

Five new species of *Asthenara* Foerster from Mexico (Hymenoptera: Ichneumonidae: Ctenopelmatinae)

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A key to 6 North American species of the genus *Asthenara* is given. Five new species of *Asthenara* are described from Mexico: *A. atrator*, *A. chiapas*, *A. michoacan*, *A. coahuila*, *A. guerrero*.

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Only 3 species were hitherto known in the genus *Asthenara* Foerster (Gauld et al., 1997; Yu & Horstmann, 1997); two Palearctic species (*A. scabricula* Thomson and *A. socia* Holmgren) and the Neotropical *A. donlona* Gauld from Costa Rica. In the collections of A & M Texas University (TAMU, College Station, Texas, USA), Universidad Autónoma de Nuevo Leon (UANL, Monterrey, Mexico), and Insects Museum of Universidad Autónoma de Tamaulipas (UAT, Ciudad Victoria, Mexico), the author was able to find five new Neotropical species, all from Mexico. These species are described below. A key to 6 North American species of *Asthenara* is given. The genus belongs to the tribe Pionini of the subfamily Ctenopelmatinae; all representatives of the subfamily are endoparasitoids of sawfly larvae.

The following characters are typical of all species of *Asthenara*: large lower tooth of mandible; short cheeks; sharp notauli; prepectal carina complete, its upper end on front margin of mesopleurum (close to level 0.5 of hind margin of pronotum); areolet absent; Cu_1 just distad of basal vein very weakly intercepted; transverse basal groove of propodeum not so deep as in other species of Pionini; first abdominal segment without glymma, with narrow and long petiole.

Key to American species of *Asthenara*

1. Frons just above antennal sockets with a median horn (Fig. 1) 2
- Frons without any horn. – Abdomen orange or orange-brown (except sometimes for black first segment) 4
2. Propodeum without carinae (except for pleural carinae). Abdomen black; tergites 2 and 3 with a common median longitudinal pale band. Fore and middle femora white anteriorly and black dorsally. Coxae white; hind coxa black dorsally. Hind tibia and

- hind tarsus blackish. Thorax black with large white spot in hind corner of pronotum; apex of epimeron, scutellum and postscutellum white 1. ***A. atrator*** sp. n.
- Propodeum with lateral and/or dorsal longitudinal carinae (in addition to pleural carinae) (Fig. 2).
 3. Tergites 1-3 entirely light yellow; tergites 4-7(8) and parameres of male black. Hind coxa black with ventro-posterior and posterior side yellowish; hind femur black with yellowish base and apex; hind tibia and tarsus uniformly reddish yellow. Thorax and propodeum black with lower 0.3 of propleurum, triangular spot in hind corner of pronotum, both pairs of tegulae, and apex of scutellum yellow 2. ***A. chiapas*** sp. n.
 - First segment of abdomen entirely, most part of second segment and segments (5)6-8 black; apex of segment 2, tergites 3 and 4 (except for large lateral blackish spots) brownish red. Hind coxa black, apically with yellowish dorsal and ventral spots; hind femur red, blackish posteriorly; hind tibia and tarsus dirty reddish yellow, tibia paler at base and darker on posterior side. Flagellum completely blackish 3. ***A. coahuila*** sp. n.
 4. Thorax and propodeum black with a few pale spots. Propodeum with dorsal longitudinal carinae complete, extending from base to apex of propodeum (Fig. 3). Mesoscutum black. – Hind coxa reddish with anterodorsal margin and dorsal spot in apical half brown; hind femur red; hind tibia reddish yellow. Flagellomeres 1-14(15) yellowish (in female, 4 basal segments fuscous dorsally), apical segments blackish. Tergite 1 black in basal half; other tergites reddish yellow; in male 2nd and 3rd tergites with basolateral fuscous spots 4. ***A. michoacan*** sp. n.
 - Prothorax and mesopleurum predominantly white; metapleurum and propodeum pale orange or very light pale brown. Apical area of propodeum without distinct median longitudinal carinae (Fig. 4). Mesoscutum with central pale spot 5
 5. Head with temples and vertex predominantly black. Hind coxa reddish with anterodorsal fuscous stripe (stripe not extending to base of coxa); hind tarsus light brownish. Prothorax entirely white in female, with black transverse band in male. Mesopleurum black above the level of mesopleural pit; lower half of mesopleurum, subtegular ridge, and mesepimeron

white. Propodeum (Fig. 4) pale with basal groove and first lateral areas predominantly black. First abdominal segment entirely black in female (except for triangular apical pale spot), with only petiole black in male 5. **A. guerrero** sp. n.

– Head with temples and vertex predominantly white. Hind legs entirely orange; femora dorsally slightly infusate. Prothorax white; pronotum centrally black. Mesopleurum white with upper anterior part below subalar prominence black. Propodeum orange-brown. First abdominal segment orange, only sternite 1 black. – Costa Rica **A. donlona**e Gauld

1. *Asthenara atrator* sp. n.

Holotype. ♀, **Mexico**, Guerrero, 7 mi SW Filo de Caballo, 12.VII.1985 (J. Woolley, G. Zolnerowich); UAT.

Description. Female (holotype). Fore wing 5.6 mm long; length of body 6 mm. Antenna thin, filiform, at the apex setiform, with 36 flagellomeres. Frons with a median horn just above the level of antennal sockets (Fig. 1). Body polished, with very fine punctures. Propodeum without carinae, except for pleural carinae.

Head black with face, clypeus, orbital mark on frons, cheeks, mandibles, palpi white. Scape and pedicel dark brown with reddish brown upper margin; flagellum blackish brown dorsally and on segments 1-5(6) entirely; its segments 7-20 ventrally yellowish brown, apical segments darkened ventrally. Thorax and propodeum black; lower 0.2 of propleurum, lower corner of pronotum, large spot on posterior 0.7 of dorso-lateral margin of pronotum, both pairs of tegulae, line on subtegular ridge, apex of mesepimeron, scutellum and postscutellum white. Coxae and trochanters white, except that hind coxa and hind trochanter I both black dorsally. Fore and middle femora white anteriorly and blackish posteriorly; tibiae and tarsi yellowish with dorsal surface brownish. Hind femur black; hind tibia and tarsus blackish brown. Abdominal tergites black with hind margin of tergites 2-7 narrowly white and tergites 2 and 3 with broad median very pale brownish band; epipleura and sternites of segments 2-4 and partly sternite 5 white (sternite 5 with a median brown spot); sternite 6 (hypopygium) yellowish.

2. *Asthenara chiapas* sp. n.

Holotype. ♂, **Mexico**, Chiapas, Mpio: San Cristobal, Reserva Huitepec, 8000 ft, 16°46'06''N, 92°41'04''W, 2-14.VIII.1997, Malaise trap, 97/072 (Woolley, Gonzales, Galdamez); TAMU.

Paratypes. **Mexico**, Chiapas: 2 ♂, label as in holotype; 1 ♂, same locality, Malaise trap, 28.VIII.1990 (R.W. Jones) (TAMU); 1 ♂, same data as for holotype, CIB 97-072 (A. Gonzales Hdz.) (UANL).

Description. Male. Fore wing 6 mm long. Antenna with 34-37 flagellomeres. Frons with a median horn just above the level of antennal sock-

ets. Body polished, with very fine punctures. Nervulus antefurcal to interstitial. Nervellus intercepted at lower 0.35. Propodeum beyond the costulae without submedian longitudinal carinae (Fig. 2).

Head black with face, clypeus, orbits of frons, cheeks, mandibles, palpi yellow. Scape and pedicel yellow, brownish dorsally; flagellum reddish brown to yellowish in basal 0.65 (lighter ventrally) and with apical 0.3 entirely blackish or brownish. Thorax and propodeum black with lower 0.3 of propleurum, triangular spot in hind corner of pronotum, both pairs of tegulae, and apex of scutellum yellow. Fore and middle legs light yellow. Hind coxa black with ventro-posterior and posterior side yellowish; hind trochanters yellowish, trochanter II brownish dorsally, hind femur black with extreme base yellow and apical 0.2 reddish yellow. Hind tibia and tarsus uniformly reddish yellow. Pterostigma blackish. Abdomen with tergites 1-3 and spot at base of tergite 4 yellow; sternites 1-4 and partly sternite 5 whitish yellow; apex of abdomen black.

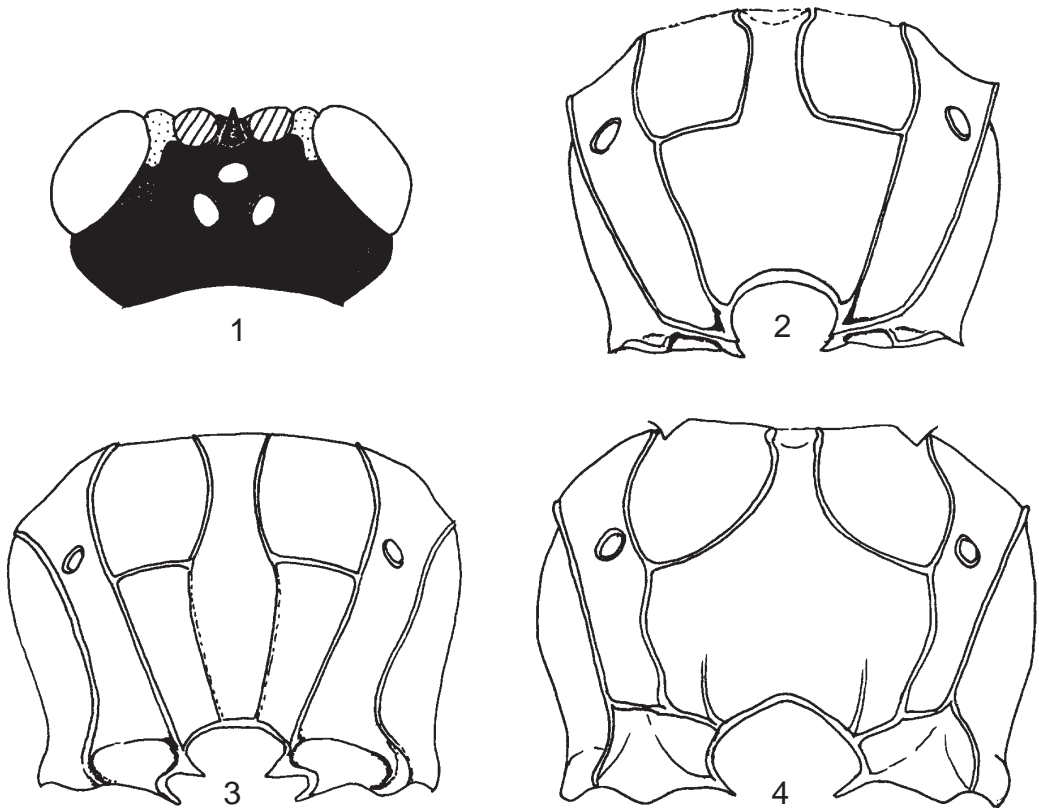
3. *Asthenara coahuila* sp. n.

Holotype. ♂, **Mexico**, Coahuila, Arteaga, Jame (7 km W Lirios), pine forest, 2300 m, 11.VII.2000 (Kasparyan); UAT.

Paratype. 1 ♂, same data as for holotype (UAT).

Description. Male. Fore wing 5.3 mm long. Antenna with 31-32 flagellar segments. Temples convex, very weakly narrowed to genae; genae slightly swollen. Frons with a median obtuse horn just between upper margins of antennal sockets. Clypeus evenly convex on lower margin; the margin rounded in profile. Body polished, with fine punctures and moderately long and moderately dense hairs. Nervulus strongly postfurcal. Nervellus intercepted at lower 0.1-0.27. Propodeum with three pairs of longitudinal carinae (more or less as in *A. michoacan*, Fig. 3), but all transverse carinae can be absent (in holotype) or costulae present (in paratype).

Head black with face, clypeus, mandibles, palpi yellow. Scape and pedicel yellow, brownish dorsally; flagellum blackish with some apical segments blackish brown. Thorax and propodeum black with hind corners of pronotum, both pairs of tegulae, and subtegular ridge yellow; apex of mesepimeron reddish brown. Fore and middle legs light yellow. Hind coxa black with ventral yellow spot in apical 0.3 and apical yellow stripe on dorsoposterior margin; hind trochanters brownish with yellowish spots. Hind femur red, blackish posteriorly; hind tibia and tarsus dirty reddish yellow, tibia paler at base and darker (brownish) on posterior side. Pterostigma blackish. Abdomen with tergites 1-2 black; spot at apex



Figs 1-4. 1, *Asthenara atrator* sp. n., head, dorsal view; 2-4, propodeum, dorsal view: 2, *A. chiapas* sp. n.; 3, *A. michoacan* sp. n.; 4, *A. guerrero* sp. n.

of tergite 2, spot at base of tergite 5 and tergites 3-4 predominantly brownish red (tergites 3 and 4 with large lateral blackish spots). All epipleura and sternites reddish or light brownish.

4. *Asthenara michoacan* sp. n.

Holotype. ♀, **Mexico**, *Michoacan*, 2 mi S Carapan, 6.VII.1985 (Wooley, Zolnerowich); TAMU.

Paratype: ♂, same data as for holotype (TAMU).

Description. Female. Fore wing 5 mm long. Tips of antennae lost. Body polished. Nervulus weakly postfurcal; nervellus intercepted at lower 0.25. Submedian longitudinal carinae of propodeum rather weak, but complete and extending to its hind margin (Fig. 3); area posteromedial very superficially outlined by these carinae, confluent anteriorly with areola.

Head black with face, clypeus, spot beyond the mandible (malar space black), mandible, and palpi white. Scape and pedicel whitish yellow, brownish dorsally; flagellar segments 1-14(15)

yellow, segments 1-4(5) fuscous above, segments 10-14 the lightest; subsequent segments blackish. Thorax and propodeum black with only wide spot in hind corner of pronotum, tegulae, subtegular ridge, and hind margins of mesonotum and metanotum (except for black apical margins of scutellum and postscutellum) white. Fore and middle legs yellowish with coxae and trochanters white. Hind coxa, trochanters and femur predominantly reddish; coxa in apical half dorsally and on anterodorsal margin brown; trochanter I brown dorsally and laterally, trochanter II brown above at base and yellow ventrally at apex. Hind tibia reddish yellow; hind tarsus yellowish. Pterostigma yellowish brown. Abdominal tergites reddish yellow; 1st tergite black in basal half (basad the spiracles); 2nd tergite with basolateral fuscous spots.

Male similar to female, but malar space whitish, flagellar segments 1-4 entirely yellow, not darkened dorsally, 2nd and 3rd tergites with basolateral fuscous spots.

5. *Asthenara guerrero* sp. n.

Holotype. ♀, **Mexico**, *Michoacan*, 6 mi N Cheran, 8.VII.1985 (Wooley, Zolnerowich); TAMU.

Paratype. **Mexico**, *Guerrero*: 1 ♂, 2.1 mi NE Caca-huamilpa, 4.VII.1987, 5250 ft (R. Wharton) (TAMU).

Description. Female. Fore wing 5.5 mm long. Flagellum 32-segmented. Body polished. Submedian longitudinal carinae of propodeum beyond the costulae absent; lateral longitudinal carinae arched outside, thus area beyond the costulae very wide (Fig. 4). Antenna dark brown dorsally; flagellum reddish brown ventrally; scape and pedicel whitish ventrally.

Head anteriorly and lower 0.25 of temple white; median 0.4 of frons, vertex, upper 0.75 of temple and occiput black. Prothorax entirely white. Mesoscutum black with central subrectangular pale spot bifurcating anteriorly. Tegulae white. Mesopleurum black above the level of mesopleural pit, with subtegular ridge and mesepimeron white; lower 0.6 of mesopleurum white. Scutellum, postscutellum, and hind edge of mesonotum and metanotum (to hind tegulae) white. Metapleurum and propodeum pale orange with line beyond the mesepimeron, basal propodeal groove, and first lateral areas of propodeum black. Fore and middle legs yellowish with coxae and trochanters white. Hind coxa, trochanters and femur predominantly reddish; hind coxa with anterodorsal longitudinal dark band (not

reaching base of coxa); trochanter I brown dorsally and laterally; trochanter II brown above at base and yellow ventrally at apex. Hind tibia reddish yellow; hind tarsus light brownish. Abdominal tergites orange brown dorsally, paler laterally; first segment black, except for apical triangular pale spot.

Male similar to female, but temple predominantly white (except for upper 0.25), pronotum with black transverse band (band becomes wider and brownish to hind vertical margins of pronotum), first tergite only on petiole black.

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