SUBFAMILY: AGATHIDINAE
Genus: Zelomorpha Ashmead (1900)

Ashmead (1900) erected the genus Zelomorpha with Z. oriezonzensis as genotype, which was monobasic. The genus Zelomorpha belongs to the subfamily Agathidinae of Fuliginosa group, is small but cosmopolitan in distribution and is known from Nearctic, Ethiopian, Neotropical and Indo-Australian regions. The following five taxa were synonymized under Zelomorpha namely, Neophylax synderi Ashmed (1900) by Muesebeck (1927); Ahngena transcapla Kokoujev (1903) by Tobias (1971); Lisintheria nigricornis Cameron (1904) by Muesebeck and Walkey (1951); Xanthomicroodus iridipennis Cameron (1904) by Muesebeck and Walkey (1951) and Zelomorpha (Zelomorphidea) melanota Viereck (1912) by Muesebeck (1927).

The taxonomy of the genus Zelomorpha has been attempted by Szepligeti (1900), Dover (1925), Muesebeck (1927) Muesebeck and Walkey (1951), Baltazar (1962, 1963, 1966) and Shenefelt (1970b).

Bhat and Gupta (1977) provided the generic diagnosis and key characteristics of Zelomorpha.

Shenefelt (1970) recorded 12 species of Zelomorpha in the world, of which four are from the Oriental region. Later, Bhat and Gupta (1977) recorded 18 species under this genus from the Oriental region, of which ten are from India.

In the present work, a new species, *Zelomorpha tarsospectini* is described on the females collected from India: Western Maharashtra: Kolhapur. For this, a key to the Oriental species groups and species of *Zelomorpha* by Bhat and Gupta (1977) has been followed.

Thus *Zelomorpha* now embodies 21 species from Oriental region, of which 13 species are reported from India. The key to the Indian species of *Zelomorpha* was modified by Phadake and Nikam (1997) is given and the new taxa is included in the key.
Key to the species groups and Indian species of *Zelomorpha*, modified by Phadake and Nikam (1997).

1. Frons bordered by two sets of carinae, marginal and frontal;
fore tibial spur 1.0 - 1.2x as long as basitarsus, its apical end spine like;
male subgenital plate usually very wide (except *fuliginosa*, *nigriconis*,
*erythrocephala*, *punctata* and *cariareolai* not known) ... ... 2
A - The Fuliginosa group.

- Frons without any carinae; fore tibial spur 0.5 - 0.1 x as long as fore basitarsus, its apical end moderately narrow; male subgenital plate moderately wide (except *dravida*)
B - The Sulana Group.

2. Vertex, frons and thorax densely, strongly punctate; flagellum yellowish;
apical 0.5 of forewing brown and basal 0.5 hyaline. ... ... *guptai* Kurhade

- Vertex, frons and thorax smooth to moderately punctate; flagellum blackish-brown to black; wings usually hyaline or dark brown. ... 3
3. Face and mesoscutum shiny, smooth; wings entirely blackish-brown; abdomen and hind legs black. ... ... 4

- Face and mesoscutum shiny, sparsely, distinctly to closely, moderately punctate; wings usually hyaline; abdomen and hind legs pale yellow to yellowish-red (except apical 0.25 of hind tibia and tarsus brown). ... ... 5

4. Head, thorax and all legs black, with dense pubescence; antenna with black pubescence. ... ... fuliginosa
    Cameron

- Head, thorax and legs red (except hind legs, coxae and trochanter of fore and middle legs) sparsely pubescent; antenna with white dense pubescence. ... erythrocephala
    (Cameron)

5. Mesopleurum without a rugolose furrow; ocellar region and middle of occipit black. ... .... nigricornis
    (Cameron)

- Mesopleurum with distinct carinated furrow; head entirely pale yellow to yellowish red. ... 6
6. Malar space 1.0 - 1.5 x the
basal width of mandible and
0.1 x - 0.25 x the eye height;
eyes large and strongly rounded.

- Malar space 2.0 x the basal
width of mandible and 0.2 to
0.3 x the eye height; eyes
comparatively small; mesoscutum
and scutelum sparsely, minutely,
punctate.

\[\text{pavaarga}\]
Gupta & Bhat

7. Malar space 1.3 - 1.5 x the
basal width of mandible; inter
ocellar distance 0.3 - 0.5 x
the ocellocular distance; scape
comparatively slender and
cylindrical; wings usually wholly
hyaline.

\[\text{confusa}\]
Gupta & Bhat

- Malar space 1.0 x the basal width
of mandible; interocellar distance
0.25 - 1.0 x the ocellocular distance;
scape comparatively thick and swollen;
wings infuscated on apical half; ground
colour yellowish-red; lateral ocelli large;
mesopleural furrow distinct only in the
posterior half of the mesopleurum.
8. Inter ocellar distance 1.0 x
the ocellocular distance;
antenna 2 + 30 segmented;
scape blackish-brown; meso-
pleural furrow extending 0.66 the
mesopleural length; propodeal
areola smooth. .... amplarga
Gupta & Bhat

- Inter ocellar distance 0.25 to 1.2 x
the ocellocular distance; antenna
41 - 44 segmented; scape reddish-
yellow; areola transversely carinated;
fore leg tibial spur apically free and
spiny, basal region with comb like
nearly equal sized pubescence; a
triangular flange with comb like
pubescence at the base of basitarsus. .... 9

9. Antenna 2+42 segmented; inter
ocellar distance 0.25 x the ocellocular
distance; mesopleural furrow extending
upto 0.65 the mesopleural length. cariareolai
Phadake.

- Antenna 2+37 segmented; inter ocellar
distance 1.2 x the ocellocular distance;
mesopleural furrow extending upto
0.63 the mesopleural length; fore leg
tibial spur apically free and spiny, basal
region with comb like nearly equal sized
pubescence; a triangular flange with
comblike pubescence present at
the base of basitarsus. .... tarspectini,
sp.nov.
10. Propodeal spiracles elongated
   or weakly elliptical, 2.0 x as long
   as wide; propodeal areas usually
   sculptured; first tergite usually with
   lateral carinae; dorsolateral carina
   absent.                        ...       ...   ...   11

- Propodeal spiracles strongly
  elliptical, 2.5 - 5.0 as long as wide;
  propodeal areas usually shiny,
  smooth; first tergite with dorsolateral
  carinae, extending to basal 0.33 -
  1.0 of its length; first tergite 3.0 x -
  4.0 x as long as its apical width, nearly
  equal to petiolar width; median
  longitudinal carinae of propodeum
  running upto apex; abdomen
  and hind legs blackish-brown.     longidorsata
Gupta & Bhat

11. Face, mesoscutum and scutellum
    sparsely punctate; head yellowish-
    red; eyes less rounded; malar
    space 2.0 - 3.0 x basal width of
    mandible; vertex shiny, smooth to
    very sparsely and indistinctly
    punctate; interocellar distance
    0.6 - 0.7 times the ocellocular distance. ...   12

- Face, mesoscutum and scutellum
  strongly punctate; head black; eyes
  strongly rounded; malar space
  1.3 x 1.5 x the basal width of
  mandible; vertex sparsely punctate;
interocellar distance 0.75 - 1.0 x
the ocellocular distance; thorax
yellowish red; fore and middle legs
(except middle coxa light brown)
yellowish; hind legs dark brown. ... *dravida*
Gupta & Bhand

12. Ventral 0.33 - 0.55 of subpleural
area, metapleurum, propodeum,
abdomen and hind legs black;
middle coxa and trochanter
light brown. ... ... *cordata*
Gupta & Bhand

- Head, thorax and abdomen pale
yellow to reddish-yellow
(except in some males abdomen,
and hind leg blackish brown ;
legs yellowish-red (except apex
of hind tibia and tarsus brown). *quadrisfossulata*
Enderlein
**Zelomorpha tarspectini**, sp. nov.

(Fig. 11a to c)

Female 8.9 mm (Fig. 11a). Head 0.8 times as long as wide; vertex smooth, shiny, weakly punctate, pubescent; ocelli large; interocellar distance 1.2 x as long as ocellocular distance; lateral ocellus diameter 1.3 x the diameter of median ocellus; ocellocular space smooth, pubescent; frons depressed, bordered by frontal and marginal carinae, smooth, shiny; face 0.8 times as long as wide, medially slightly concave, foveolate frontoapically, longitudinally striate; lateral area transversely, obliquely striate; clypeus smooth, subpolished, convex, sparsely pubescent, 0.5 times as long as wide; clypeal fovea deep; malar space 1.2 x the basal width of mandible, rugosely, weakly punctate, pubescent; mandible 3.1 x as long as wide, bidentate, punctate, pubescent; temple weakly punctate, pubescent; occipital carina absent; antenna 2 + 39 segmented; scape 2 x as long as wide, pubescent; pedicel 0.5 times as long as wide; first penultimate segment 2.8 x as long as wide; middle segment 2 x as long as wide; terminal segment 2.8 x as long as wide; flagellum pubescent throughout the length; maxillary palp 5 segmented; labial palp 3 segmented.

**Thorax** 1.6 x as long as wide; pronotal colllar smooth, shiny, finely, longitudinally striate, weakly punctate, pubescent;
Fig. 11

Zelomorpha tarsopectini, sp. nov. ♀

a) Lateral view, entire
b) Head, viewed from front
c) Propodeum and first abdominal tergite
pronotum smooth, subpolished; anterior corner longitudinally striate, posteriorly vertically crenulated; suture in pronotum distinct, sparsely pubescent; mesoscutum moderately punctate, pubescent; notauli distinct; middle lobe of mesoscutum slightly elevated; scutellum slightly convex, rugosely, shallowly punctate, pubescent; postero-medial depression crenulated; prescutellar depression with four transverse carinae; metanotum with two transverse carinae; lateral area depressed, crenulated; propodeum (Fig. 11c) areolated, transversely carinated; basal median longitudinal carina small; first and second pleural area rugose; third pleural area sparsely rugose, apical transverse carinae distinct; lateral longitudinal pleural carinae distinct; areola pointed towards the apex and broad at the base, usually with sparsely transverse rugae; propodeal spiracle large, oval, 2.7 x as long as wide; propleurum smooth, shiny, pubescent; posterior flange of propleurum present; mesopleurum moderately, distinctly punctate, pubescent; mesopleural furrow extending upto 0.63 the length of mesopleurum, crenulated; mesopleural fovea distinct; mesopleural suture distinct, crenulated; anterior corner foveolate, transversely shallow, rugoso-reticulate; strenaulus distinct; subpleural area moderately punctate, pubescent; tegula 1.6 x as long as wide; metapleurum rugoso-reticulate, with vertical crenulated furrow, punctate, densely pubescent; juxtacoxal carina distinct.
Fore wing 3.6 x as long as wide; stigma 3.5 x as long as wide; parastigma 4.5 x as long as wide; metacarpus 1.1 x as long as stigma; costa 1.85 x as long as metacarpus, 2.2 x as long as stigma; first abscissa of radius nearly equal to the second abscissa of radius; third abscissa of radius 1.3 x as long as stigma; medius as long as submedius; basal 2.5 times as long as medius; second cubital cell small, with four unequal sides; cubitus running up to the margin; nervulus 0.8 times as long as width of stigma, slightly inclivous, basad.

Hind wing 3.7 x as long as wide; mediella 2 x as long as subcostella; radiella and cubitella unsclerotised; basella 0.3 times as long as mediella; submediella as long as basella; nervellus slightly inclivous, 0.2 times as long as mediella; submediella partly sclerotised.

Hind coxa 1.7 x as long as wide, globular, transversely rugose, dorsally with spiny structure; trochanter 2.2 x as long as wide; trochantellus 1.4 x as long as wide; femur 4.2 x as long as wide, with a spiny fringe, dorsally and ventrally punctate, pubescent; tibia 1.25 x as long as femur, with dorsal spiny fringe, punctate, pubescent; tibial spur 0.7 times as long as basitarsus; tarsus five segmented; second tarsus 0.5 times as long as basitarsus; claw bifid; fore leg tibial spur long, 1.1 x as long as basitarsus, apically spiny, basal region with comb like equal sized pubescence;
a triangular flange present at the base of basitarsus with pectin-like pubescence.

*Abdomen*: 3.6 x as long as wide; first tergite 2 x as long as wide, polished with complete dorsal longitudinal carinae and a deep mid-dorsal depression, pubescent; second abdominal tergite as long as wide, smooth, shiny, sparsely pubescent; third tergite as long as wide, smooth, polished, sparsely pubescent; fourth tergite 0.9 times as long as wide, sparsely, equidistantly pubescent; fifth tergite 0.8 times as long as wide, smooth, apically equidistantly, sparsely pubescent; sixth tergite 0.8 times as long as wide, smooth, shiny, apically equidistantly pubescent; seventh tergite 0.7 times as long as wide, smooth, shiny, sparsely pubescent; eighth tergite slightly visible, densely pubescent; ovipositor short, pointed, as long as ovipositor sheath.

Body yellowish-red; ocelli, tip of the mandible, flagellum black; scape redish-yellow; claws dark brown; fore wings basally hyaline, apically black or dark brown; costa, stigma, black; ovipositor redish, ovipositor sheath brownish-black.

*Male*: Unknown.

*Holotype*: ♀: India: Western Maharashtra: Kolhapur; 15.IX.2000.; Light trap; A.A. Shaikh Coll. Antenna, wings and legs mounted on slides and labelled as above.

*Paratypes*: 4 ♀♀, data same as holotype.
DISCUSSION

In accordance with the key to the Oriental species group and species of *Zelomorpha* by Bhat and Gupta (1977) the new species, *Zelomorpha tarspectini* runs close to the *Zelomorpha amplarga* Gupta and Bhat (1977) in having: i) malar space 1.0 x the basal width of mandible, ii) lateral ocelli large as compared to median ocellus, iii) mesopleural furrow extending only in the posterior half of the mesopleurum, iv) wings mostly infuscated in the apical half and v) ground colour yellowish-red.

However, *Zelomorpha tarspectini*, sp. nov. differs from *Zelomorpha amplarga* in having: i) interocellar distance as long as ocellocular distance, ii) antenna 2 + 39 segmented, iii) scape reddish-yellow, flagellum black, iv) mesopleural furrow extending up to 0.63 the length of mesopleurum, v) propodeal areola with single transverse carina, vi) tibial spur 1.1 x as long as basitarsus, with comb like structure, and vii) basitarsus with basal flange with pectin like structure.