilosa* Delucchi, 1954b, by original designation. As subgenus of *Chrysocharis* Foerster.

Xenocharis Delucchi, 1954b: 286. Type species *Entedon syma* Walker, 1839:98, by original designation. [Subgenus *Chrysocharis* Förster].

Diagnosis: Female and Male: Length 0.7 – 3.0 mm. Usually with bright metallic refringence; antennal formula 11332 or 11342; third anellus usually larger than preceding two anelli; frontal fork present, either "Y" or "T" shaped; antennal torulus usually situated on lower frons, above level of ventral margin of eye; occiput weakly or strongly carinated, occasionally carina indistinct; mandible bidentate or tridentate or multidentate. Pronotum with or without a cross carina or ridge; mesoscutum reticulate; notauli rather wide, shallow and may or may not diffuse posteriorly; scutellum as long as wide or distinctly longer than wide; propodeum with or without a median carina or with a raised anchor or "Y" shaped structure; plicae and costulae absent; forewing

with CC with or without rows of ventral setae; speculum closed or open; PMV usually atleast 2x as long as STV. coxae reticulated. Petiole very short (hardly visible in some species) to 2.5x as long as wide with a smooth neck and raised surface; gaster of female elongated or oval shaped, usually with parallel sides and posteriorly pointed or rarely circular or subcircular in shape; male gaster narrow at base and widened posteriorly.

Hosts: Parasitic on larvae or pupae of insect leaf miners; one on gall midge; mostly primary parasites; rarely secondary parasites; a few are gregarious parasites (Hansson, 1985a).

Distribution: Holarctic, Oriental and Australian regions.

Remarks: Among Indian genera, *Chrysocharis* resembles *Achrysocharoides* Girault, *Chysonotomyia* Ashmead, *Closterocerus* Westwood, and *Neochrysocharis* Kurdjumov in general appearance but these genera differ from *Chrysocharis* as follows: *Achrysocharoides* differs from *Chrysocharis* in having the combination of characters viz. antenna with 3 discoid anelli; frons with "T" shaped frontal grooves; pronotum without collar; scutellum often with distinct groups of pits or longitudinal foveae overlapping each other and forewing broadly spatulate. *Chrysonotomyia* differs from *Chrysocharis* in having 1) antenna with 1 or 2 anelli; 2) funicle usually 2 segmented; 3) PMV always shorter than STV and 4) PMV usually with a dark spot extending from STV. *Closterocerus* differs from *Chrysocharis* in having scrobe extending slightly below toruli and 2) peg sensillae of flagellum always slanting. *Neochrysocharis* differs from *Chrysocharis* in having: 1) three apical segments of antenna fused; and 2) PMV never as long as STV.

Key to species of *Chrysocharis* of India and adjacent countries (Based on females)

1. PMV longer than STV2
- PMV shorter than STV or at the most as long as STV.....22
2. Funicle 4 segmented.....3
- Funicle 3 segmented.....5

3. Petiole longer than propodeum (19:12) (Fig. 20); legs pale white with brown at extreme base of fore and mid coxae and dark metallic patch at base of hind coxae; mesoscutum with a median fovea (Fig. 20) starting from scutoscuteellar groove and extending to near middle*C. neoviridis* Narendran & Razak sp. nov.
- Petiole and other characters partly or completely different.....4
4. Gaster broadly rounded at apex; scape 3.1x as long as wide; general body colour dark brown without metallic refringence...*C. funicularis* Khan
- Gaster oval and pointed at apex posteriorly; scape 5x as long as wide; general colour of head and mesosoma metallic bluish green or golden green or golden red or bluish violet or greenish blue..... *C. pallipes* (Nees)
5. Pronotum with a cross carina present.....6
- Pronotum with cross carina absent.....13
6. Propodeum (Fig. 2) with a very short (0.4x median length of propodeum) and weak median carina located between two pits at base; petiole hardly distinct; body metallic green *C. cuticisi* Narendran & Sureshan sp. nov.
- Propodeum not as above; petiole distinct; body colour variable.....7
7. Propodeum with median carina absent.....8
- Propodeum either with a median carina present or with an inverted "T" or "Y" shaped or anchor shaped structure9
8. Mesoscutum and scutellum each with a median longitudinal fovea or depression; F1 0.71x as long as F2; pedicel 1.71x as long as F1; body yellowish brown.....*C. longiclavatus* Khan, Agnihotri & Sushil
- Mesoscutum and scutellum without a median longitudinal fovea or depression; F1 0.91x as long as F2; pedicel 0.7x as long as F1; body dark brown with metallic refringence *C. longiscapus* Khan, Agnihotri & Sushil
9. Propodeum with a distinct wide median carina (Figs. 9, 15).....10
- Propodeum with an inverted "Y" or "T" shaped or anchor shaped structure11
10. Propodeum (Fig. 9) in median part with a strong carina in anterior part, becoming wider and weaker towards posterior margin of propodeum; clypeus with 2 yellowish spots on sides of oral fossa..... *C. euterpe* Hansson
- Propodeum (Fig. 15) with a wide strong and complete median carina; clypeus testaceous*C. lankaensis* Hansson
11. Pedicel 1.4x as long as F1; F2 longer than F1 (15:13); propodeum with anchor shaped or inverted "Y" or "T" shaped structure at anterior part, remaining region with several short longitudinal carinulae or with weak reticulation; scutellum as long as wide; raised surface of petiole 0.32 to 0.4x as long as propodeum; gaster 1.4-1.5x as long as wide.....*C. pentheus* (Walker)
- Pedicel shorter than alternate, other characters partly or completely different from above.....12
12. MV 2.3x as long as PMV; hind femur swollen, 0.6x as long as wide; petiole 3x as broad as long; F1, F2 and F3 1.5x as long as wide*C. imphalensis* Chisti & Shafee
- MV 3.2x as long as PMV; hind femur not swollen as above, petiole 0.9x as long as wide; F1 and F2 about 2x and F3 about 1.5x as long as wide*C. nitetis* (Walker)
13. Petiole 1.4 to 1.5x as long as propodeum; mesoscutum with a short median groove starting from scutoscuteellar groove towards middle of mesoscutum; frontovertex mostly smooth and shiny with metallic green or blue refringence [Fore and mid coxae pale whitish yellow; forewing with a row of 6 setae below CC; propodeum with a median carina absent; antennal funicle usually 4 segmented (which may look 3 segmented with F4 closely connected to clava)]*C. neosunosei* Narendran & Razak sp. nov.
- Petiole distinctly shorter than 1.4x length of propodeum; mesoscutum without a median groove; frontovertex and other characters variable14
14. Propodeum with a median carina absent.....18
- Propodeum with a median carina.....20
18. Propodeum with raised structure on anterior part as in Fig. 25; occipital margin with an edge or a low carina behind ocellar triangle *C. pubicornis* (Zetterstedt)
- Propodeum without such shaped structure1
19. Occipital margin with a strong and sharp carina along entire vertex and half way down temples (in part)..... *C. polyzo* (Walker)

- Occipital margin without a sharp edge or margin*C. differentis* Narendran & Sureshan sp.nov.
20. Petiole almost one-third length of gaster; legs pale yellow with bases slightly infuscated; PMV 3.75x as long as STV; pedicel 0.87x length of F1..... *C. indicus* Khan
- Characters not as in above combination, partly or completely different.....21
21. Dorsellum with a large subcircular pit (Fig. 12) medially; occipital ridge or carina hardly reaching behind eyes, strong only behind ocellar triangle, not reaching half way down temples; clava (including specula) 2.8x as long as F3; pedicel 0.75x as long as F1, 0.53x length of scape; MV 2.4x as long as PMV; petiole a little wider than long (Fig. 12)..... *C. harithi* Narendran & Razak sp.nov.
- Dorsellum without a large pit as above (Fig. 24); occipital margin with a strong and sharp carina along entire vertex and a half way down temples; clava including specula 1.47x as long as F3; pedicel 0.6x as long as F1, 0.4x length of scape; MV 3.5x PMV; petiole not wider than long (in part)..... *C. polyzo* (Walker)
22. PMV as long as STV; general body colour largely yellow; mesosoma dark greenish brown; gaster dark brown with base yellow; scape about 2.6x as long as broad (Fig.8)..... *C. echinata* (Mani)
- PMV shorter than STV; other characters different from above.....23
23. Lower margin of clypeus medially pointed (Fig.22) with a tooth; frontal fork "T" shaped; propodeum with raised anchor shaped structure (Fig. 23)..... *C. nitida* Hansson
- Lower margin of clypeus without a tooth; frontal fork "Y" shaped; propodeum with raised inverted "V" or "Y" shaped fold..... *C. zizyphi* Hansson

Note: The taxa are treated below in alphabetical order for convenience.

1. *Chrysocharis cuticisi* Narendran & Sureshan, sp.nov.
(Figs. 1-3)

Female (Holotype): Length 2.2 mm. Metallic green; frons below frontal fork violet with golden refringence; eyes and ocelli pale reflecting yellow; antenna brown, scape and pedicel darker; tegula

pale yellow; wings hyaline, veins brown; all coxae black with apices slightly pale; other segments of legs pale yellow; pubescence on body white.

Head: Width in anterior view 1.31x its height (21:16); width in dorsal view 2.3x as wide as long; ratio of eye height: malar space : mouth opening = 20:4:16; height of malar space equal to length of scape. POL 2x OOL (6:3); AOL a little longer than OOL (4:3); area above frontal fork with raised close reticulations; area below fork with reticulation weaker; frontal fork "Y" shaped; occipital margin with a weak edge. Antennal formula 11333; antenna inserted at level of ventral margin of eyes; relative L:W of antennal segments: scape = 40:8; pedicel = 13:8; F1 = 11:7; F2 = 13:9; F3 = 14:11; clava = 30:11.

Mesosoma: Pronotum with anterior cross carina present, 1.64x as wide as long with distinct raised reticulation; mesoscutum as long as scutellum; scutellum slightly longer than wide (40:39) with a pair of setae; dorsellum with weak reticulation at middle, more well reticulate at submedian part; propodeum with extremely short median carina (0.4x median length of propodeum) from base with a small pit on either side (Fig. 2); plicae absent; callus with 1 or 2 setae. Forewing 2x as long as wide; speculum closed behind by cubital line of setae; CC with 5-6 setae below in an irregular row; marginal fringe shorter than STV; relative length of CC = 17; SMV = 11; PSGA = 9; MV = 55; PMV = 22; STV = 9.

Metasoma: Petiole slightly visible from dorsal side, 5x as wide as long (10:2); gaster longer than mesosoma (27:20) but shorter than combined length of head plus mesosoma (27:29); gaster 2.1x as long as wide in dorsal view.

Male: Unknown

Material examined: Holotype Female, INDIA, Jammu & Kashmir, Ladakh, Nimmu near Kargil, 5.vii.2009. P.M. Sureshan (Deposited in DZUC pending transfer to ZSIK).

Host: Unknown.

Distribution: India (Jammu & Kashmir).

Etymology: The species name is an arbitrary combination of letters.

Remarks: This new species comes to *Chrysocharis elongata* (Thomson) in the key to species by Hansson (1985a.) but differs from *C. elongata* in having :1) malar space 0.7x as long as mouth opening (in *C. elongata* malar space 0.25x as long as mouth opening); 2) F1 to F3 equal in length and width (in *C. elongata* F1 to F3 unequal in length and width); and 3) MV 2.5x as long as PMV (in *C. elongata* MV 3.68x as long as PMV).

This new species comes to *Chrysocharis laomedon* (Thompson) in the key to species by Ikeda (1996) but differs from it in having: 1) fore coxa black (in *C. laomedon* fore coxa predominantly white); 2) malar space 0.25x as long as mouth opening (in *C. laomedon* malar space 0.13x mouth opening); 3) median carina of propodeum at base 0.4x median length of propodeum (in *C. laomedon* median carina of propodeum at base 0.31x as long as median length of propodeum); 4) propodeum without a median carina at posterior distal part (in *C. laomedon* propodeum with a short median carina at posterior distal part); and 5) POL 2x OOL (in *C. laomedon* POL equal to OOL).

2. *Chrysocharis differentis* Narendran & Sureshan, sp. nov.
(Figs. 4-7)

Female (Holotype): Length: 1.43 mm. Head, mesosoma and metasoma dark metallic green; eyes brownish yellow; ocelli pale reflecting yellow; antenna including scape black; wings hyaline with veins pale brown; all coxae concolorous with mesosoma; all femora dark brown or black with apices pale; tibiae and tarsi pale yellowish white; pubescence on body pale white.

Head: Width in anterior view 1.31x its height (17:13); width in dorsal view 2.2x its length (20:9); ratio of height of eye: malar space: mouth opening = 18:4:16; POL 2.5x OOL (5:2); AOL longer than OOL (3:2); area above and below of frontal fork with strong reticulation; frontal fork somewhat "T" shaped; occipital margin without sharp edge. Antennal formula 11332; antenna inserted slightly below level of ventral margin of eyes; relative L:W of antennal segments : scape = 38:8; pedicel 12:7; F1 = 12:7; F2 = 14:7; F3 = 12:7; clava = 27:7.

Mesosoma: Pronotum with cross carina absent; 2.2x (11:5) as broad as long, with distinct raised reticulation; mesoscutum shorter than scutellum (10: 12); scutellum slightly longer than wide (12:11), with a pair of setae; dorsellum with a weak reticulation; propodeum distinctly reticulate, median carina or "Y" or "T" or anchor shaped structures absent, with two transverse fovea at base medially; each callus with 2 setae. Forewing 2x as long as wide; CC without a row of setae on ventral side; speculum closed behind by cubital line of setae. Forewing 2x as long as wide; CC without a row of setae on ventral side; speculum closed behind by cubital line of setae; relative length of SMV = 12; MV = 52; PMV = 14; STV = 13.

Metasoma: Petiole 1.83x as wide as its length; gaster as long as mesosoma, 1.3x as long as wide (26:20).

Male: Unknown

Material examined: Holotype Female: INDIA, Jammu & Kashmir, Ladakh, Nimmu near Kargil, 5.iii.2001. P.M.Sureshan (Deposited in DZUC pending transfer to ZSIK). Paratype Female: INDIA, Himachal Pradesh (H.P.), Solan, Rabon, 18.iii.2009, S.B. Anis & T. Rehmat (ZDAMU).

Host: Unknown.

Distribution: India (Himachal Pradesh, Jammu & Kashmir)

Remarks: This species comes to *Chrysocharis amanus* (Walker) in the key to species by Hansson (1985a) but differs from that species in having : 1) antenna including pedicellus black (in *C. amanus pedicellus* white); 2) all coxae concolorous with mesosoma (in *C. amanus* mid coxa predominantly white and hind coxa varying from completely white to basal half dark and metallic with outer parts white to basal half dark and metallic with outer parts white); 3) frons below fork dark metallic green (in *C. amanus* frons below fork red or purple); 4) MV 3.71x as long as PMV (in *C. amanus* MV 2.5x as long as PMV); and 5) pedicel as long as F1 (in *C. amanus* pedicel 1.25x as long as F1). This new species does not fit to the key of Ikeda (1996) though it runs to couplet

number. 30, but differs greatly from *Chrysocharis submutica* Graham and *Chrysocharis albicoxis* Erdős.

3. *Chrysocharis echinata* (Mani) (Fig. 8)

Nesomyia echinata Mani, 1989: 1473. Holotype Female, India, Madras [=Chennai] (NZSI; lost?).

Chrysocharis echinata (Mani): Narendran & Sudheer, 2005: 11).

Diagnosis: (Based on Mani, 1989, and Narendran & Sudheer, 2005): Female: Length 1.5 mm. Body largely yellow; mesosoma dark greenish brown; gaster dark brown with base yellow; antennae dark brown except scape and pedicel yellow; head width in anterior view 1.16x its height in dorsal view; slightly wider than mesosoma; OOL subequal to POL; malar space about 0.45x eye length; antennal funicle 3 segmented, clava 2 segmented; relative L:W of antennal segments (as measured from Figure 359 of Mani, 1989): scape = 18:7 (in original description it is "about 2x as long as thick"); pedicel = 7:3; F1 = 9:3; F2 = 9:2; F3 = 8:3; clava (including spicula) 14:2 (in the original description it is stated that funicular segments 1-3 length ratio 10:9:8). Mesoscutum with fine reticulate squamous sculpture; notauli fading posteriorly; forewing (excluding marginal fringe) 2.6x as long as wide (as in figure 359b of Mani 1989) (in the original description L:W ratio 3:1); relative length of CC = 20; SMV = 27; parastigma = 4; MV = 26; PMV = 3; STV = 3 (Fig. 359B Mani 1989a). Gaster sessile, subequal to rest of body, globose-ovate.

Male: Similar to female except characters mentioned by Mani (1989).

Host: Reared from echinate galls on leaf of *Ficus bengalensis* Linn.

Distribution: India (Tamil Nadu).

Remarks: This is a unique species of *Chrysocharis* having reported from the galls of *Ficus bengalensis* Linn and in having PMV as long as STV and general body colour is predominantly yellow. The nature of antenna is also a little

unusual in the enlarged scape and elongated flagellum. Since the number of anelli is not clear from the description or figures I doubt whether this species is actually *Chrysocharis*. The antennae look like that of *Chrysonotomyia* Ashmead or *Obesulus* Boucek (1988) but to make sure the type has to be examined.

Dr. S. Sheela and Dr. P. Girish Kumar searched in the National collection of Zoological survey of India, Kolkata, the stated depository of the Holotype of *N. echinata*, and informed us that the type is not present in NZSI.

4. *Chrysocharis euterpe* Hansson (Fig. 9)

Chrysocharis euterpe Hansson, 1985b: 221-223. Holotype Female, Pakistan (BMNH)

Diagnosis: (Based on Hansson, 1985b) Female: Length 2.5 mm. Frons below fork yellowish green; frons above fork bluish green; clypeus metallic with 2 yellowish spots on sides of oral fossa; vertex yellowish green, tinged with blue; antenna brown except pale apical one-fourth of scape; mesoscutum and scutellum bluish green; propodeum same colour as of scutellum; wings hyaline; legs pale except dark metallic coxae. Antenna with F1 about 2.3x as long as wide; F2 about 2x as long as wide; F3 about 1.5x as long as wide. Head width 1.5x its height (90:60); POL 1.7x OOL when measured from Figure 6 of Hansson (1985b); pronotum with a strong carina along hind edge; surface behind carina smooth and shiny; scutellum slightly elongated and flattened. Forewing with speculum closed, SMV with a complete row of setae on under side; relative length of MV = 10; PMV = 2.6; STV = 1. Propodeum with a strong carina in anterior part, becoming wider and weaker towards posterior margin; also with a pair of short carinae ascending from the corners of petiolar foramen and with a carina between petiolar foramen and spiracle; each callus with 4 setae. Petiole a little wider than long (20:16). Gaster oval, a little longer than mesosoma.

Male: Unknown

Host: Lepidopterous leaf miner on *Hedera helix* (Hansson, 1985b).

Distribution: Pakistan (Mianadan).

Remarks: This species comes near *Chrysocharis lankaensis* Hansson in having propodeum with a median carina and with 3-4 setae on callus on either side but differs from *C. lankaensis* in having :1) propodeum with median carina expanding and weaker in posterior half (in *C. lankaensis* propodeum with a wide and complete median carina); and 2) clypeus metallic with 2 yellow spots (in *C. lankaensis* clypeus testaceous).

5. *Chrysocharis funicularis* Khan

Chrysocharis funicularis Khan, 1985: 380. Holotype Female, India (Uttar Pradesh) (GBP?)

Diagnosis (Based on Khan, 1985): Female: General body colour dark brown; scape with a yellowish strip at ventral side; metasoma light brown except petiole and basal end yellowish; legs light brown except dark brown hind coxae. Relative L:W of antennal segments (as measured from fig.10 of Khan, 1985). Scape = 46:15; pedicel 16:10; 1st anellus = 1:5; 2nd anellus = 1:5; F1 = 21:9; F2 = 24:10; F3 = 20:10; F4 = 20:11; clava = 29:10. Forewing more than 2x as long as wide; relative length of PMV = 44; STV = 18; distance between anterior margin of wing and stigma as long as height of stigma; petiole 0.21x length of gaster; gaster (excluding petiole) width subequal to its length; apex broadly rounded.

Host: *Phytomyza* sp. (Diptera: Agromyzidae)

Distribution: India (Uttar Pradesh)

Remarks: This species comes near *Chrysocharis pallipes* (Nees) in having funicle 4 segmented but differs from it in having: 1) gaster of female broadly rounded at apex (in *C. pallipes* gaster oval and pointed at apex posteriorly) and 2) scape 3.1x as long as wide (in *C. pallipes* scape 5x as long as wide).

6. *Chrysocharis harithi* Narendran & Razak, sp.nov. (Figs. 10-13)

Female Holotype: Length 1.76mm. Dark metallic green except the following: antenna black with slight metallic green refringence on scape and pedicel; wing hyaline with veins pale

brown; all coxae concolorous with mesosoma; femora concolorous with coxae except pale apical one-fourth; trochanters pale brown; fore and mid tibiae and tarsal segments pale yellow with a brownish tinge; hind tibia and first two basal hind tarsal segments pale white; third hind tarsal segment with a slight brownish tinge; fourth hind tarsal segment dark brown; all pretarsi dark brown; pubescence on body pale brownish yellow.

Head: Width in anterior view 1.4x its length; width in dorsal view 2.2x its length; ratio of height (in profile) of eye: height (in profile) of malar space: mouth opening (in anterior view) = 17:6:12. POL 2x OOL (8:4); AOL as long as OOL (4:4); frontal fork (Fig. 10) somewhat bent on sides; area below and above fork strongly reticulate; occiput sharply margined posteriorly behind posterior ocelli, extending weakly to margin behind eye. Antennal formula 11332; antenna inserted slightly above lower margin of eyes, the distance between level of lower margin of eyes and toruli being 0.2x distance between a torulus and eye margin; relative L:W of antennal segments (except anelli): scape = 17:7; pedicel = 9:7; F1 = 12:9; F2 = 12:9; F3 = 12:9; clava = 25:9.

Mesosoma: Pronotum with cross carina absent; mesosoma 1.5x as long as broad, with distinct raised hexagonal reticulations; mesoscutum a little shorter than scutellum (7:8); scutellum slightly longer than wide (8:7), with a pair of setae; dorsellum with a median subcircular, large (Fig.12) pit with reticulate sculpture inside; propodeum with a distinct median carina (Fig.12), submedian part shiny but with weak reticulation; each callus with 2 setae; forewing 2.1x as long as wide (Fig.13), speculum closed behind by cubital line of setae; CC without rows of setae on underside; relative length of CC = 27; SMV = 21; MV = 48; PMV = 20; STV = 8.

Metasoma: Petiole as long as wide (Fig. 12); metasoma slightly shorter than mesosoma (34:33); gaster (excluding petiole) 1.45x as long as wide (29:20).

Male: Similar to female except antenna with a longer setae and metasoma distinctly shorter than

mesosoma (26:21). *Variation*: Length varies from 1.5 to 1.8mm.

Material examined: Holotype Female: INDIA, Jammu & Kashmir, Srinagar, April 2008, ex. Agromyzidae, Nakeer Razak. Paratypes: 10 Females, 5 males with same data as Holotype. (Holotype and paratypes in ZSIK).

Host: ex Undetermined Agromyzidae (Diptera).

Distribution: India (Jammu & Kashmir).

Remarks: This new species comes to *Chrysocharis pubicornis* (Zetterstedt) in the key to species by Hansson (1985a) and Ikeda (1996) but differs from *C. pubicornis* in having: 1) propodeum with a straight and complete median carina (in *C. pubicornis* propodeum with anchor or "Y" shaped structure in anterior median part); 2) median part of dorsellum with a large pit (in *C. pubicornis* median part of dorsellum with no such pit) and 3) MV 2.4x as long as PMV (in *C. pubicornis* MV 3.4x as long as PMV).

7. *Chrysocharis imphalensis*

(Chishti & Shafee)

(Fig. 14)

Pediobius imphalensis Chisti & Shafee, 1988: 21. Holotype Female, India (ZDAMU) [examined]

Chrysocharis imphalensis (Chisti & Shafee): Hayat *et al.*, 2005: 21.

Redescription: Female: 1.9mm. Head dark with bluish green refringence; antenna dark except basal half of scape light yellow; mesosoma dark with metallic bluish green refringence; legs dark except base and apical three-fourths of mid and hind tibiae, mid longitudinal band on fore tibia and basal four tarsal segments light yellow; metasoma dark with metallic refringence.

Head: Width in anterior view 1.39x its height; frons with "Y" shaped frontal fork; POL 1.33x OOL (4:3); AOL half of POL (2:4). Relative ratio of mouth: malar space: eye height = 12:5:18. Relative L: W of antennal segments: scape = 40:9; pedicel = 15:8; first anellus = 1:4; second anellus = 1:3; third anellus = 5:8; F1 = 15:10; F2 = 15:10; F3 = 15:10; clava (including spicula): 27:10.

Mesosoma: Pronotum with cross carina distinct; mesoscutum and scutellum distinctly punctate with interstices carinate; scutellum slightly longer than its width (15:14); propodeum with anchor shaped structure anteromedially. Forewing 2.05x as long as its width (80:39); speculum closed behind by setae; relative L:W of CC = 17; SMV = 11; parastigma = 6; MV = 30; PMV = 13; STV = 5; CC without rows of setae below.

Metasoma: About as long as mesosoma; petiole half as long as wide (3:6) ratio of length of petiole: gaster (excluding petiole) = 3:53; gaster length 1.6x its width in dorsal view (53:34); ovipositor sheaths: gaster length = 6:53.

Male: Unknown.

Material examined: Holotype.

Host: Unknown

Distribution: India (Manipur: Imphal)

Remarks: This species comes near *Chrysocharis nitetis* (Walker) in general appearance but differs from it in having hind femur swollen, 0.6x as long as wide (in *C. nitetis* hind femur shorter than 0.6x as long as wide). This species resembles *Chrysocharis nautius* (Walker) in having hind femur stout but differs from it in having: 1) MV 2.3x as long as STV (in *C. nautius* MV 7.8x as long as STV); PMV 2.6x as long as STV (in *C. nautius* PMV 2.1x as long as STV) and eye height 1.2x width of mouth (in *C. nautius* eye height 2x width of mouth).

8. *Chrysocharis indicus* Khan

Chrysocharis indicus Khan, 1985: 376. Holotype Female, India (NZSI?; lost?)

Diagnosis (Modified from Khan, 1985): Female: Length 1.52 mm. Head and mesosoma dark brown with greenish refringence; antenna light brown except scape yellowish with slight infuscation at apex; gaster dark brown with metallic bluish green refringence; wings hyaline; legs pale yellow except bases of coxae slightly infuscated; without any infuscation. Head width in anterior view 1.5x its height; mandibles bidentate; relative L:W of antennal segments = scape = 37:7; pedicel = 12:7; first anellus = 1:4; second anellus = 1:4; third anellus = 5:5; F1 = 16:5; F2 = 15:6; F3 = 13:7; clava = 26:7.

Pronotum without cross carina; scutellum with a single pair of setae; propodeum smooth, median and lateral carinae present (but not shown in figure 4 of propodeum by Khan, 1985); forewing hyaline, 2x as long as wide; relative length of CC = 24; SMV = 15; parastigma = 5; MV = 36; PMV = 14; STV = 4. Gaster longer than mesosoma (excluding petiole); petiole one-third length of gaster; ovipositor sheaths not visible.

Male: Resembles female except in proportion of antennal segments. (see Khan, 1985).

Host: Phytomyza sp. (Diptera: Agomyzidae).

Distribution: India (Uttar Pradesh).

Remarks: This species comes near *Chrysocharis polyzo* (Walker) in having propodeum with a median carina, petiole distinctly shorter than 1.4x length of propodeum and pronotum without a cross carina. However it differs from *C. polyzo* in having: 1) MV 2.6x as long as PMV (in *C. polyzo* MV 3.5x as long as PMV); 2) PMV 3.5x STV (in *C. polyzo* PMV 2.6x as long as STV); 3) Head and mesosoma dark brown with greenish refringence (in *C. polyzo* head and mesosoma metallic blue or green); 4) propodeum with median and lateral carinae present (in *C. polyzo* with lateral carinae absent); and 5) anteromedian part of propodeum without a median fovea (in *C. polyzo* anteromedian part of propodeum with a triangular fovea bordered by sharp edge).

9. *Chrysocharis lankaensis* Hansson
(Fig. 15)

Chrysocharis lankaensis Hansson, 1985b. 223-224.
Holotype Female, Sri Lanka (LUZN).

Diagnosis: Female (Based on Hansson, 1985b): Length 2.5 mm; frons below frontal fork yellowish green; frons above fork greenish yellow; clypeus testaceous; vertex outside ocellar triangle bluish green, inside triangle greenish yellow; antenna brown except pale scape (with tip brownish); mesoscutum, scutellum and propodeum yellowish green; forewing with median fuscous spot; all coxae dark and metallic, remaining parts of legs pale; pronotum with a strong and sharp carina along hind edge;

propodeum with a wide, strong and complete median carina; each callus with 3 setae; petiole shorter than median length of propodeum (20:26), 1.25x as long as its width; ratio of mesosoma/gaster 1.10.

Male: Unknown

Host: Unknown

Distribution: Sri Lanka (Central Province).

Remarks: This species comes near *Chrysocharis albipes* (Ashmead) in the key to Palearctic species by Hansson (1985a) but differs from it in having: clypeus smooth without striations (in *C. albipes* clypeus with longitudinal striations and 2) propodeal callus with 3 setae (in *C. albipes* propodeal callus with 2 setae).

10. *Chrysocharis longiclavatus* Khan,
Agnihotri and Sushil

Chrysocharis longiclavatus Khan, Agnihotri & Sushil,
2005: 94. Holotype Female (GBP? or NPC?)

Diagnosis (modified from Khan *et al.*, 2005): Female: Length "about 1.26 mm"; head and body yellowish brown; antenna dark brown except very slight infuscation at basal part of scape; fore and hind coxae brown; mid coxa yellow; fore and mid femora brown with apex pale; all fore tarsal segments and last two hind tarsal segments brown; mid leg completely and remaining segments of all legs yellow. Frontal fork "Y" shaped; antennal formula 11332; scape not reaching level of anterior ocellus; relative L:W of antennal segments : scape = 61:14; pedicel = 30:13; first anellus = 1:5; second anellus = 1:6; third anellus = 6:8; F1 = 16:11; F2 = 22:12; F3 = 21:14; clava including spicula:14. Pronotum with cross carina present; mesoscutum and scutellum with two pairs of setae on each; propodeum smooth, median carina and plicae absent; forewing 2.48x as long as wide; maximum length of mv as long as STV; relative length of MV = 39; PMV = 13; STV = 6; speculum closed behind; petiole L:W = 5:8; gaster (excluding petiole) longer than mesosoma.

Male: Unknown

Host: Unknown

Distribution: India (Uttarakhand).

Remarks: This species comes near *C. longiscapus* Khan, Agnihotri & Sushil in the key to species given in this paper but differs from *C. longiscapus* in having: 1) mesoscutum and scutellum with a median longitudinal fovea or depression (in *C. longiscapus* mesoscutum and scutellum without such a fovea or depression); 2) F1 0.71x as long as F2; (in *C. longiscapus* F1 0.91x as long as F2); 3) pedicel 1.71x as long as F1 (in *C. longiscapus* pedicel 0.7x as long as F1); and 4) body yellowish brown (in *C. longiscapus* body dark brown with metallic refringence).

11. *Chrysocharis longiscapus* Khan
Agnihotri and Sushil

Chrysocharis longiscapus Khan, Agnihotri and Sushil, 2005: 92-95. Holotype Female, India (GBPU? or NPC?)

Diagnosis: (Modified from Khan *et al.*, 2005): Female: Length 1.65mm. Dark brown with metallic refringence; antenna brown except scape yellow with apex slightly brown; mesosoma dark brown; gaster brown; legs yellow except brownish black basal half of hind coxa. Head with frontal fork "Y" shaped; POL slightly longer than OOL; antennal formula 11332; relative L: W of antennal segments: scape = 46:7; pedicel = 16:9; first anellus 1:4; second anellus 1:5; third anellus 8:7; F1 = 23:12; F2 = 24:12; F3 = 24:11; clava = 36:11. Mesoscutum 1.4x as long as scutellum; scutellum slightly wider than long (18:16) with 2 pairs of setae; propodeum with median carina and plicae absent, smooth; forewing 2.1x as long as wide; relative length of MV = 49; PMV = 13; STV = 6. Gaster longer than mesosoma; petiole long.

Male: Unknown

Host: ex leaf miner

Distribution: India (Uttar Pradesh)

Remarks: As pointed out under remarks of *C. longiclavatus* this species differs from that species in having: 1) mesoscutum and scutellum without longitudinal fovea or depression (in *C. longiclavatus* mesoscutum and scutellum with longitudinal fovea or depression present); 2) F1 0.91x as long as F2 (F1 0.71x as long as F2 in *C. longiclavatus*); 3) pedicel 0.7x as long as F1 (in *C. longiclavatus* pedicel 1.71x as long as F1 0 and 4)

body dark brown with metallic refringence (body yellowish brown in *C. longiclavatus*).

12. *Chrysocharis neosunosei* Narendran
& Razak, sp.nov.
(Figs. 16-18)

Female Holotype: Length: 1.71mm. Head, mesosoma and metasoma metallic greenish blue; scape pale yellow with apical one-fourth dark brown, particularly on posterior part; remaining antennal segments dark brown; eyes black with margins around pale grey; wings hyaline and veins pale brown; fore and mid legs including coxae pale whitish yellow; hind coxa concolorous with mesosoma, remaining segments pale whitish yellow except pale brown fourth tarsal segment and pretarsus..

Head: Width in anterior view 1.1x (35:32) its length; width in dorsal view 2.8x (34:12); ratio of eye height: malar space: mouth opening = 26:6:12. POL 2x OOL (6:3); AOL longer than OOL (4:3); frontal fork "Y" shaped; area below and above frontal fork and vertex smooth and shiny; occipital margin sharp behind hind ocelli, becoming weak or obsolescent near eyes; relative L:W of antennal segments: scape = 40:9; pedicel = 13:8; F1 = 18:7; F2 = 16:9; F3 = 15:8; F4 = 14:8; clava = 15:6; clava with spicula present.

Mesosoma: Pronotum without cross carina; mesosoma 1.5x as broad as long, with raised reticulation; mesoscutum with a short shallow median fovea as in the Australian *Pleurotropopseus* Girault; scutellum a little longer than mesoscutum (18:16), with a pair of setae; scutellum reticulate with admarginal area smooth and shiny; dorsellum medially with a narrow tongue - like projection (Fig.17), with a raised fovea bordered by sharp edge on anterior part of propodeum; median part of propodeum reticulate, sides smooth and shiny; each callus with 3 setae. Forewing 2.14x as long as wide (98:46); speculum closed behind by cubital line of setae; CC with a row of 6 setae beneath wing; relative length of MV = 53; PMV = 22; STV = 6.

Metasoma: as long as mesosoma; petiole longer than propodeum (20:14) with strong raised reticulations; gaster 1.55x as long as wide (65:42).

Male: Unknown

Material examined: Holotype Female, INDIA: Kashmir, May 2009, Nakeer Razak. Deposited in DZUC pending transfer to ZSIK or NZSI)

Host: Undetermined Agromyzidae (Diptera).

Distribution: India (Jammu & Kashmir).

Remarks: This species comes near *Chrysocharis sunosei* Kamijo in the key to species of Hansson (1985a) and Ikeda (1996) but differs from *C. sunosei* in having: 1) eyes bare (in *C. sunosei* eyes pubescent); 2) inner orbits straight (in *C. sunosei* inner orbits strongly sinuate); 3) height of malar space 0.23x height of eye (in *C. sunosei* height of malar space 0.12 – 0.14x height of eye); 4) propodeum with median carina absent (in *C. sunosei* propodeum with median carina present); 5) propodeum with median area reticulate, sides smooth and shiny (in *C. sunosei* propodeum with median area smooth and shiny); 6) PMV 3.7x as long as STV (in *C. sunosei* PMV 2 – 2.4x as long as STV); 7) frons above and below fork smooth and shiny without reticulation (in *C. sunosei* frons above fork smooth but reticulated with low narrow septae in some places); 8) frons above fork green (in *C. sunosei* frons above fork golden green); 9) F3 1.9x as long as wide (in *C. sunosei* F3 1.3 – 1.5x as long as wide); 10) clava 1.93x as long as F3 (in *C. sunosei* clava 1.63 to 1.83x as long as F3); and 11) mesoscutum with a median short fovea starting from scutoscuteellar sulcus to one-third distance towards anterior side (in *C. sunosei* mesoscutum without any such fovea).

13. *Chrysocharis neoviridis* Narendran & Razak, sp. nov.
(Figs. 19 -21)

Female Holotype: Length 1.56mm. Head, mesosoma and metasoma dark metallic green with bluish tinge; scape pale white; pedicel brown, remaining segments dark brown; wings hyaline, veins pale brown; legs pale white with brown patch at extreme base of fore and mid coxae and dark metallic patch at base of hind coxae.

Head: Width in anterior view 1.2x (37:31) its height; width in dorsal view 1.8x (34:18) its length; ratio of height of eye: malar space: and mouth

opening = 22:4:12; POL 1.5x OOL (6:4); AOL as long as OOL; area above frontal fork faintly reticulate on parascrobal part and on area below toruli; frontal fork "T" shaped; occipital margin sharply edged behind hind ocelli but not extending to posterior part of eye; vertex smooth with faint reticulation. Antennal formula 11342; antenna inserted a little (distance between antennal insertion and level of ventral margin of eye equal to diameter of a toruli) above level of ventral margin of eye; relative L: W of antennal segments: scape = 49:8; pedicel = 16: 9; F1 = 21:12; F2 = 20:11; F4 = 17:10; clava = 21:8.

Mesosoma: Pronotum with cross carina absent; mesosoma 1.4x as long as broad (22:16), with distinct raised reticulation, mesoscutum shorter than scutellum (8:12), with a short (reaching middle of mesoscutum from scutoscuteellar line) median groove (slightly longer than that of *C. neosunosei*); scutellum as long as broad, with a pair of setae; scutellum with raised reticulation in median part, smooth and shiny on admarginal area; dorsellum medially with a narrow tongue like projection (Fig. 20) with a raised fovea on anterior part of propodeum; propodeum with a weak broken median carina; sub median part smooth and shiny; each callus with 5 setae. Forewing 2.1x as long as wide (91:44), without a row of setae below CC; speculum closed behind by cubital line of setae; relative length of MV = 42; PMV = 16; STV = 4.

Metasoma as long as mesosoma; petiole longer than propodeum (Fig.20) with raised reticulation with a tooth at each side; gaster 1.2x as long as broad (42:36)

Male: Similar to female except shorter gaster.

Material examined: Holotype Female, INDIA, Jammu & Kashmir, Barjulla, June 2009. Nakeer Razak. Paratypes: 6 females and 4 males of same data of Holotype. 1 Female, Kashmir, Pulwarna, August, 2009, Nakeer Razak. [Holotype and paratypes in ZSIK]

Host: ex Agromyzidae (Diptera)

Distribution: India (Jammu & Kashmir).

Remarks: This new species closely resembles *Chrysocharis viridis* (Nees) in similar colour of

body and in the structure of propodeum but differs from *C. viridis* in having: 1) mesoscutum with a median groove posteriorly (in *C. viridis* mesoscutum without such a median groove); 2) height of malar space 0.18x eye height (in *C. viridis* malar space 0.13x eye height); 3) MV 2.6x PMV (in *C. viridis* MV 3.44x PMV) and 4) petiole longer than propodeum (in *C. viridis* petiole not longer than propodeum).

14. *Chrysocharis nitetis* (Walker)

Entedon nitetis Walker, 1839: 52, Lectotype Female (designated by Graham, 1963), England (BMNH).

Entedon novellus Walker, 1839: 55, Lectotype Female (designated by Graham, 1963), England (BMNH).
Synonymy with *C. nitetis* by Askew & Coshan, 1973. *Derostenus boops* Thompson, 1878: 266. Lectotype Female (designated by Hansson, 1985a), (LUZN). Synonymy with *C. nitetis* by Boucek & Askew, 1968.

Chrysonotomyia elegantissima Girault, 1917: 20. Female, USA (USNM). Synonymy with *C. nitetis* by Hansson, 1987.

Chrysocharis (Kratochviliiana) milleri Yoshimoto, 1973: 1327-1328. Holotype Female Canada (CNC). Synonymy with *C. nitetis* by Hansson, 1987.

Diagnosis: (Based on Hansson, 1985a): Female Length: 1.3–2.4mm. Frons below frontal fork golden green or red; frons above frontal fork blue with or without golden green in lower part; vertex golden green; antenna dark except pale apex (except dark tip); mesoscutum, scutellum and propodeum metallic greenish blue, bluish violet or golden green; fore and mid coxae dark brown with weak reticulation; hind coxa dark metallic; fore leg with tarsus pale brown; femur with or without dark brown; mid and hind femora usually completely (predominantly) dark; remaining parts of legs pale; forewing with or without a pale fuscous spot. F1 and F2 about 2x and F3 about 1.5x as long as wide; scutellum usually flattened; anteromedian part of propodeum with a raised and relatively strong "anchor" or "Y" shaped structure. Petiole slightly shorter than broad (7:8), 0.7x as long as median length of propodeum; gaster shorter than mesosoma.

Male: Length 1.3–1.6mm. Scape dark and wider than in female. Funicular segments about 2x as long as wide. (For further comments see Hansson, 1985a).

Hosts: Solitary parasitoid of Coleoptera (Chrysomelidae and Curculionidae); Diptera (Agromyzidae); Hymenoptera (Tenthredinidae); Lepidoptera (Coleophoridae, Eriocraniidae, Gracillariidae, Heliozetidae, Lyonetidae, Nepticulidae, Tischeriidae, and Yponomeutidae). Secondary parasitoid of Hymenoptera (Braconidae & Eulophidae) (Noyes, 2012).

Distribution: India (Kashmir, Srinagar) (Hansson, 1985b)

Remarks: This species comes near *Chrysocharis pentheus* (Walker) in the key to species by Hansson (1985a) but differs from it in having: 1) raised surface of petiole about half as long as propodeum (in *C. pentheus* raised surface of peiole atmost 0.38x as long as propodeum); 2) petiole with strong sculpture (in *C. pentheus* petiole with weak sculpture); and 3) mid and hind femora predominantly dark (in *C. pentheus* fore and hind femora white). According to Ikeda (1996) *C. nitetis* is similar to *C. nautius* (Walker) but differs from it in having slender hind femur (less than 0.33x its length) whereas in *C. nautius* hind femur stout and its width 0.33x its length); and 2) reticulation on mesoscutum and on vertex with low, narrower septae (in *C. nautius* reticulation on mesoscutum and vertex with very high and very wide septae). This species comes near *C. imphalensis* in the key given in this paper, but differs from it by having :1) Hind femur slender much less than 0.6x as long as wide)(in *C. imphalensis* hind femur 0.6x as long as wide); 2)MV 3.2x as long as PMV (in *C. imphalensis* MV 2.3x as long as PMV); 3) petiole 0.9x as long as wide (in *C. imphalensis* petiole 3x as long as broad); and 4) F1 and F2 about 2x and F3 about 1.5x as long as wide (in *C. imphalensis* F1,F2 and F3 1.5x as long as wide).

15. *Chrysocharis nitida* Hansson (Figs, 22-23)

Chrysocharis nitida Hansson, 1985b: 220–221. India (BMNH).

Diagnosis: (Based on Hansson, 1985b). Female: Length 1.8 mm. Frons below fork yellowish green; frons above fork bluish violet; vertex yellowish green; clypeus and face metallic greenish yellow; antenna dark except pale scape. Mesoscutum and scutellum yellowish green; fore coxa predominantly pale, with base dark; mid coxa brownish with a weak metallic tinge and with pale outer parts; hind coxa completely dark and metallic; remaining parts of legs pale with claws darkened; wings hyaline without dark infuscation. Lower margin of clypeus with pointed tooth; clypeus smooth and shiny with very smooth wrinkles; frontal fork "T" shaped; pronotum with a cross carina; propodeum with a raised anchor-shaped structure on anterior median part; area below anchor with smooth sculptures, otherwise smooth and shiny; petiole wider than long (10:8); forewing with STV longer than PMV (24:10). Gaster a little shorter than mesosoma (1:0.95)

Male: Unknown

Hosts: Leaf miner of Sorghum (Hansson, 1985b)

Distribution: India (Andhra Pradesh)

Remarks: According to Hansson (1985b) *C. nitida* can be easily distinguished from all species of *Chrysocharis* by the shape of clypeus, and by the anchor shaped structure on the propodeum.

16. *Chrysocharis pallipes* (Nees)

Elachestus (sic) pallipes Nees 1834: 138-139. Stuttgart, Germany (Boucek and Askew, 1968, placed it under 'incertae sedis').

Eachertus pallipes Nees: Schmiedeknecht, 1909: 36 Brussels (valid species)

Entedon lycambes Walker, 1839: 21. Lectotype Male, (designated by Hansson, 1985a), England (BMNH). Synonymy with *Chrysocharis chilo* Walker by Boucek & Askew, 1968, and with *Chrysocharis pallipes* by Graham, 1993).

Chrysocharis petiolata Forster, 1861: 38. Switzerland. (type lost). Synonymy with *C. allipes*; Graham, 1993).

Entedon chilo Walker, 1839: 63-64. Lectotype Female, (designated by Hansson, 1985a),

England (BMNH). Synonymy with *C. pallipes* by Graham, 1993. *Entedon alphenus* Walker, 1839: 64. Lectotype Female, (designated by Hansson, 1985), England (BMNH). Synonymy with *C. chilo* by Boucek & Askew, 1968 and with *C. pallipes* by Graham, 1993. *Entedon parmys* Walker, 1839: 71. Lectotype Female, (designated by Hansson 1985a), England, (BMNH). Synonymy with *C. chilo* by Boucek & Askew, 1968, and with *C. pallipes* by Graham, 1993. *Derostenus petiolatus* Thompson, 1878: 264. Lectotype Female, (designated by Hansson, 1985a), Sweden (LUZN). Synonymy with *C. pallipes* by Graham, 1993.

Chrysocharis pallipes (Nees): Graham, 1993: 221-230.

Diagnosis: Female. Length 1.6 -2.4 mm. Frons metallic bluish-green, golden green or golden red; vertex golden green; mesoscutum and scutellum golden green or metallic greenish blue or bluish violet; fore and mid coxae varying from completely pale to completely brown; hind coxa dark and metallic; remaining parts of legs white or pale yellow. Frons with somewhat "T" shaped frontal fork. Antennal formula 11341; scape 7x as long as wide (37:7); pedicel shorter than F1 (13:17); first anellus 4x as wide as long (4:1); second anellus L:W = 0.75:5; third anellus L:W = 4:5; F1 = 17:8; F2 = 17:8; F3 = 18:8; F4 = 15:7; clava L:W = 18:6. Pronotum with cross carina absent; propodeum smooth and shiny, with a complete or incomplete median carina; petiole longer than propodeum; gaster oval shaped; mean ratio length of mesosoma/gaster 1.15+/0.099 (n.11) (Hansson, 1985a).

Male: Length 1.5-2.3mm. For differences with female see Hansson (1985a).

Material examined: 10 Females, 5 males, INDIA, Karnataka, Puttur, xi. 2011. Collector Unknown.

Host: Diptera (Agromyzidae, Drosophilidae, Ephydridae, Scatophagidae); Lepidoptera (Gracillaridae, Nepticulidae) (Noyes, 2012).

Distribution: Palearctic (Europe); Oriental: India (new record), Nepal, People's Republic of China, Taiwan, Nearctic (USA).

Remarks: This species comes very near *Chrysocharis pubens* Delucchi and *Chrysocharis pilosa* Delucchi in having : 1) petiole longer than propodeum, 2) pronotal collar without cross carina; 3) CC with a complete row of setae on underside; and 4) female antennal formula = 11341. However *C. pallipes* differs from these two species in having : 1) clava at least 1.1x (mostly longer) as long as F1 (clava almost 2x as long as F1 in the two species) and 2) female eye about 4.5x as high as malar space (in the latter 2 species female eye 6.5x as high as malar space)

17. *Chrysocharis pentheus* (Walker)
(Figs. 26-28)

Entedon penthius Walker, 1839: 38. Lectotype male (designated by Graham, 1963), England (BMNH)

Entedon ergetelis Walker, 1848: 230. Lectotype Female (designated by Graham, 1963) England (BMNH).
Synonymy with *C. penthius* by Graham, 1963.

Epilampsis mirabilis Sundby, 1957:40. Lectotype Female (designated by Graham, 1963), England (BMNH).
Synonymy with *C. pentheus* by Graham, 1963.

Chrysocharis aquilegiae Erdos, 1961: 479. Holotype Female, Hungary (HNHM). Synonymy with *C. pentheus* by Hansson, 1985a.

Chrysocharis pentheus (Walker): Graham, 1963: 223.

Redescription: Plesiotype: Female: Length 1.5mm. Dark Metallic green. Antennal flagellum and pedicel dark brown; scape pale white; coxae concolorous with mesosoma except pale apex; remaining segments pale white; wings hyaline, veins pale brown; pubescence pale yellow.

Head: Width in anterior view slightly wider than long (30:28); width in dorsal view 2.1x its length; Height of eye: malar space: mouth opening = 21:4:11; POL 2x OOL; AOL longer than OOL (4:3); frontal fork "Y" shaped; area below and above frontal fork and on vertex with raised reticulation; occiput not margined; antennal formula 1132; antennae inserted at level of ventral margin of eyes; relative L:W of antennal segments: scape = 45:9; pedicel = 18:11; F1 = 13:10; F2 = 15:10; F3 = 13:11; clava 29:10.

Mesosoma: Pronotum with cross carina absent; mesoscutum a little shorter than scutellum (9:10), mesosoma 1.9x as broad as long (17:9) with raised reticulation; scutellum as long as wide, with a pair of setae, with raised reticulation; dorsellum with longitudinal carinulae (Fig. 26); propodeum with an anchor shaped structure on anteromedian part; area posterior to the anchor shaped structure with several longitudinal carinulae and longitudinal reticulation (Fig. 26), each callus with 2 setae. Forewing 2.1x as long as wide; CC with 3 or 4 setae in a row from base to near middle beneath; relative length MV = 37; PMV = 12; STV = 5; speculum closed behind by cubital line of setae.

Metasoma: 1.2x as long as mesosoma, total length of petiole 0.76x length of propodeum; gaster 1.54x (86:56) as long as broad.

Male: See Hansson (1985a).

Variation: In the redescription provided by Hansson (1985a) the funicular segments are stated as 2x as long as wide but in the specimen we have the F1, 1.3x, F2 1.5x, and F3 1.1x as long as wide. The colour of frons more darker.

Hosts: Parasites of Agromyzidae (Diptera) and occasionally other leaf mining Lepidoptera.

Distribution: Palearctic, Nearctic, Neotropical and Oriental regions.

Remarks: This species comes near *Chrysocharis nitetis* (Walker) in the key to species by Hansson (1985a) and Ikeda (1996) but differs from it in having: 1) raised surface of petiole 0.32 to 0.4x as long as propodeum with weak sculpture or completely smooth (in *C. nitetis* raised surface of petiole about 0.5x as long as propodeum with strong sculpture) and 2) mid and hind femora white (in *C. nitetis* mid and hind femora predominantly dark).

18. *Chrysocharis polyzo* (Walker)
(Fig. 24)

Entedon polyzo Walker, 1839: 40. Lectotype Female (designated by Hansson, 1985a), England (BMNH)

Entedon acerbas Walker, 1839: 40. Lectotype Female (designated by Hansson, 1985a), England (BMNH).
Synonymy with *C. polyzo* by Graham in Boucek & Askew, 1968. *Entedon enephes* Walker, 1839:67. Lectotype Female (designated by Hansson, 1985a),

England (BMNH). Synonymy with *C. polyzo* by Boucek and Askew, 1968. *Omphale plaustris* Goureaux, 1851: 137. Lectotype Female? France (ORST).

Synonymy with *C. polyzo* by Boucek & Askew, 1968. *Chrysocharis plana* Delucchi, 1954a:7. Holotype Female Germany (ETHZ). Synonymy with *C. polyzo* by Boucek & Askew, 1968. *Chrysocharis depressa* Delucchi, 1954a: 8. Holotype Female, Germany (ETHZ). Synonymy with *C. polyzo* by Boucek & Askew, 1968. *Chrysocharis polyzo* (Walker): Graham, 1959:195.

Diagnosis: (Based on Hansson, 1985a): Female Length 1.5–2.5mm. Frons above frontal fork metallic blue or bluish violet; vertex metallic bluish green or golden green; scape colour varying from entirely dark to pale; mesoscutum and scutellum metallic bluish violet green or violet; all coxae dark metallic; remaining segments pale (fore tibia sometimes darkened). Occipital margin with a strong carina along entire vertex and half way down temples; antennal formula 11332; relative L:W of antennal segments (From Fig. 45, Hansson,1985a) = Scape = 38:7; pedicel = 12:6; F1 = 20:9; F2 = 18:11; F3 = 17:11; Clava = 25:11. Anteromedian part of propodeum (Fig. 24) with a triangular fovea bordered by sharp edge, propodeum weakly or strongly reticulate; relative length of MV = 9.2; PMV = 2.6; STV = 1.0. Petiole wider than long or longer than wide; gaster shorter than mesosoma, oval-shaped.

Male: See Hansson (1985a).

Host: Diptera:Agromyzidae. Lepidoptera: Gracillariidae (Hansson, 1985a, and Noyes, 2012).

Distribution: widely distributed in Palearctic region; Oriental region (India).

Remarks: This species comes near *Chrysocharis liriomyzae* Delucchi in the key to species by Hansson, (1985a) but differs from it in having: 1) no outgrowth between toruli (in *C. liriomyzae* with an outgrowth between toruli); 2) arms of frontal fork not raised as a carina (in *C. liriomyzae* arms of frontal fork raised to form a carina); 3) raised surface of petiole with strong sculpture, shape trapezoid, quadrate or rectangular with protruding corners (in *C. liriomyzae* petiole with raised surface punctated, about as long as wide with

anterior part semicircular) and 4) propodeal callus with 3-4 setae (in *C. liriomyzae* propodeal callus with 2 setae).

19. *Chrysocharis pubicornis* (Zetterstedt) (Fig. 25)

Entedon pubicornis Zetterstedt, 1838: 427. Male, Sweden (LUZN) *Entedon punctellus* Zetterstedt, 1838: 431. Male, Sweden (LUZN). Synonymy with *C. pubicornis* by Graham in Boucek & Askew, 1968.

Entedon amyrtaeus Walker, 1839: 58. Lectotype Female (designated by Hansson, 1985a) England (BMNH). Synonymy with *C. pubicornis* by Boucek & Askew, 1968.

Entedon cydon Walker, 1839: 58. Lectotype Female (designated by Hansson, 1985a) England (BMNH). Synonymy with *C. pubicornis* by Boucek & Askew, 1968.

Entedon aesopus Walker, 1839: 74. Lectotype Male (designated by Hansson, 1985a) England (BMNH). Synonymy with *C. pubicornis* by Hansson, 1985a.

Entedon eropus Walker, 1839: 75. Lectotype Male (designated by Hansson, 1985a) England (BMNH). Synonymy with *C. pubicornis* by Graham in Boucek & Askew, 1968.

Entedon syma Walker, 1839: 98. Lectotype Female (designated by Hansson (1985a) England (BMNH). Synonymy with *C. pubicornis* by Graham, 1959.

Entedon hersilia Walker, 1840: 235. Lectotype Male (designated by Hansson, 1985a) England (BMNH). Synonymy with *C. pubicornis* by Graham in Boucek & Askew, 1968.

Entedon adreus Walker, 1848: 231. Lectotype Male (designated by Hansson, 1985a) England (BMNH). Synonymy with *C. pubicornis* by Hansson, 1985a.

Chrysocharis femoralis Forster, 1861: 38. Female? Synonymy with *C. pubicornis* by Hansson, 1985a.

Derostenus aeneiscapus Thompson, 1878: 267. Lectotype Female (designated by Hansson, 1985a) (LUZN). Synonymy with *C. pubicornis* by Delucchi, 1954.

Chrysocharis avellanae Erdős, 1961: 478. Holotype Female, Hungary (HNHM). Synonymy with *C. pubicornis* by Hansson, 1985a.

Chrysocharis bipicturata Szelenyi, 1977: 456. Holotype Female, Mongolia (HNHM). Synonymy with *C. pubicornis* by Hansson, 1985a.

Chrysocharis asclepiadeae Szelenyi, 1979: 177. Holotype Female, Hungary (HNHM). Synonymy with *C. pubicornis* by Hansson, 1985a.

Chrysocharis tranquillus Szelenyi, 1981: 280. Holotype Female, Hungary (HNHM). Synonymy with *C. pubicornis* by Hansson, 1985a.

Chrysocharis pubicornis (Zetterstedt): Graham, 1959:195.

Diagnosis: (Based on Hansson, 1985a): Female: Length 1.1–1.9mm. Frons below fork golden purple or green; frons above fork metallic bluish green or violet; vertex golden green; antenna including scape dark. Mesoscutum metallic bluish green, greenish blue or golden green; scutellum metallic purple, golden red or metallic bluish-green; propodeum concolorous with mesoscutum; all coxae dark metallic; femora predominantly dark brown and sometimes metallic; fore tibia and tarsus pale brown; mid and hind tibia and tarsi white or pale yellow; wings hyaline; veins pale brown or pale yellow. Head with ratios of eye height:malar space: mouth opening = 4.6:1.0:4.2. Occipital margin with an edge or low carina behind ocellar triangle; dorsellum tongue like; forewing with speculum closed; relative length of MV = 7.1; PMV = 2.1; STV = 1.0. Anteromedian part of propodeum with a raised anchor or “Y” shaped structure; each callus with 3-4 setae. Petiole shorter than propodeum (16:24), wider than long. Gaster oval shaped.

Male: See Hansson (1985a).

Hosts: Diptera: Agromyzidae, Cecidomyiidae, Drosophilidae, Tephritidae; Lepidoptera: Gracillariidae, Lyonetiidae, Tischeriidae, Tortricidae.

Distribution: Oriental (India, Pakistan), Palearctic, Nearctic and Australasian Regions.

Remarks: This species comes near *Chrysocharis crassiscapus* (Thompson) in the key of Hansson (1985a) but differs from it in having :1) femora predominantly dark (in *C. crassiscapus* femora white); 2) dorsellum without foveae (in *C. crassiscapus* dorsellum with 2 foveae); 3) raised surface of petiole only a narrow strip (in *C. crassiscapus* petiole rectangular with strong sculpture and 4) anchor or “Y” shaped structure of propodeum smaller and weaker (in *C. crassiscapus* anchor or “Y” shaped structure of propodeum larger and stronger).

20. *Chrysocharis zizyphi* Hansson
(Fig. 29)

Chrysocharis zizyphi Hansson, 1985b: 221. Holotype Female, Pakistan (BMNH).

Diagnosis (Based on Hansson, 1985b): Female: Length 1.4–1.5mm. Face and clypeus yellowish green or purple; frons below fork yellowish green, yellowish purple or purple; frons above fork bluish violet; vertex greenish blue; antenna dark except pale scape; mesoscutum, scutellum and propodeum bluish green or yellowish green; all coxae dark and metallic and remaining parts of legs pale; wings hyaline. All funicular segments about 1.4x as long as wide; frontal

fork “Y” shaped; propodeum with an inverted “V” or “Y” shaped raised fold anteromedially; relative length of MV = 8; PMV = 1; STV = 2.2. Petiole half as long as medium length of propodeum. Gaster oval.

Male: See Hansson (1985b).

Hosts: Coleopteran leaf miner on *Zizyphus* sp. (Hansson, 1985b).

Distribution: Pakistan (Malir, Peshawar).

Remarks: Among Indian species of *Chrysocharis*, this species comes near *Chrysocharis nitida* Hansson in the key given in this paper but differs from *C. nitida* in having: 1) lower margin of clypeus without a tooth (in *C. nitida* lower margin of clypeus with a pointed tooth); 2) frontal fork with “Y” shaped structure (in *C. nitida* frontal fork “T” shaped); and 3) propodeum with inverted “V” or “Y” shaped structure (in *C. nitida* frontal fork with raised anchor shaped structure. According to Hansson (1985b), among Palearctic species *C. zizyphi* comes near *C. pentheus* but differs from it by small dorsellum and the nature of sculptures in the anterior part of propodeum.

SUMMARY

The species of *Chrysocharis* Foerster of the Indian subcontinent are taxonomically reviewed. Diagnosis of 13 known species is given and two little known species are redescribed. Five new species are described. These are: *Chrysocharis cutisi* Narendran & Sureshan, sp. nov., *C. differentis* Narendran & Sureshan, sp. nov., *C. harithi* Narendran & Razak, sp. nov., *C. neosunrosi* Narendran & Razak, sp. nov. and *C. neoviridis* Narendran & Razak, sp. nov. A key to species of *Chrysocharis* of the Indian subcontinent and the available data on their hosts and distribution are provided.

ACKNOWLEDGEMENTS

TCN is grateful to Ministry of Environment and Forests, New Delhi for financial assistance under AICOPTAX for a research project. TCN and PMS acknowledge The Director Zoological Survey of India, Kolkata and The Officer in Charge Zoological Survey of India, Western Ghat Regional Centre, Calicut, Kerala for facilities to work. TCN is grateful to Dr. Christer Hansson (Sweden) for permitting the free use of his publications and for various pieces of information on *Chrysocharis*. TCN thanks Prof. M. Hayat (Aligarh) for kindly sending the Holotype of *Chrysocharis imphalensis* on loan for our studies and critically reviewing the paper. He thanks Dr. S. Sheela

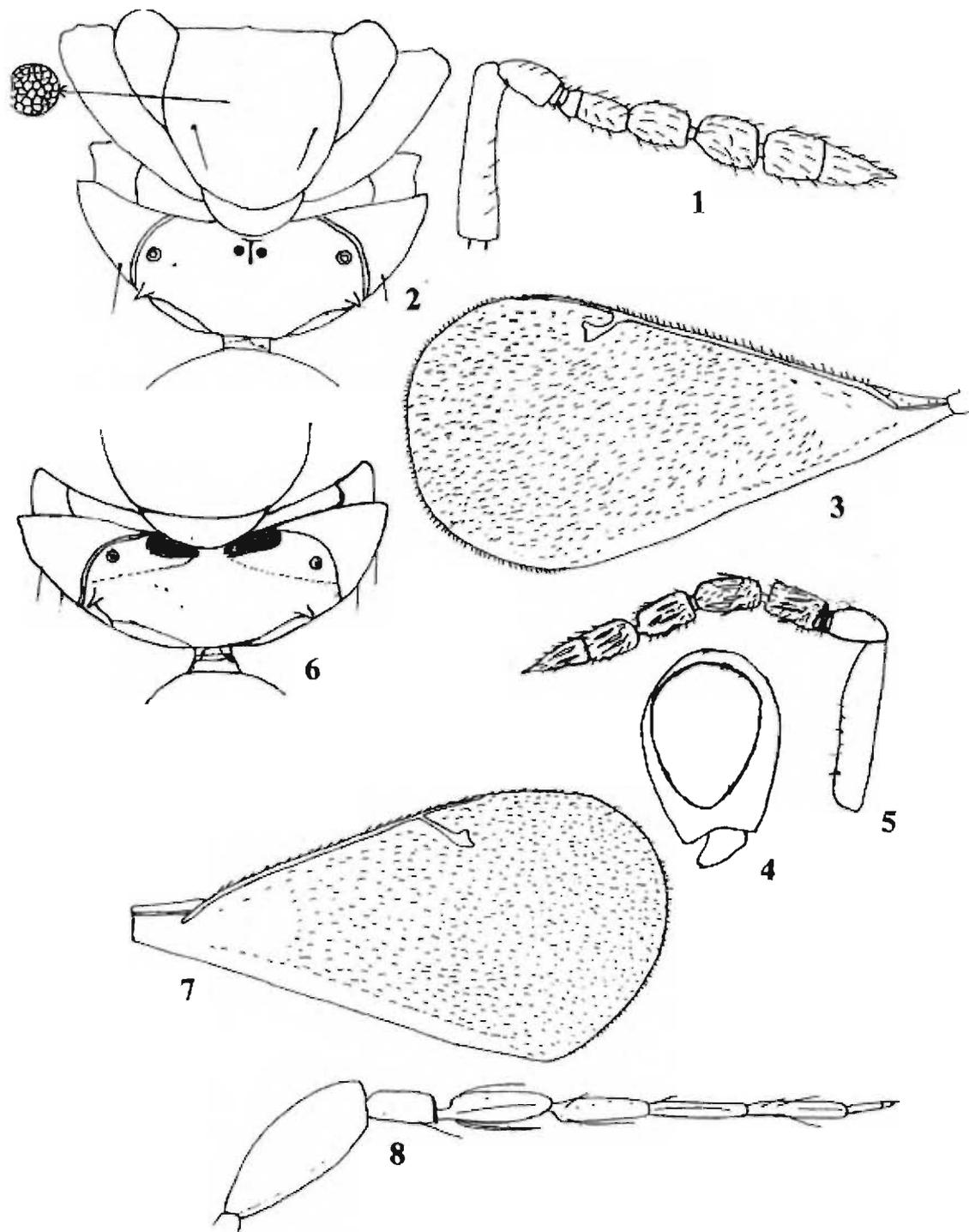
and Dr. Girish Kumar, Zoological Survey of India, Kolkata, for searching the type of *Chrysocharis echinata* at NZSI. He thanks Dr. Sheeba (Manjery NSS College, Kerala) for critically going through the paper

and pointing out many errors overlooked by him. NR is grateful to Punjabi University Patiala, Punjab, for facilities to work.

REFERENCES

- Ashmead, W.H. 1904a, Classification of the chalcid flies of the superfamily Chalcidoidea, with descriptions of new species in the Carnegie Museum, collected in South America by Herbert H. Smith. *Memoirs of the Carnegie Museum*, **1**(4):i-xi,225-551.
- Ashmead, W.H. 1904b. Descriptions of new Hymenoptera from Japan- II. *Journal of New York entomological society*, **12**: 146-165.
- Askew, R.R. and Coshan, P.F. 1973. A study of *Chrysocharis nephereus* (Walker) (Hymenoptera: Eulophidae) and allied species, with observations on their biology in Northern England. *Journal of Natural History*, **7**: 47-63.
- Bouceck, Z. and Askew, R.R. 1968. Index of Palearctic Eulophidae (excl. Tetrastichinae). In Delucchi, V. & Remaudiere, G. (Eds). *Indexentomophagous Insects*, **3**: 9-254. Paris. Le Francois.
- Bouceck, Z. (1988), *Australasian Chalcidoidea (Hymenoptera). A biosystematic revision of genera of fourteen families, with a reclassification of species*. pp. 832pp. CAB International, Wallingford, Oxon, U.K., Cambrian News Ltd; Aberystwyth, Wales.
- Chishti, A.K.; Shafee, A.A. 1988, Species of the genera *Elachertus* Spinola and *Pediobius* Walker (Hymenoptera: Eulophidae) from India. *Indian Journal of Systematic Entomology*, **5**(1): 21.
- Delucchi, V. 1954a. *Neue Arten au der Subfamilie der Entedontinae (Chalc., Eulophidae)* pp.8 Commonwealth Institute of Biological Control, European Laboratory, Feldmeilen (Zürich), Switzerland.
- Delucchi, V. 1954b. Revision der Chalcidierarten der Gruppe *Derostenus- Chrysocharis* (Euloph., Entedoninae) *Mitteilungen der Schweizerischen Gesellschaft*, **27**(3): 281-305.
- Erdős, J. 1961, Fauna eulophidarum Hungariae generibus speciebusque novis aucta (Hymenoptera). *Annales Historico-Naturales Musei Nationalis Hungarici*, **53**: 471-489.
- Foerster, J. 1856. Hymenopterologische Studien. II. Chalcididae und Proctotrupii. Aachen, 152pp.
- Förster, A. 1861, Ein Tag in den Hoch-Alpen. *Programm der Realschule zu Aachen*, 1860-1861: I–XLIV (1–44).
- Goureau, C.C. 1851, Mémoire pour servir à l'histoire des Diptères dont les larves minent les feuilles des plantes et à celle de leurs parasites. *Annales de la Société Entomologique de France*, (2) **9**: 131-176.
- Girault, A.A. 1917. Descriptiones Hymenopterorum Chalcidoidearum variorum cum Observationibus, V. Glendale. Md., 16pp.
- Goureau, C.C. 1851, Mémoire pour servir à l'histoire des Diptères dont les larves minent les feuilles des plantes et à celle de leurs parasites. *Annales de la Société Entomologique de France*, (2) **9**: 131-176.
- Graham, M.W.R. de V. (1959), Keys to the British genera and species of Elachertinae, Eulophinae, Entedontinae and Euderinae (Hym., Chalcidoidea). *Transactions of the Society for British Entomology*, **13**(10) pp. 169-204.
- Graham, M.W.R. de V. (1963). Additions and corrections to the British list of Eulophidae (Hym. Chalcidoidea) with descriptions of some new species. *Transactions of the Society for British entomology*. **15**: 167-275.
- Graham, M.W.R. de V. (1993), The identity of some species of Chalcidoidea (Hym.) described by Nees von Esenbeck (1834) with new synonymy. *Entomologist's Monthly Magazine*, **129** pp. 221-230.
- Hansson, C. 1985a. Taxonomy and biology of the Palearctic species of *Chrysocharis* Foerster, 1856 (Hymenoptera: Eulophidae). *Entomologica scandinavica supplement No.* **26**: 1-130.
- Hansson, C. 1985b. The entedontine genera *Achrysocharoides* Girault, *Chrysocharis* Forster and *Kratoysma* Boucek (Hymenoptera: Eulophidae) in the Oriental region. *Entomologica Scandinavica*, **16**: 217-226.
- Hansson, C. (1987), Revision of the New World species of *Chrysocharis* Forster (Hymenoptera: Eulophidae). *Entomologica Scandinavica (supplement)* **31**: 3-86.

- Hayat, M.; Aftab, H.; Perveen, S. (2005), Taxonomic notes on some Indian Eulophidae (Hymenoptera: Chalcidoidea) - 2. On the types of some Eulophinae, Entedoninae and Euderinae. *Oriental Insects*, **39**: 1-14.
- Ikeda, E. 1996. Revision of the Japanese Species of *Chrysocharis* (Hymenoptera, Eulophidae), III. *Journal of Japanese Entomology*, **64**: 551-569.
- Khan, M.A. 1985. Two new species of *Chrysocharis* Forster (Hymenoptera: Eulophidae) from high altitude of India. *Journal of Bombay Natural History Society*, **82**: 376-380.
- Khan, M.A.; Agnihotri, M.; Sushil, S.N. 2005, Taxonomic studies of eulophid parasitoids (Hymenoptera: Chalcidoidea) of India. *Pantnagar Journal of Research*, **2** (1) (Special Suppl.): 1-230.
- Kamijo, K. 1976. Notes on Ashmead's and Crawford's types of Eulophidae (Hymenoptera, Chalcidoidea) from Japan. *Kontyû*, **44**(4): 482-495.
- Malac, A. 1943. Eine neue Chalcidide aus Mahren. *Entomologické Listy*, **6**: 87-91.
- Mani, M.S. 1989. Chalcidoidea Part 1. & 2. Fauna of India and adjacent Countries. 1067pp. Published by Zoological survey of India, Kolkata.
- Narendran, T.C. and Sudheer, K. 2005. A taxonomic review of the Chalcidoids (Hymenoptera: Chalcidoidea) associated with *Ficus benghalensis* Linnaeus. Occasional Paper No. **237**. Zoological Survey of India., 1-35pp.
- Nees ab Esenbeck, C.G. 1834, *Hymenopterorum Ichneumonibus affinium, Monographiae, genera Europaea et species illustrantes*, **2**: 138-139 Stuttgart und Tübingen.
- Noyes, J.S. 2012. Universal Chalcidoidea Database. World Wide Web electronic publication. <http://www.nhm.ac.uk/chalcidoids> [Referred on January 2012].
- Peck, O. 1951. Superfamily Chalcidoidea. In: Hymenoptera of America north of Mexico. Synoptic catalog. *Agri. Monogr.*, **2**: 410-594.
- Schmiedeknecht, O. (1909), Hymenoptera fam. Chalcididae. *Genera Insectorum* 97 pp. 1-550 (Ed: Wytzman, P.) Brussels.
- Sundby, R. 1957, The parasites of *Phyllocnistis labyrinthella* Bjerk. and their relation to the population dynamics of the leaf-miner. *Norsk Entomologisk Tidsskrift Supplement*, **2**: 1-153.
- Szelényi, G. 1977, Eulophidae from Mongolia (Hymenoptera: Chalcidoidea). *Acta Zoologica Academiae Scientiarum Hungaricae*, **23**(3/4): 456-457, 453-459.
- Szelényi, G. 1979, Four new species of *Chrysocharis* Förster, 1856 (Hymenoptera: Chalcidoidea, Eulophidae). *Acta Zoologica Academiae Scientiarum Hungaricae*, **25**(1/2): 177-178.
- Szelényi, G. 1981, On the chalcidoid flies of the Hortobágy, I. Eulophidae (Hymenoptera). *The Fauna of the Hortobágy National Park*, **1**: 280-281 (Ed: Mahunka, S.) ISBN 963-05-2519-4.
- Thomson, C.G. 1878, *Hymenoptera Scandinaviae* 5. *Pteromalus (Svederus) continuatio* pp. 267 Lund.
- Walker, F. 1839. Monographia chalciditum. I-London, 333pp.
- Walker, F. 1840. Description of British Chalcidites. *Ann. Mag. nat. Hist.*, **4**: 29-32, 232-236.
- Walker, F. 1848. List of the specimens of hymenopterous insects in the collection of British Museum. Part 2, Chalcidites, Additional species. London, 99-237.
- Yoshimoto, C.M. 1973. Revision of the genus *Chrysocharis* Forster (subgenus *Chrysocharis* s.str.) (Chalcidoidea: Eulophidae) of America north of Mexico. *Canadian Entomologist*, **105**(11): 1377-1405.
- Zetterstedt, J.W. 1838. Insecta Lapponica descripta. - Lipsiae, pp. 1-868.



Figs. 1-3: *Chrysocharis cuticisi* Narendran & Sureshan, sp.nov., female:

1. Antenna; 2. Scutellum and propodeum; 3. Forewing

Figs. 4-7: *Chrysocharis differentis* Narendran & Sureshan, sp.nov., female:

4. Head profile; 5. Antenna; 6. Propodeum and petiole; 7. Forewing.

Fig. 8: *Chrysocharis echinata* Mani, female, antenna (Modified from Mani, 1989)

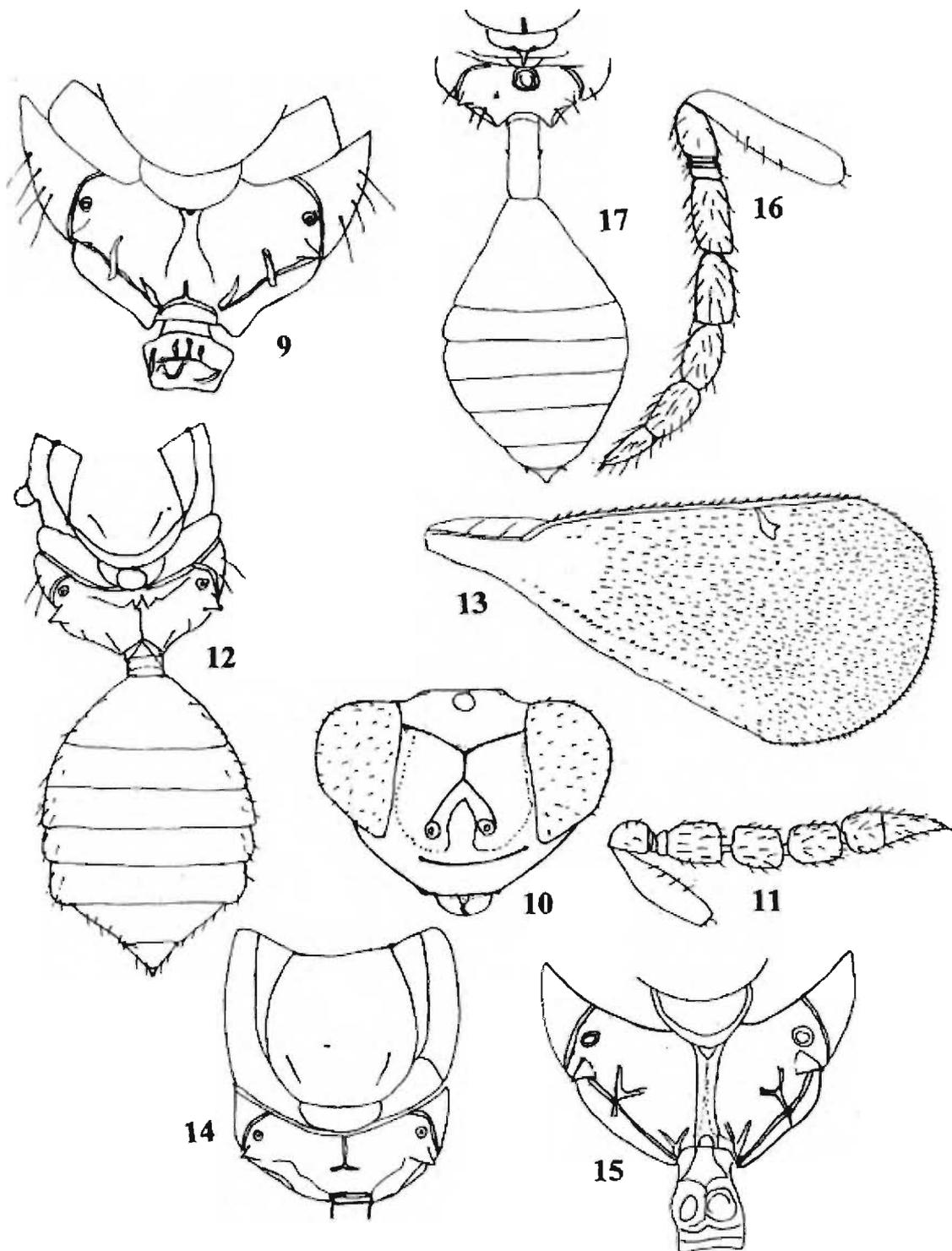


Fig. 9 : *Chrysocharis euterpe* Hansson, female, propodeum and petiole (modified from Hansson 1985b)

Figs. : 10- 13. *Chrysocharis harithi* Narendran & Razak, sp. nov., female:

10. Head anterior view; 11. Antenna; 12. Part of mesosoma and metasoma dorsal view; 13. Forewing.

Fig. 14 : *Chrysocharis imphalensis* Chisti & Shafee, female, scutellum and propodeum

Fig. 15 : *Chrysocharis lankensis* Hansson, female [?], propodeum (Modified from Hansson, 195b)

Figs. 16-17 : *Chrysocharis neosunosei* Narendran & Razak, sp. nov., female:

16. Antenna; 17. Propodeum and metasoma;

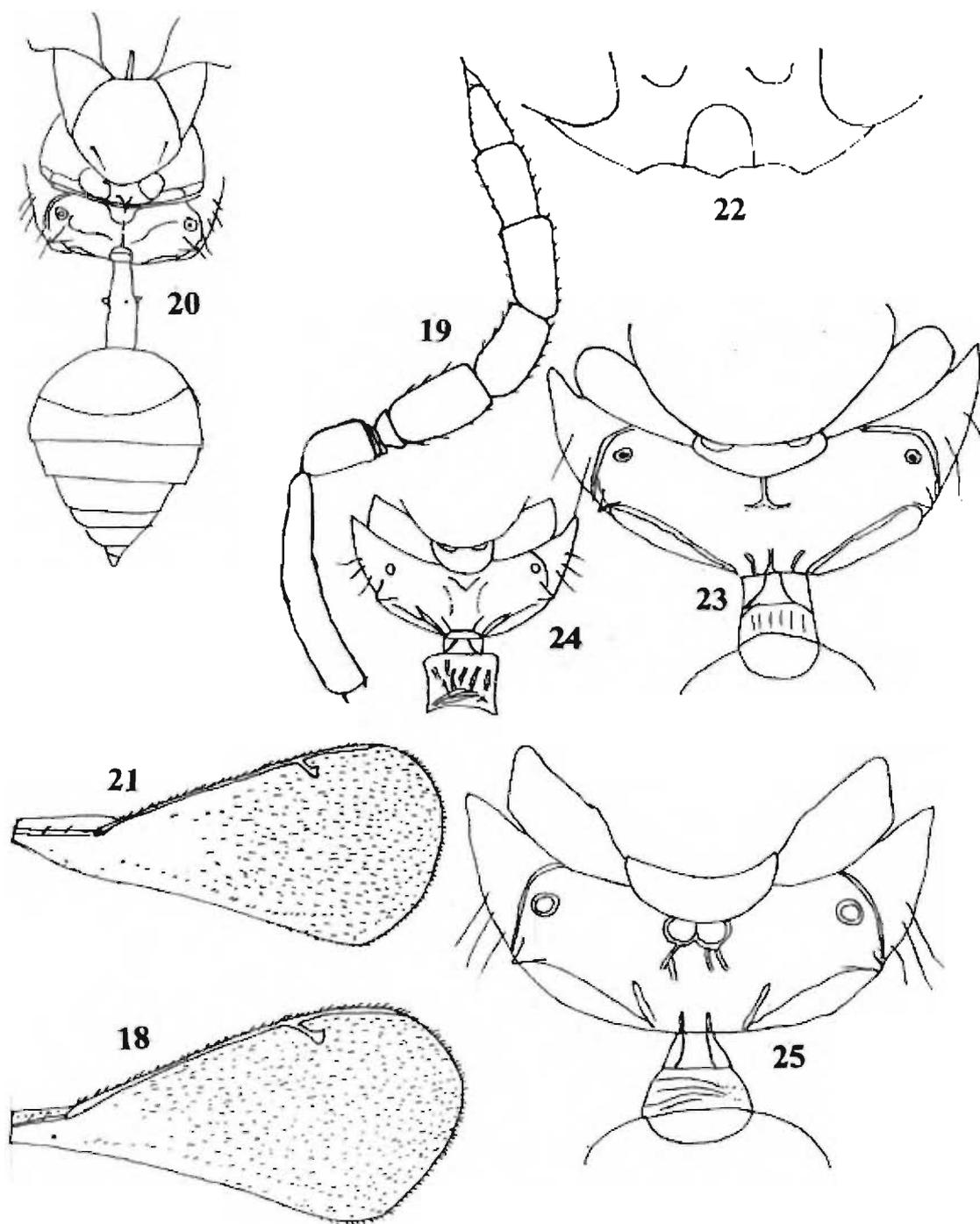


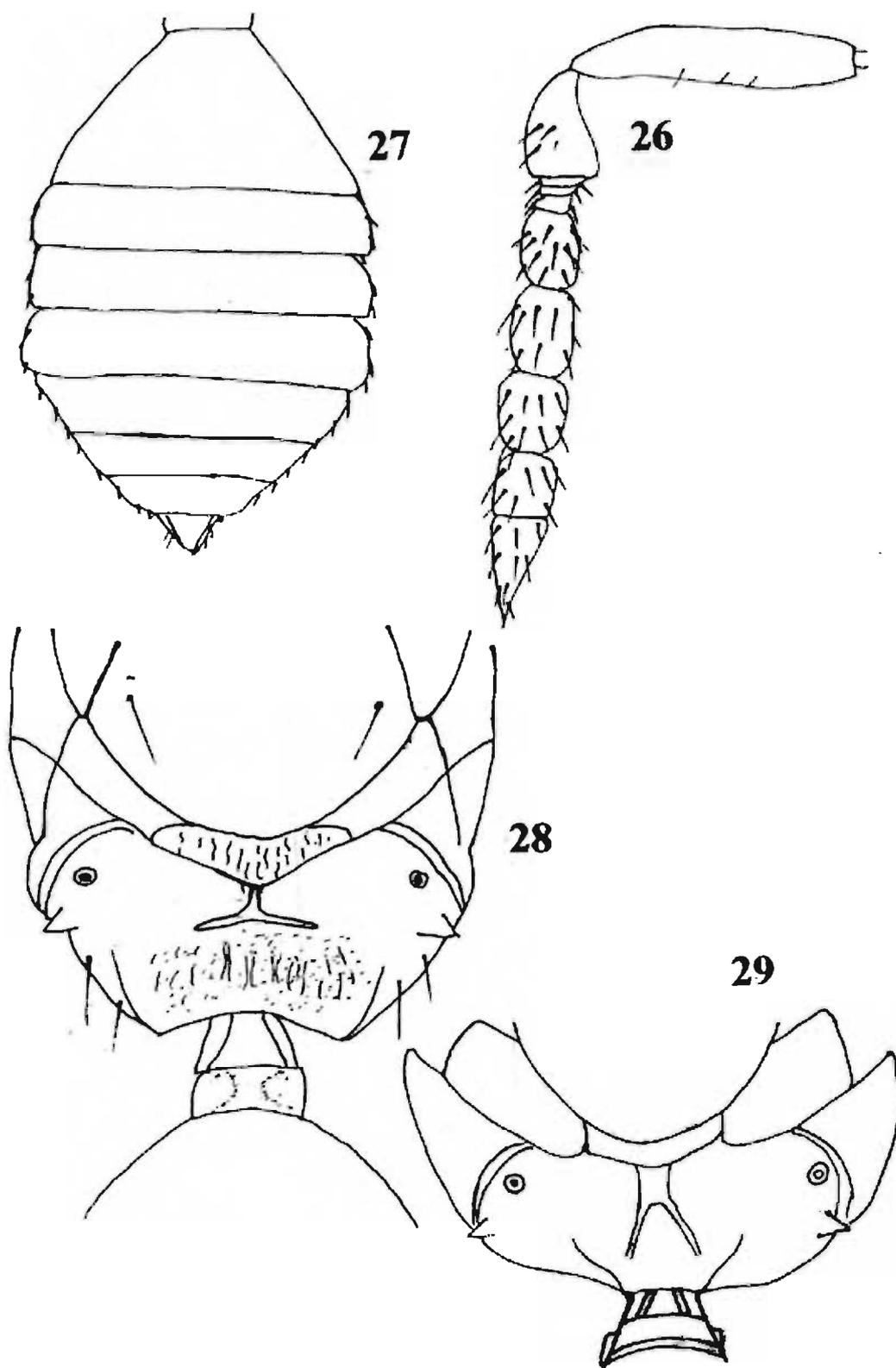
Fig. 18 : Forewing

Fig. 19-21 : *Chrysocharis neoviridis* Narendran & Razak, sp.nov., female :
 19. Antenna; 20. Scutellum, propodeum and metasoma; 21. Forewing.

Figs. 22-23 : *Chrysocharis nitida* Hansson, female: 22. Lower face; 23. Propodeum and petiole.

Fig. 24: *Chrysocharis polyzo* (Walker), female, propodeum and petiole.

Fig. 25: *Chrysocharis pubicornis* (Zett.), female, propodeum and petiole



Figs. 26-28 : *Chrysocharis pentheus* (Walker), female: 26. Antenna; 27. Metasoma;

Fig. 28 : Propodeum and petiole.

Fig. 29 : *Chrysocharis zizyphi* Hansson, female, propodeum and petiole.