THREE NEW SPECIES OF THE GENUS *HOMOLOBUS* FOERSTER FROM INDIA (HYMENOPTERA: BRACONIDAE: HOMOLOBINAE)

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ABSTRACT: Three new species of the genus *Homolobus* Foerster i.e. *Homolobus* (*Apatia*) *etawawiana* Shamim sp. nov., *Homolobus* (*Apatia*) *kanpurensis* Shamim, sp. nov. and *Homolobus* (*Apatia*) *sharifi* Shamim sp. nov. is described and illustrated with nineteen photographs from India. A key to the Indian species of subgenus *Apatia* Enderlein is also proposed for the first time. Both the species is running his nearest allies and compared with Indian species.

KEY WORDS: Hymenoptera, Braconidae, Homolobinae, *Homolobus*, *Apatia*, new species, India.

The family Braconidae contains species which are exclusively parasitoids of various pest species mainly belonging to the Lepidoptera and also of other insect orders. These parasitoids keep the pest populations under check in their natural habitats. However, due to hazardous nature of chemicals used in the control of pest species, alternative and safer and more eco-friendly methods of control have been investigated especially in the last century all over the world Bosen and De Bach (1991). One of the best alternative methods of control of insect pests has proved to be the use of other insects (called parasitoids) for the control of pest species. The family Braconidae is the second largest family of the order Hymenoptera containing with 17,605 valid species in the world (Yu et al., 2005) and more than 500 species from India.

Homolobines are solitary koinobiont endoparasitoids of Lepidoptera. Species of *Homolobus* are parasites of caterpillars with more or less exposed way of life, mainly belonging to the families Noctuidae and Geometridae. Achterberg (1979) and Shaw & Huddleston (1991) note that the Noctuidae and Geometridae are the most commonly recorded hosts of *Homolobus*. The comparatively high number of species of the subgenus *Apatia* seems to be typical for the Indian subcontinent. The biology of the new species is unknown, but other members of the genus are koinobiont endoparasitoids (with a final ectoparasitoid phase) of the Lepidoptera larvae, mainly in Geometridae and Noctuidae (Achterberg, 1979; Shaw, 2006).

For the identification of the genus *Homolobus* and subgenus *Apatia* see Achterberg (1979) a revision of the subfamily Zelinae auct. (Hymenoptera, Braconidae) page no. 276 and 277.

The genus *Homolobus* is cosmopolitan and speciose among the homolobines genera containing 55 described species from the world (Yu et al., 2005). The species of this genus have been revised by Achterberg (1979) from world. Subsequently, Achterberg (1992), Chou & Hsu (1995), Ahmad & Shujauddin (2001) and Achterberg & Shaw (2009) have done excellent work on genus *Homolobus*. The genus *Homolobus* containing five subgenera *Homolobus* Foerster, 1862, *Apatia* Enderlein, 1920, *Chartolobus* Achterberg, 1979 and *Phylacter* Reinhard, 1863. Out of which four subgenera are reported from India. The genus is represented by 10 species from from India spread over four

subgenera, four species from *Apatia* i.e. *elagabalus* (Nixon, 1938), *indicus* Ahmad & Shujauddin, 2001, *truncatoides* Achterberg, 1979 and *truncator* (Say, 1829); two species from C*hartolobus* i.e. *infumator* (Lyle, 1914), *undulatus* Achterberg, 1979; three species from *oulophus* i.e. *annulatus* Achterberg, 1979, *bohemani* (Bengtsson, 1918) and *flagitator* (Curtis, 1837) and one species from *Phylacter* Reinhard, 1863 i.e. *bifurcates* Achterberg, 1979. In this work three new species of *Homolobus* (*Apatia*) *etawawiana* Shamim sp. nov., *Homolobus* (*Apatia*) *kanpurensis* Shamim, sp. nov. and *Homolobus (Apatia) sharifi* Shamim sp. nov. are described and illustrated under the subgenus *Apatia* Enderlein from India. A key to the *Homolobus* species of subgenus *Apatia* Enderlein is proposed for the first time from india.

MATERIAL AND METHODS

The specimens were collected from Uttar Pradesh (India) by using sweeping nets. Photographs of various parts on slide and card mounted of specimens were taken with the help of a camera attached to a Trinocular Research Microscope (NIKON SMZ-1500). Measureents of slide- mounted structures and carded species were taken with the help of an ocular micrometer (linear side of 100 divisions) fitted in one of the two eyepieces of the Stereozoom Microscope (NIKON SMZ1500). The divisions of the ocular micrometer were converted to millimeters.

The terminology for the various parts and wing venation is that of van Achterberg (1993). Eady (1968) is followed for surface sculpture. Abbreviations used in the text are: POL: Posterior ocellar line (distance between the posterior ocelli); OOL: Ocello-ocular line (distance between posterior ocellus and eye); OD: Ocellar diameter; F: Flagellomere.

The types and other specimens are housed in the Insect Collection, Department of Zoology, Aligarh Muslim University, Aligarh (ZDAMU).

Key to Indian species of the genus *Homolobus* subgenus *Apatia* Enderlein

1. Vein r of hind wing present; length of eye in dorsal view 3.7 times temple; surface of first metasomal tergite smooth, dorsal carinae absent...*H.* (*A.*) *elagabalus* (Nixon)
- Vein r of hind wing absent; length of eye in dorsal view 1.6-2.6 times temple; surface of first metasomal tergite variable 2

2. Length of 4th segment of labial palp 4-5.5 times the 3rd segment ....*H.* (*A.*) *truncator* (Say)
- Length of 4th segment of labial palp 1.4-1.8 times the 3rd segment.....3

3. Length of first metasomal tergite 3.2 times its apical width, length of mesosoma 1.4 times its height; length of malar space 0.9 times basal width of mandible ....*H.* (*A.*) *truncatoides* Achterberg
- Length of first metasomal tergite 2.1-2.75 times its apical width, length of mesosoma 1.5-2.1 times its height; length of malar space 1.15-1.27 times basal width of mandible 4

4. Antennal segments 40-42.....5
- Antennal segments 43-44.....6

5. Length of eye in dorsal view 1.6 times temple; frons flat and somewhat coriaceous; vein SR of hind wing weakly sinuate; length of hind femur 6.5 times its width; length of first metasomal tergite 2.5 times its apical width, its surface

longitudinally rugose; length of ovipositor sheath about 0.9 times of fore wing ....*H.* (*A.*) *indicus* Ahmad & Shujauddin

- Length of eye in dorsal view 2.5 times temple; frons depressed medially, smooth; vein SR of hind wing strongly curved; length of hind femur 5.8 times its width; length of first metasomal tergite 2.75 times its apical width, its surface apically smooth, remainder rugose; length of ovipositor sheath about 0.07 times of fore wing .....***H.* (*A.*) *kanpurensis* Shamim, sp. nov.**

6. Antennal segments 43; length of vein 1-R1 1.35 times length of pterostigma; vein SC+R1 of hind wing slightly curved; F_1 1.2 times F_2; vein 2A of forewing shortly developed, area basally of 2A mainly bare .... ***H.* (*A.*) *etawawiana* Shamim, sp. nov.**
- Antennal segments 44; length of vein 1-R1 1.44 times length of pterostigma; vein SC+R1 of hind wing straight; F_1 as long as F_2; vein 2A of forewing well developed, area basally of 2A remotely setose ..... ***H.* (*A.*) *sharifi* Shamim, sp. nov.**

Homolobus (*Apatia*) *etawawiana* Shamim, sp. nov.

(Figures 1-9)

Description:

Body length: 13.3 mm, Forewing: 12.5 mm, Antenna 17.5 mm

Head: width of head in dorsal view 1.76 times its length; antennal segments 43, length of F_1 1.2 times F_2, length of F_1, F_2-F_8, F_9- F_{14}, F_{15}- F_{26}, F_{27}- F_{34}, F_{35}-F_{40} and F_{41} 4.28 times, 3.57 times, 3.33 times, 3 times, 2.4 times, 2 times, 3.25 times their width respectively, apical flagellomere pointed; length of outer aspect of 4th segment of labial palp 1.6 times 3rd segment; length of eye in dorsal view 2.6 times temple, and 1.62 times its width; eyes indistinctly emarginated; OOL: POL: AOL: OD = 15: 8: 7: 13; vertex 2.25 times as wide as long, smooth, spasely setose; frons 2 times as wide as long, smooth, near eye margin setose, depressed medially; between antennal sockets median carina visible up to 1/4 th length of face; face flat, 1.37 times as wide as long, medially smooth, remaining somewhat strigose; clypeus 1.6 times as wide as long, smooth, sparsely setose, strongly convex; ocelli somewhat oval shaped and large; lateral side of stemmaticum 1.14 times posterior side; occipital carina complete; intertentorial line 1.76 times tentorio-ocular line, tentorial pit deep and round; length of malar space 1.27 times basal width of mandible.

Mesosoma: Length of mesosoma 1.6 times its height and 2 times its width; pronotal sides anteriorly smooth, remaining largely crenulate; precotimesal sulcus wide and large, reticulate coriaceous, setose; mesopleuron antero-dorsally reticulate rugose, remaining smooth, setose; metapleuron dorsally smooth, densely setose, ventrally reticulate rugose; epicnemial area sparsely punctate; notauli broad, deep, anteriorly crenulate, posteriorly reticulate rugose with strong median longitudinal carina; middle lobe smooth, setose; lateral lobes sparsely setose; scutellar sulcus wide, deep with one median longitudinal carina; scutellum convetimes, smooth; side of scutellum crenulate; medio-posterior depression somewhat oval shaped, wide, deep with one median carina; metanotum crenulate; surface of propodeum densely and rather finely reticulate rugose except for a narrow anterior part smooth with carinae anteriorly.

Forewing: Length of forewing 3.12 times its width; length of pterostigma 4 times its width; SR1 slightly curved; r arising at middle of pterostigma; r 0.8 times as long as width of pterostigma; length of vein 1R1 1.35 times length of pterostigma; cu-a inclivous, postfurcal; 1-CU1: 2-CU1: 3-CU1 = 10: 55: 25; vein 2A shortly developed, area basally of 2A mainly bare; r: 3-SR: SR1= 20: 26: 120; 2-SR: 3-SR: r-m= 15: 26: ; Hindwing: Length of hind wing 4.1 times its width; vein

SC+R1 slightly curved; 2SC+R thick, vertical; SR basal third sclerotized and weakly curved, vein r absent; 1-M: 1-r-m: 2-SC+R = 50: 24: 14.

Hind leg: Hind coxa rugose, densely setose; length of hind femur, tibia and basitarsus 6.8 times, 10 times and 9.5 times their width respectively; length of hind tibial spurs 0.42 and 0.55 times hind basitarsus; tarsal claws simple, distinctly pectinate brown; spurs originates from each segments of tarsus.

Metasoma: Length of metasoma 3.98 times width and 2.67 times its height; length of first metasomal tergite 2.12 times its apical width, apical width 1.33 times its basal width, its surface apically smooth, basally carinate, remaining densely rugose; first metasomal tergite slightly medially depressed apically and basally impressed; length of ovipositor sheath 0.08 times forewing; ovipositor sheath thick, slender; ovipositor apically pointed.

Colour: Yellow except stemmaticum black; telotarsus, F_1-F_{41} brown; scape pedicel, first and second metasomal tergite, femur, tibia, tarsus, pronotum, mesoscutum, metanotum and ovipositor sheath yellowish brown; eyes grayish black; ocelli transparent yellow and wing veins brownish yellow.

Male: Same as holotype except antennal segments 40; hind coxa indistinctly rugose; lateral lobes densely setose; mesopleuron largely reticulate rugose, medially smooth; scutellum smooth, setose; first metasomal tergite uniformly rugose.

Type material: Holotype female. INDIA: Uttar Pradesh, Etawah, 26° 47' N 79° 02' E 14 April 2005, Collector, Mohammad Sharif & Mohammad Shamim (ZDAMU). Paratypes 1 female, INDIA: Uttar Pradesh, Auraiyya, 26° 28' N 79° 31' E 20 May 2005, Collector Mohammad Sharif, 1 female, INDIA: Uttar Pradesh, Mainpuri, 15 February 2006, Collector Mohammad Sharif (ZDAMU).

Host: Unknown

Etymology: The species name refers to its type locality.

Discussion:

The new species *Homolobus* (*Apatia*) *etawawiana* Shamim, sp. nov. resembles with *Homolobus* (*Apatia*) *indicus* Ahmad & Shujauddin. However, it differs in having (1) Antennal segments 43 (Antennal segments 40-42 in *indicus*) (2) Length of eye in dorsal view 2.6 times temple (Length of eye in dorsal view 1.6 times temple in *indicus*) (3) Vein 2A of forewing basally bare distinctly (Vein 2A of forewing basally sclerotized distinctly in *indicus*) (4) Hind coxa rugose, densely setose (Hind coxa mainly somewhat punctulate in *indicus*).

The new species *Homolobus* (*Apatia*) *etawawiana* Shamim, sp. nov. also resembles with *Homolobus* (*Apatia*) *ophioninus* (Vachal). However, it differs in having (1) Antennal segments 43 (Antennal segments 46 in *ophioninus* (Vachal) (2) Length of malar space 1.27 times basal width of mandible (Length of malar space 0.5 times basal width of mandible in *ophioninus* (Vachal) (3) Length of hind tibial spurs 0.42 and 0.55 times hind basitarsus (Length of hind tibial spurs 0.7 and 0.5 times hind basitarsus in *ophioninus* (Vachal) (4) Clypeus, smooth, strongly convex; (Clypeus, punctulate, convex in *ophioninus* (Vachal) (5) Notauli broad, deep, anteriorly crenulate, posteriorly reticulate rugose with strong median longitudinal carina (Notauli closely crenulate, anteriorly and almost smooth in *ophioninus* (Vachal)).

***Homolobus (Apatia) kanpurensis* Shamim, sp. nov.**

(Figures 10-19)

Description:

Body length: 12.5 mm, Forewing: 11 mm, Antenna: 14.7 mm

Head: Width of head in dorsal view 1.35 times its length; antennal segments 42, length of F_1 1.1 times F_2, length of F_1- F_2, F_3-F_8, F_9- F_{12}, F_{13}- F_{14}, F_{15}-F_{18}, F_{19}-F_{39}, and F_{40} 3.1 times, 2.75 times, 2.85 times, 2.5 times, 2.1 times, 1.7 times and 2.5 times their width respectively, apical flagellomere pointed; length of outer aspect of 4th segment of labial palp 1.4 times 3rd segment; length of eye in dorsal view 2.5 times temple and 1.57 times its width; eyes indistinctly emarginated; OOL: POL: AOL: OD = 13: 8:8: 15; vertex 2.36 times as wide as long, smooth, spasely setose; frons 1.77 times as wide as long, smooth; near eye margin sparsely setose; depressed medially; between antennal sockets median carina visible; face 1.65 times as wide as long, punctate, setose; clypeus 1.8 times as wide as long, smooth, sparsely setose, slightly convex; ocelli oval shaped and large; lateral side of stemmaticum 1.8 times its posterior side; occipital carina complete; intertentorial line 2.5 times tentorio-ocular line, tentorial pit deep and round; length of malar space 1.2 times basal width of mandible.

Mesosoma: Length of mesosoma 2.1 times its height and 1.8 times its width; pronotal sides anteriorly reticulate rugose, posteriorly smooth, largely setose; precoxal sulcus wide, reticulate rugose, setose**;** mesopleuron dorsally reticulate rugose, remaining sparsely punctate, setose; metapleuron dorsally smooth, sparsely setose, ventrally reticulate, densely setose; epicnemial area smooth sparsely setose; notauli complete broad, deep, anteriorly crenulate, posteriorly reticulate rugose with strong median longitudinal carina; middle lobe smooth, sparsely setose; lateral lobes, sparsely punctate setose; scutellar sulcus wide, deep with one median longitudinal carina; scutellum convex, smooth, side of scutellum crenulate; medio-posterior depression oval shaped, wide, deep with one median carina; metanotum crenulate; propodeum apically and medially reticulate rugose, basally carinate with three areola.

Forewing: Length of forewing 3.4 times its width; length of pterostigma 4.5 times its width; SR1 slightly curved; r arising at middle of pterostigma; r 1.2 times as long as width of pterostigma; length of vein 1R1 1.5 times length of pterostigma; 1-CU1: 2-CU1: 3-CU1 = 12: 48: 20; cu-a inclivous postfurcal; vein 2A well developed, shortly sclerotized, basally; r: 3-SR: SR1= 15: 26: 115; 2-SR: 3-SR: r-m= 20: 26: 12; Hind wing: Length of hind wing 4.1 times its width; vein SC+R1 slightly curved; 2SC+R thick, comparatively short, vertical; SR strongly curved, vein r absent; 1-M: 1-r-m: 2-SC+R = 40: 25: 15.

Hind leg: Hind coxa punctate, densely setose; length of hind femur, tibia and basitarsus 5.8 times 10 times and 8 times their widths respectively; length of hind tibial spurs 0.46 times and 0.65 times hind basitarsus; tarsal claws simple, distinctly pectinate brown; spurs originates from each segments of tarsus except last segment.

Metasoma: Length of metasoma 3.7 times its width and 2.7 times its height; length of first metasomal tergite 2.75 times its apical width, apical width 1.6 times its basal width, its surface apically smooth, remaining rugose, first metasomal tergite medially depressed, apically and basally impreesed; apically more impressed than basally; length of ovipositor sheath 0.07 times forewing; ovipositor sheath thick, slender, densely setose; ovipositor apically pointed.

Colour: Yellowish brown except stemmaticum black; telotarsus, mandibles apically ovipositor sheath brown; hypopygium, malar space, wing veins, first and second metasomal tergite, brownish yellow; vertex, frons, labial and maxillary palp yellow; eyes grayish black; ocelli transparent yellow.

Male: Same as holotype except antennal segments 42; hind coxa rugose, sparsely setose; vein SR sclerotized, slightly curved; vein 2SC+R short; between antennal sockets median carina hardly visible.

Type material: Holotype female. INDIA: Uttar Pradesh, Kanpur, 26° 28' N 80° 24' 15 April 2008, Collector Mohammad Sharif & Mohammad Shamim (ZDAMU). Paratypes 1 female, INDIA: Uttar Pradesh, Etawah, 26° 47' N 79° 02' E 14, 18 April 2007, Collector Mohammad Shamim, 1 female, INDIA: Uttar Pradesh, Mainpuri, 27° 14' N 79° 03' E, 15 March 2006, Collector. Mohammad Shamim (ZDAMU).
Host: Unknown
Etymology: The species name refers to its type locality.
Discussion:

The new species *H.* (*A.*) *kanpurensis* Shamim, sp. nov. closely resembles with *H.* (*A.*) *indicus*. However, it differs in having (1)Length of eye in dorsal view 2.5 times temple (length of eye in dorsal view 1.6 times temple in *indicus*) (2) Frons depressed medially, smooth (Frons flat and somewhat coriaceous in *indicus*) (3) Vein SR of hind wing strongly curved (Vein SR of hind wing weakly sinuate in *indicus*) (4) Length of hind femur 5.8 times its width (Length of hind femur 6.5 times its width in *indicus*) (5) Length of first metasomal tergite 2.75 times its apical width, its surface apically smooth, remainder rugose (Length of first metasomal tergite 2.5 times its apical width, its surface longitudinally rugose in *indicus*) (6) Length of ovipositor sheath about 0.07 times of fore wing (Length of ovipositor sheath about 0.9 times of fore wing in *indicus*).

***Homolobus (Apatia) sharifi* Shamim, sp. nov.**

(Figures 20-28)

Description:
Body length: 12.05 mm, Forewing: 11.87 mm, Antenna: 16.2 mm
Head: Width of head in dorsal view 1.69 times its length; antennal segments 44, length of F_1 as long as F_2, length of F_1- F_2, F_3-F_{10}, F_{11}- F_{18}, F_{19}- F_{22}, F_{23}-F_{24}, F_{25}-F_{39}, F_{40}-F_{41} and F_{42} 3.12 times, 3.33 times, 3.6 times, 3 times, 2.4 times, 2 times, 1.75 times and 3.33 times their width respectively, apical flagellomere pointed; length of outer aspect of 4th segment of labial palp 1.9 times 3rd segment; length of eye in dorsal view 2.5 times temple and 1.42 times its width; eyes weakly emarginated; OOL: POL: AOL: OD = 15: 7: 5: 15; vertex 2.42 times as wide as long, smooth, spasely setose; frons almost 2 times as wide as long (55:27), smooth; near eye margin sparsely setose; slightly depressed medially; between antennal sockets median carina visible; face 1.48 times as wide as long, medially sparsely punctate, remaining strigose, sparely setose; clypeus 1.75 times as wide as long, smooth, sparsely setose, convex; ocelli somewhat oval shaped and large; lateral side of stemmaticum 1.4times its posterior side; occipital carina complete; intertentorial line 1.83 times tentorio-ocular line, tentorial pit deep; length of malar space 1.2 times basal width of mandible.
Mesosoma: Length of mesosoma 1.8times its height and 2times its width; pronotal sides posteriorly and antero-dorsally crenulate, remaining smooth; precoxal sulcus wide, rugose- punctate, sparsely setose; mesopleuron antero-dorsally somewhat reticulate rugose, remaining smooth, setose; metapleuron dorsally smooth, sparsely setose, ventrally with some rugae; epicnemial area sparsely smooth; notauli broad, deep, anteriorly crenulate, posteriorly reticulate rugose with strong median longitudinal carina; middle lobe smooth, densely setose; lateral lobes smooth, sparsely setose; scutellar sulcus wide, deep with one median longitudinal carina and two weak lateral carinae; scutellum convex, smooth, side of scutellum crenulate; medio-posterior depression somewhat oval shaped, wide, deep with one median carina; metanotum crenulate; propodeum apically densely rugose, basally carinate with three areola.

Forewing: Length of forewing 2.79 times its width; length of pterostigma 3.6 times its width; SR1 slightly curved; r arising at middle of pterostigma; r 0.8times as long as width of pterostigma; length of vein 1R1 1.44 times length of pterostigma; 1-CU1: 2-CU1: 3-CU1 = 10: 50: 22; cu-a postfurcal; vein 2A well developed, shortly sclerotized, area basally of 2A remotely setose; r: 3-SR: SR1= 20: 30: 120; 2-SR: 3-SR: r-m= 28: 30: 15; Hind wing: Length of hind wing 4.21times its width; vein SC+R1 straight; 2SC+R thick, comparatively long, vertical; SR basal third sclerotized and strongly curved, vein r absent; 1-M: 1-r-m: 2-SC+R = 45: 24: 15.

Hind leg: Hind coxa densely setose, dorsally rugose, ventrally punctate; length of hind femur, tibia and basitarsus 6.25, 10.55 and 13.55 times their widths respectively; length of hind tibial spurs 0.45 times and 0.57 times hind basitarsus; tarsal claws simple, distinctly pectinate brown; spurs originates from each segments of tarsus.

Metasoma: Length of metasoma 3.33 times its width and 4 times its height; length of first metasomal tergite 2.28 times its apical width, apical width 1.66 times its basal width, its surface densely rugose, first metasomal tergite medially depressed, apically and basally impreesed; apically more impressed than basally; length of ovipositor sheath 0.04 times forewing; ovipositor sheath thick, slender, densely setose; ovipositor apically pointed.

Colour: Yellow except stemmaticum black; telotarsus, F_1-F_{42}, ovipositor sheath brown; first and second metasomal tergite, femur, tibia, tarsus, trochantellus and telotarsus yellowish brown; eyes grayish black; ocelli transparent yellow and wing veins brownish yellow.

Male: Same as holotype except antennal segments 42; hind coxa rugose, sparsely setose; vein SR sclerotized, slightly curved; vein 2SC+R short; between antennal sockets median carina hardly visible.

Type material: Holotype female. INDIA: Uttar Pradesh, Kanpur, 26° 28' N 80° 24' 15 April 2005, Collector Mohammad Sharif (ZDAMU). Paratypes 1 female, INDIA: Uttar Pradesh, Etawah, 18 April 2006, Collector Mohammad Sharif, 1 female, INDIA: Uttar Pradesh, Mainpuri, 27° 14' N 79° 03' E 15 March 2006, Collector. Mohammad Sharif (ZDAMU).

Host: Unknown

Etymology: The species is named in memory of my late father, Mohammad Sharif, who collected these parasitoids.

Discussion:

The new species *H*. (*A*.) *sharifi* Shamim, sp. nov. also closely resembles with *H*. (*A*.) *truncator*. However, it differs in having (1) Length of malar space 1.2 times basal width of mandible (Length of malar space 0.5 times basal width of mandible in *truncator*) (2) Antennal segments 44 Antennal segments 50 in *truncator*) (3) Frons smooth, near eye margin sparsely setose; depressed medially (Frons almost flat, with some superficial striae near antennal socket in *truncator*) (4) Length of first metasomal tergite 2.28 times its apical width (Length of first metasomal tergite 3.2 times its apical width *in truncator*) (5) Propodeum apically densely rugose, basally carinate with three areola (Propodeum narrowly smooth anteriorly and with a short median carina medially and posteriorly reticulate rugose in *truncator*).

The new species *H*. (*A*.) *sharifi* Shamim, sp. nov. resembles with *H*. (*Apatia*) *etawawiana* Shamim, sp. nov. However it differs in having (1) Antennal segments 44 (Antennal segments 43 in *etawawiana*) (2) Length of vein 1-R1 1.44 times length of pterostigma (length of vein 1-R1 1.35 times length of pterostigma in *etawawiana*) (3) Vein SC+R1 of hind wing straight (Vein SC+R1 of hind wing

slightly curved in *etawawiana*) (4) Vein 2A of forewing well developed, area basally of 2A remotely setose (Vein 2A of forewing shortly developed, area basally of 2A mainly bare in *etawawiana*) (5) F_1 as long as F_2 (F_1 1.2 times F_2 in *etawawiana*).

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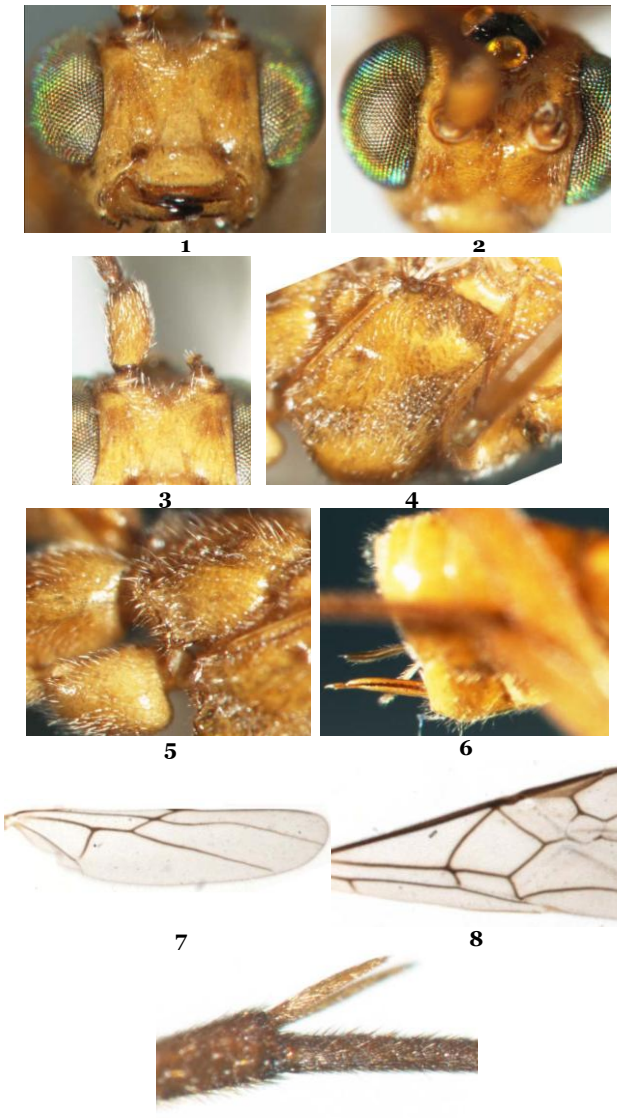

Figures 1-9. *Homolobus* (*Apatia*) *etawawiana* Shamim, sp. nov.; 1. Head in frontal view, 2. Head in dorsal view, 3. Head showing antennal sockets, 4. Mesosoma showing precoxal sulcus and mesopleuron, 5. Mesosoma showing mesopleuron and metapleuron, 6. Metasoma showing ovipositor and sheath, 7. Hind wing, 8. A part of Forewing, 9. Hind leg showing tibial spurs.

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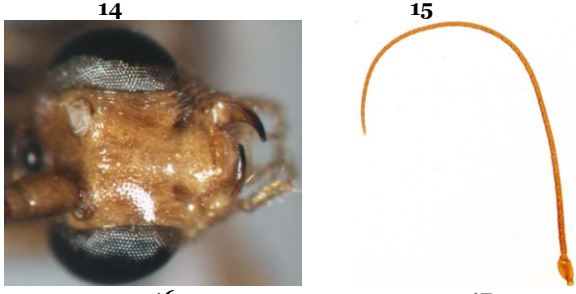

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Figures 10-19 *Homolobus* (*Apatia*) *kanpurensis* Shamim, sp. nov.; 10. Fore wing, 11. Hind wing, 12. Metasoma lateral view, 13. Head dorsal view, 14. Hind leg, 15. Part of mesosoma showing notauli, 16. Head ventral view, 17. Antenna, 18. Part of mesosoma showing pronotal side, 19. Part of mesosoma showing mesopleuron.

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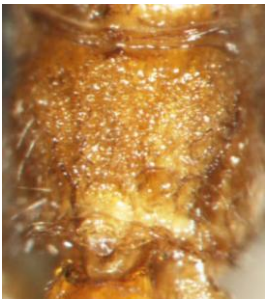

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Figures 20-27. *Homolobus* (*Apatia*) *sharifi* Shamim, sp. nov.; 20. Head in dorsal view, 21. Mesosoma showing Propodeum, 22. Hind leg showing tibial spurs, 23. Head in frontal view, 24. Metasoma in lateral view, 25. Hind wing, 26. Forewing, 27. Antenna.