

**A NEW SPECIES OF *UGA* GIRAULT  
(HYMENOPTERA: CHALCIDIDAE: HALTICELLINAE)  
FROM MOJAVE DESERT, CALIFORNIA, USA**

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**ABSTRACT:** In this paper a new species of *Uga* Girault, 1930 (Hymenoptera: Chalcidoidea: Chalcididae: Halticellinae), *U. ursulahassanae* sp. nov., was described from Mojave Desert, California, USA, its diagnostic characteristics were illustrated, compared that of the closer species, *Uga colliscutellum* (Girault, 1922).

**KEY WORDS:** New species, Chalcididae, Halticellinae, Mojave Desert, California, USA

*Uga* (Hymenoptera: Chalcidoidea: Chalcididae) was described by Girault, (1930) with its type species being *Stomatoceras colliscutellum* Girault, 1922, with Syntypes female Queensland Museum Brisbane (QMB), Australia-Queensland, as new combination for *S. colliscutellum* Girault. Later, *Uga* was recorded as a valid genus by Kerrich (1960), Boucek (1988) and Qian et al. (1992). Kerrich (1960) revised the world species up to that date by describing three new species, and Qian et al. (1992) revised the Chinese species by describing two more new species. Boucek (1988) keyed out *Uga* in the subfamily Halticellinae, and provided the diagnostic characteristics of the genus, stated that the genus contains one species in Australia, three spp. from South Asia, and one species from Africa. Noyes (2018) listed seven world species of *Uga*, and gave their synonyms, distributions and literature lists. Up till now, no *Uga* species have been recorded from the Nearctic Region.

Recently, some specimens of *Uga* sp. was obtained from the collection of the second author, Prof. Dr. E. Hassan, collected from Mojave Desert, California, USA, in 1984. They were sent to the first author for identification, and they were described as a new species for science.

### MATERIAL AND METHODS

The type specimens of the new species were obtained from Mojave Desert, California, USA, the insects were collected from a section of Mojave Desert where a fresh water spring was running through a shallow valley. The area was covered with small flowering shrubs and flowering ground plants. It was April 1984. Some specimens were collected using a sweeping net from ground plants. Other specimens were collected directly from the flowers of the shrubs using an aspirator, where insects were feeding on nectar or pollen by E. Hassan. Photographs of diagnostic characteristics of the new species were taken by using a Leica DM 500 microscopes with a digital Leica ICC 50 camera attached to it. Body figures of *Uga colliscutellum* (Girault) reproduced from the figures 35 and 43 of Boucek (1988) and from figs. 10, 11 of Kerrich (1960). Antenna and forewing

figures were taken by Mr Geoff Thompson and Miss. Susan Wright (Queensland Museum, Australia) from the Girault's original slides, prepared for description of *Stomatoceras colliscutellum* Girault, 1922.

Left antenna of the holotype and antennae and wings of the paratypes were slide-mounted in Canada balsam. Depositions of types of the new species are as follows: Holotype and five females, two males were deposited in the Insect Museum of California (ISMC); two females, one male, in the Canadian National Collection (CNC), Ottawa; two females, in the British Museum (Natural History), London; two females, one male in the Insect Museum of Biological Control Station, Yüreğir, Adana, Turkey (IMBC).

Morphological terminology follows Boucek (1988).

## RESULTS AND DISCUSSION

### *Uga* Girault, 1930

*Uga* Girault 1930: 4. Type species *Stamatoceras colliscutellum* Girault, 1922, by original designation.

*Neotainania* Hussain & Agarwal, 1982: 314, 335. Type species *Neotainania brevicorpis* Hussain & Agarwal, by original designation. *N. brevicorpis* is junior synonym of *Uga menoni* Kerrich, 1960. *N. brevicorpis* was also recognised by Farooqi (1983:200), Narendran (1984: 434; 1986: 41), and Agarwal (1984: 225).

**Diagnosis:** Head with vertex raised into tubercles mesad of each lateral ocellus, interocellar protuberances present, very weak to very strong; frons without distinct preorbital carinae; insertions of antennae a little higher, not directly above clypeus; apex of scape not produced, pedicellus of female not strongly transverse; considerably shorter, about one and a half times as long as broad; The scutellum unusually convex, mound like, very strongly raised, sub-pyramidally or semi-circularly arched; axillae separated from each other by the base of scutellum, densely silvery-pilose in Asiatic and Australian species; forewing with post marginal vein distinctly developed; but not reaching beyond tip of uncus; hind femur with comb starting about in middle or ventral edge on a subtriangular or very low tooth and continuing on low distal lobe; apex of hind tibia truncate, with two spurs.

Metasoma in female cordiform, shorter than thorax, first tergite large, covering well over half of dorsal side, more than half its total length dorsally (Kerrich, 1960; Boucek, 1988).

**Description:** Given in detail by Kerrich (1960).

### *Uga ursulahassanae* sp. nov.

(Figs. 1a-h)

**Diagnosis:** Forewings with marginal ciliae absent up to tip of fore wing; a more or less H-shaped fascia usually extended towards base; costal cell with speculum distinct, narrow, bare along apical part of costal vein up to submarginal vein; anterior margin of clypeus entire, labrum distinctly exerted; scutellum exceptionally strongly vaulted, middle lobe of mesoscutum pyramidal and scapulae strongly convex; hind femora with sharp lobe not acute; hind tibiae yellow, metasoma with first large tergite and the one (male) or four (female) following smooth above; last tergite of female keeled mid-dorsally; USA.

**Description of Female.** Length: 3.9-4.2 mm. Colour: Body (Fig. 1a) black, except mandibulae and metasoma dorsally reddish brown. Wings hyaline, with a more or less H-shaped fascia, developed by black setae, usually extended towards base, basal cell with some black setae, apically; veins black; antennae with scape black, except radícula and its basal tip testaceous, pedicel yellow, anellus pale

testaceous, flagellum brown, club apically yellow. Pilosity of body mostly white, Legs concolorous with body, except tibiae apically and tarsi yellow.

Morphology: Body with moderately coarse reticulation, except head (Figs. 3a-d) with scrobe cavity having fine transverse striae and fine reticulation, mesepisternum with coarse transverse striae, mesepimeron broadly striated. Antennae inserted distinctly below ocular line. Relative measurements: head dorsally (Fig. 1a) about 2.2x as wide as long; in lateral view (Figs. 1b,d) 1.67x as height as dorsal length; in frontal view (Fig. 1e) 1.35x as wide as height; frons width 2.62x eye width in frontal view; POL 2.7x OOL, Oola. 0.6x OOL, eye 1.36x as long as width; malar space 0.7x as long as eye length; postgena (Fig. 1d) 0.93x as wide as malar space; anterior margin of clypeus entire, labrum distinctly exerted (Fig. 1e). Antennae (Fig. 2a) with scape 5.6x as long as apical width, from basal to apical gradually tapering; pedicel 1.25x as long as width, 0.4x as long as anelli plus F1; flagellar segments almost filiform, only slightly widening and shortening towards tip; anellus 1.4x as wide as long; F1 1.25x apically wider than basal width, F1- F2 in same length, F1 1.7x, F2 1.54x, F3 1.33x as long as width; F4 F5 in same length, 1.25x longer than width, F6-F7 almost same length, 1.08x as long as width; club 2 segmented, 2.13x as long as width, 0.89x as long as 2 preceding segments combined; combined length of flagellum with pedicellus 3.33x as long as scape, the latter as long as length of eye. Sensillae on flagellum short and dense, with 4-5 longitudinal linear sensillae in 4-5 rows.

Mesosoma (Fig. 1a) 1.72x as long as mesoscutum width, and 1.38x as long as height; pronotum about 2.9x as wide as long; mesoscutum about 1.7x as wide as length, with moderately coarse reticulation, with fine setae, notauli deep, mid lobe of mesoscutum pyramidal and scapulae strongly convex, as wide as length; scutellum (Figs. 1g,f) scutellum exceptionally strongly vaulted, 1.1x as long as broad, with coarse reticulation, hind margin of scutellum with two horns; axillae wider than long. Forewing (Fig. 2c) 2.58x as long as broad; marginal ciliae absent up to tip of fore wing; costal cell (Fig. 2d) with 3 complete rows and in apical half 5-6 rows of long, black setae, 7.86x as long as breadth; speculum distinct, narrow, bare along apical part of costal vein up to submarginal vein (Fig. 2d); basal cell with some setae medially, basal vein absent; stigma almost as long as width, stigmal vein absent. Relative measurements of forewing: costal cell 55: 7; parastigma 7, marginal vein 12, post marginal vein 2, stigma (l: w) 3: 3, uncus 1. Hind coxae finely reticulate, with fine white setae, hind femora 1.92x as long as width; hind tibia 5x as long as width, apically entire, with two short setae. Propodeum (Fig. 1c) almost as long as scutellum, except horns, about 0.34x as long as distance between inner edges of spiracles, in middle with a median areola having two submedian carinae, plicae complete, between the median areola and plicae with 6 areolae, their sides having distinct carinae; spiracles close to posterior margin of metanotum, callus with many fine setae.

Metasoma (Fig. 1c) with petiole transverse, about 4x as wide as long; almost as long as mesosoma, broad, 1.36x as long as broad, its dorsal surface smooth, first tergite 0.55x as long as metasoma, second tergite as long as following two tergites. Ovipositor sheath only slightly exerted (Fig. 1f).

**Male:** Similar to female excepts as follows: Body 3.33-3.50 mm. Body (Figs. 3a,b) with slightly finer reticulation; Relative measurements: head dorsally (Figs. 3a,e) about 2.6x as wide as long; in lateral view (Figs. 3b,c) 1.62x as height as dorsal length; in frontal view (Fig. 3e) 1.3x as wide as height; frons (Fig. 3f) width 3.87x eye width in frontal view; POL 2.27x OOL, eye (Fig. 3d) 1.25x as long as width; malar space 0.87x as long as eye length; postgena (Fig. 3d) as wide as malar space; anterior margin of clypeus entire, labrum hidden (Fig. 3f). Antennae with

(Fig. 2b) with scape apically tapering, 5.0x as long as basal width, pedicel quadrate, 0.38x as long as anelli plus F1; anellus 4x as wide as long; F1 1.44x apically wider than basal width, F1 longest, 1.38x, F2-F5 1.21x, F6-F7 narrower than preceding segments, 1.17x as long as width; club 2.08x as long as width, 0.83x as long as 2 preceding segments combined; combined length of flagellum with pedicellus 3.64x as long as scape.

Mesosoma (Fig. 3b) 1.33x as long as metasoma; propodeum (Fig. 3g) almost as long as scutellum, except horns, about 0.58x as long as distance between inner edges of spiracles, in middle with a median areola having two submedian carinae, plicae complete, between the median areola and plicae with 3 areolae, their sides having distinct carinae, basal one almost quadrangular with some coarse reticulation and basal and apical ones almost quadrangular, with some rugae and coarse reticulation; other fovea long, 2.8x as long as width; spiracles close to posterior margin of metanotum.

Metasoma (Figs. 3b,h) 1.14x as long as width; first tergite 0.71x as long as metasoma, last tergite half mound-shaped.

**Host:** Unknown.

**Distribution.** USA: California, Mojave Desert.

**Material Examined:** HOLOTYPE female. USA: Mojave Desert, California, .IV.1984, swept from bush and shrubs around sides of founts, leg. E. Hassan. Depositions of types of the new species as follows: Holotype and 5 females, 2 males were deposited in the Insect Museum of California (ISMC); 2 females, 1 male, in the Canadian National Collection (CNC), Ottawa; 2 females, 1 male in the Insect Museum of Biological Control Station, Yüreğir, Adana, Turkey (IMBC); 2 females, in the British Museum (Natural History), London.

**Remarks.**

**In Female:** *Uga ursulahassanae* sp. nov. is similar to *Uga colliscutellum* (Girault) in having forewing with a more or less H-shaped fascia, developed by black setae, usually extended towards base but it differs from *U. colliscutellum* in having forewing 2.58x as long as broad, costal cell 7.86x as long as breadth; speculum distinct, narrow, along apical part of costal and submarginal vein bare (Figs. 2c,d); antennae (Fig. 2a) with pedicel 1.25x as long as width, 0.4x as long as anelli plus F1; anellus 1.4x as wide as long; F1 1.25x apically wider than basal width, F1- F2 in same length, F1 1.7x, F2 1.54x, F3 1.33x as long as width; F4 F5 in same length, 1.25x longer than width, F6-F7 almost same length, 1.08x as long as width; club 2.13x as long as width; combined length of flagellum with pedicellus 3.33x as long as scape; propodeum (Fig. 1c) about 0.34x as long as distance between inner edges of spiracles, between the median areola and plicae with 6 areolae, their sides having distinct carinae (in *U. colliscutellum* forewing 2.63x as long as broad, costal cell 10.57x as long as breadth; speculum absent; basal cell almost hairy (Figs. 5c,d); antennae (Figs. 5a1,a2) with pedicel 1.5x as long as width, 0.57x as long as anelli plus F1; anellus 1.6-1.75x as wide as long; F1 1.13x apically wider than basal width, F1- F4 in same length, F1 1.56x, F2 1.4x, F3 1.27x, F4 1.17x, F5 quadrate, F6-F7 0.92x, as long as width; club 2.63x as long as width; combined length of flagellum with pedicellus 2.96x as long as scape; propodeum (Fig. 1g) about 0.5x as long as distance between inner edges of spiracles, between the median areola and plicae with 3 areolae, their sides having distinct carinae).

**In male:** *Uga ursulahassanae* sp. nov. having antennae (Fig. 2b) with F1 1.44x apically wider than basal width, F1 1.38x, F2-F5 1.21x, F6-F7 narrower than preceding segments, 1.17x as long as width; club 2.08x as long as width, 0.83x as long as 2 preceding segments combined; combined length of flagellum with

pedicellus 3.64x as long as scape (in *U. colliscutellum* antennae (Fig. 5b) with F1 1.63x apically wider than basal width, F1 1.5x, F2-F3 1.21x, F4-F5 1.15x, F6-F7 1.13x as long as width; club 2.5x as long as width, 0.93x as long as 2 preceding segments combined; combined length of flagellum with pedicellus 4.2x as long as scape).

### ***Uga colliscutellum* (Girault, 1922)**

*Stomatoceras colliscutellum* Girault, 1922: 148. Syntypes females, QMB, Australia-Queensland.

*Uga colliscutellum* Girault, 1930: 4. New combination for *Stomatoceras colliscutellum* Girault, 1922.

**Diagnosis:** Forewings with a more or less H-shaped fascia usually extended towards base: axillulae large, densely silvery-pilose; metasoma with first large tergite and the one (male) or four (female) following smooth above: last tergite of female keeled mid-dorsally: hind femora with sharp lobe not acute; scutellum exceptionally strongly vaulted, middle lobe of mesoscutum pyramidal and scapulae strongly convex: sculpture of head and thorax coarser than other species: Australia (Kerrich, 1960).

**Description:** Head (Figs. 4a,b), seen from above, broadly and very deeply emarginated anteriorly, strongly narrowed but not much rounded behind eyes, 0.5 times eye length behind eye; with inter-ocellar protuberance of moderate strength; in facial view with cheeks narrowed at about half a right angle and hardly rounded. Antennal flagellum of female distinctly swollen, having seventh segment quadrate; that of male distinctly tapering from second segment, having first segment over one and a half times as long as broad and seventh distinctly broader than long. Mesosoma (Figs. 4a,b) with pronotum, mesoscutum and scutellum exceptionally strongly vaulted, the pronotum rising in middle almost to a point, the scapulae strongly convex, the middle lobe of mesoscutum pyramidal and the scutellum strongly so. Hind coxae (Fig. 4a) having normally silvery-pubescent, with rugose, coarse sculpture. Hind femora and tibiae more rugose than that in the other species. Fore wings with a more or less H-shaped fascia, usually extended towards base.

**Some additional characters as follows:** Antenna black; Legs (Fig. 4a) concolorous with body, except fore tibia and fore and mid tarsi yellow; hind tarsus brown.

**Morphology:** Similar to the new species from USA, excepts as follows: Body (Figs. 4a,b) with moderately coarse reticulation, Relative measurements: head dorsally about 2.2x as wide as long; in lateral view 1.91x as height as long; in frontal view 1.15x as wide as height; frons width 2.6x eye width in frontal view; POL 3.5x OOL, Odia. 0.83x OOL, eye 1.44x as long as width; malar space 0.52x as long as eye length; gena 1.18x as wide as malar space; Antennae (Figs. 5a1,a2) with scape 5.0x as long as apical width, pedicel 1.5x as long as width, 0.57x as long as anelli plus F1; anellus 1.6-1.75x as wide as long; F1 1.13x apically wider than basal width, F1- F4 in same length, F1 1.56x, F2 1.4x, F3 1.27x, F4 1.17x, F5 quadrate, F6-F7 0.92x, as long as width; club 2 segmented, 2.63x as long as width, 0.84x as long as 2 preceding segments combined; combined length of flagellum with pedicellus 2.96x as long as scape.

Mesosoma (Figs. 4a,b) 1.23-1.33x as long as mesoscutum width, and 1.35x as long as height; pronotum about 3.5x as wide as long; mesoscutum about 1.9x as wide as length, with coarse reticulation, mid lobe of mesoscutum 1.17x as wide as length; scutellum (Figs. 4b-d) scutellum 1.31x as long as broad. Forewing (Fig. 5c)

2.63x as long as broad, costal cell 10.57x as long as breadth; speculum absent; basal cell almost hairy, basal vein absent, medially with some black setae; stigma almost as long as width, stigmal vein absent. Relative measurements of forewing (Figs. 5c,d): costal cell 75:7; parastigma 8, marginal vein 12, post marginal vein 4, stigma (l: w) 3: 3, uncus 1. Hind femora 1.64x as long as width; hind tibia 7x as long as width. Propodeum (Fig. 4d) about 0.5x as long as distance between inner edges of spiracles, in middle with a median areola having submedian carinae, plicae complete, between the median areola and plicae with 4 areolae, their sides having distinct carinae, basal one almost quadrangular with some coarse reticulation and apical ones, triangular and ellipsoidal with some rugae or smooth; other areola long, with some transverse carinae, 2.5x as long as width; spiracles close to posterior margin of metanotum, callus with many setae.

Metasoma (Figs. 4a,b) with a transverse petiole, slightly shorter than mesosoma, broad, 1.34x as long as broad, its dorsal surface finely reticulated. Ovipositor sheath almost hidden.

**Male:** Similar to female except as follows: antennae (Fig. 5b) with scape apically tapering, 5.0x as long as basal width, pedicel quadrate, 0.4x as long as anelli plus F1; anellus 4x as wide as long; F1 1.63x apically wider than basal width, F1 1.5x, F2-F3 1.21x, F4-F5 1.15x, F6-F7 1.13x as long as width; club 2.5x as long as width, 0.93x as long as 2 preceding segments combined; combined length of flagellum with pedicellus 4.2x as long as scape.

AUSTRALIA: Queensland, Brisbane, 2 Females, ex *Epilachna 28-punctata* Fabr., xi.1915 (H. Jarvis per H. Tryon) (one the holotype); 1 male, i. 1930 (A. R. Brimblecombe) (labelled as allotype); 1 female, i.ix.1931 (H. Tryon).

Holotype Female, allotype, and two specimens in Queensland Museum, Brisbane.

**Conclusions:** Up till now the known hosts of the species of *Uga* are *Epilachna* spp. (Coleoptera: Coccinellidae), and they are very important biological control agents against for those pests in all over the world. Due to this reason the host(s) and economic importance of *Uga ursulahassanae* n. sp. Should be studied in the Nearctic region as soon as possible.

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The authors wish to thank to Mr. Geoff Thompson and Miss. Susan Wright (Queensland Museum, Australia) from the Girault's original slides, prepared for description of *Stomatoceras colluscutellum* Girault, 1922 for taken the photos of antenna and forewings. We also very grateful to the Library of the University of Queensland, Australia for their help in providing references of Qian, Y., Li, X. L. & He, J. H. (1992) in *Entomotaxonomia*.

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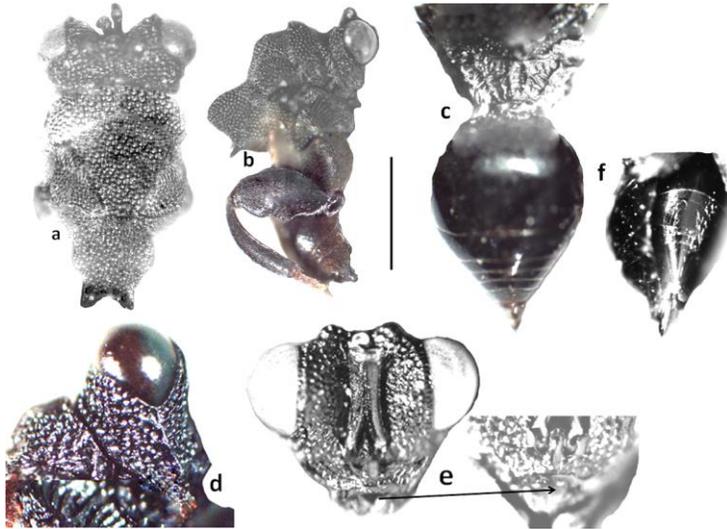


Figure 1. *Uga ursulahassanae* n. sp. Female. a, head and mesosoma; b, body in lateral view; c, propodeum and metasoma; d, e, head, d, in lateral view; e, in frontal view; f, metasoma in ventral view (Scale bar: for a,c = 1.05 mm; for b,f = 1.6 mm; for d,e = 0.67 mm).

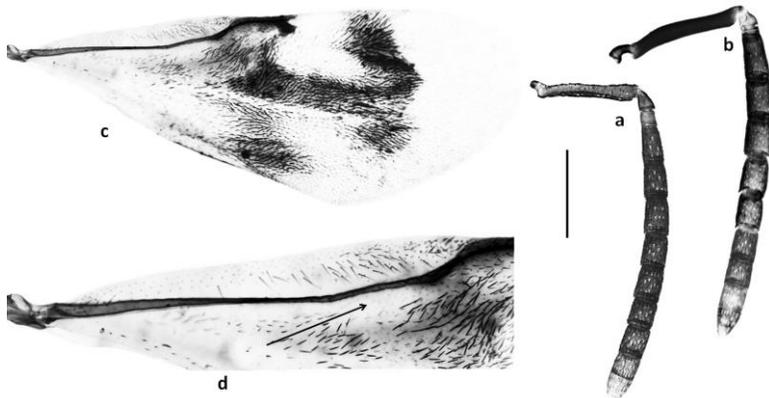


Figure 2. *Uga ursulahassanae* n. sp. a, female antenna; b, male antenna; c, forewing; d, costal and basal cell (Scale bar: for a, b = 0.38 mm; for c = 0.50 mm; for d = 0.30 mm).

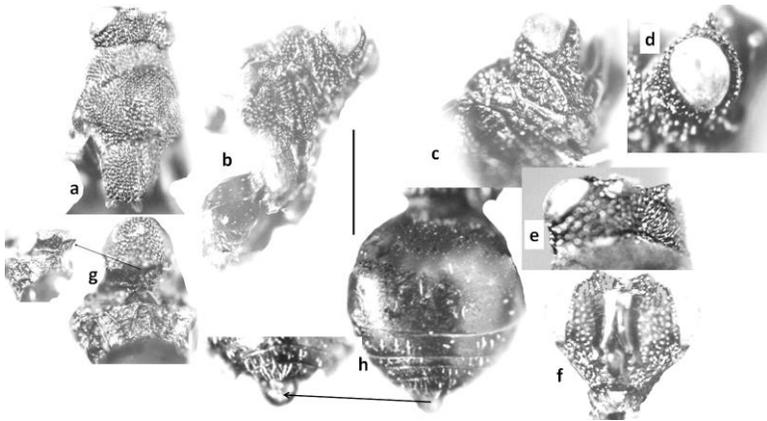


Figure 3. *Uga ursulahassanae* n. sp. Male. a, head and mesosoma; b, body in lateral view; c-f, head, c. in lateral view; d, focused on eye; e, in dorsal frontal view; f, in frontal view; g, scutellum and propodeum; h, metasoma, in dorsal view (Scale bar: for a, b = 1.26 mm; for c-g = 0.67 mm; for h = 0.72 mm).

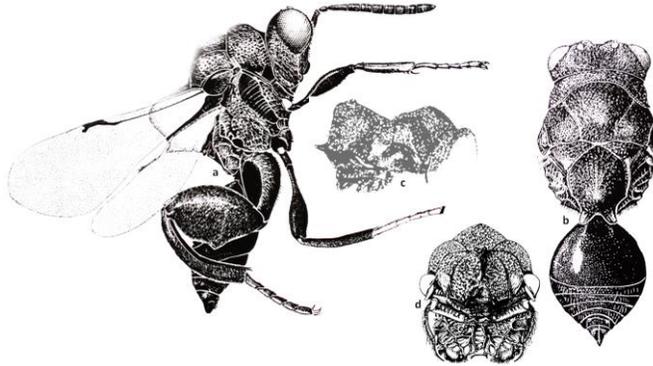


Figure 4. *Uga colliscutellum* (Girault, 1922). Female. a, b, body (reproduced from figs. 35, 43 of Boucek, 1988), a, lateral view; b, dorsal view; c, d, mesosoma ((reproduced from figs. 10, 11 of Kerrich, 1960).

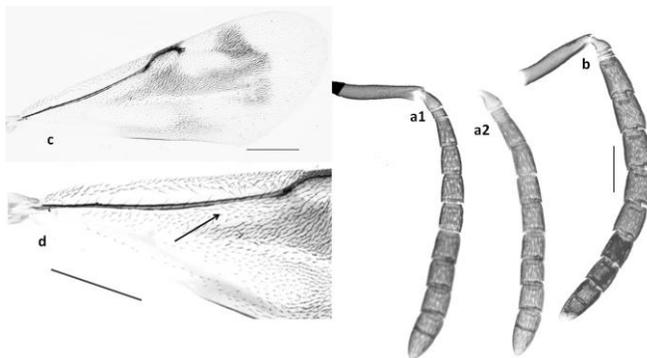


Figure 5. *Uga colliscutellum* (Girault, 1922). a1, a2, b, antennae, a1, a2, female; b, male; c, forewing; d, costal and basal cell (Scale bar: for a, b = 0.38 mm; for c = 0.50 mm; for d = 0.30 mm).