

New records, two new synonyms and one new species of *Holhymenia* LE PELETIER & SERVILLE, 1825 (Hemiptera: Heteroptera: Coreidae: Anisoscelini) from Bolivia and Ecuador*

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Abstract

One new species, *Holhymenia riegeri* nov. spec., is described from Bolivia and Ecuador. *Holhymenia intermedia* (BURMEISTER, 1835) and *H. tibialis* BREDDIN, 1904, are considered junior synonyms of *H. clavigera* (HERBST, 1784); new records of *H. histrio* (FABRICIUS, 1803), *H. persimilis* BREDDIN, 1903, *H. rubiginosa* BREDDIN, 1904, and *H. scenica* (STÄL, 1865) are given; a key to all known species is included.

Keywords: Heteroptera, Coreidae, Anisoscelini, *Holhymenia*, new species, new synonyms, new records.

Kurzfassung

Eine neue Art der Gattung *Holhymenia* LE PELETIER & SERVILLE, 1825 (Hemiptera: Heteroptera: Coreidae: Anisoscelini) von Bolivien and Ecuador

Eine neue *Holhymenia*-Art, *Holhymenia riegeri* nov. sp., aus Bolivien und Ecuador wird beschrieben. *H. intermedia* (BURMEISTER, 1835) und *H. tibialis* BREDDIN, 1904, werden als Synonyme von *H. clavigera* (HERBST, 1784) aufgefasst. Neue Funde von *H. histrio* (FABRICIUS, 1803), *H. persimilis* BREDDIN, 1903, *H. rubiginosa* BREDDIN, 1904, und *H. scenica* (STÄL, 1865) werden mitgeteilt. Für alle bekannten Arten wird ein Bestimmungsschlüssel aufgestellt.

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Introduction

The genus *Holhymenia* LE PELETIER & SERVILLE, 1825 belongs to the tribe Anisoscelini, subfamily Coreinae of the family Coreidae. Prior to this study, eight species have been considered valid (PACKAUSKAS 2010, LIVERMORE et al. 2013). The genus occurs in the tropical and subtropical regions of the Western Hemisphere with the majority of the species being distributed in South America.

In the present paper two new synonymies are proposed [*H. intermedia* (BURMEISTER) = *H. clavigera* (HERBST) and *H. tibialis* BREDDIN = *H. clavigera* (HERBST)], and one new species is described from Bolivia and Ecuador. As a result, seven valid species are currently included in the genus which is characterized by having the hind tibiae slightly expanded on both sides, outer expansion wider than inner, and both running entire length of tibiae; corium almost entirely hyaline with very distinct dark brown venation; pronotum with pronotal expansions at the sides of scutellum; antennal segments II and III expanded laterally; antennal segment IV yellowish white. A key to all the valid species of the genus is given.

Materials and methods

Acronyms used for institutions cited in the paper are: CASC (California Academy of Sciences, San Francisco, USA); CMNH (Carnegie Museum of Natural History, Pittsburgh, PA, USA); DEIC (Deutsches Entomologisches Institut, Eberswalde, Germany); FSCA (Florida State Collection of Arthropods, Gainesville, Florida, USA); INBIO (Instituto Nacional de Biodiversidad, Santo Domingo de Heredia, Costa Rica); INPA (Instituto Nacional de Pesquisas da Amazonia, Manaus, Brazil); JEEC (Joe E. Eger Collection); JMAC (Juan Manuel Ayala Collection); LACM (Natural History Museum of Los Angeles County, Los Angeles, California, USA); MABR (Museo Argentino de Ciencias Naturales "Bernardino Rivadavia", Buenos Aires, Argentina); MELN (Museo Entomológico, León, Nicaragua); MLPA (Museo de La Plata, Universidad Nacional de La Plata, División Entomología, La Plata, Argentina); PBCC (Peter Banar Collection, Czech Republic); PUCE (Pontificia Universidad Católica del Ecuador, Quito, Ecuador); ROMO (Royal Ontario Museum, Toronto, Ontario, Canada); UCV; (Universidad Central de Venezuela, Escuela de Agronomía, Maracay, Venezuela); UKS (University of Kansas,

* Dr. CHRISTIAN RIEGER, honouring his 70th birthday.

Snow Entomological Museum, Lawrence, Kansas, USA); UNAM (Instituto de Biología, Universidad Nacional Autónoma de México, México D. F.); UNDC (Universidad Nacional de Colombia, Facultad de Ciencias, Bogotá, Colombia); USNM (National Museum of Natural History, Smithsonian Institution, Washington, D. C., USA); UVG (Universidad del Valle de Guatemala, Guatemala); USUL (Utah State University, Logan, Utah, USA); ZMHU (Zoologisches Museum, Humboldt Universität, Berlin, Germany).

***Holhymenia riegeri* sp. nov.** (figs 1, 5-9)

Type material

Holotype: ♂, Bolivia: Santa Cruz, Est. Samaipata, 21.-22.1.1989 (UNAM). Paratypes: Bolivia: 1 ♀, S. Yungas (Anazani Donin) (USNM); Ecuador: 1 ♂, Sucumbios: Reventador, 1100 m, 00°05'S-77°40'W, 29.11.1997, F. Palomeque (PUCE); 1 ♂, Napo: C5 Rafael, 8.5.1986, P. Vega (UNAM).

Description

Male, holotype

Dorsal coloration: Head black with tylus, apex of juga and neck yellowish white; antennal segments I-III black, IV yellowish orange with apical third brownish black; pronotum reddish brown with light yellowish white spots as follows: two submedian near anterior margin, one square, shield-like medially on anterior half and anterior to the two lateral ones, which are slightly posterior to middle, one large, nearly rectangular on the posterior margin, and two small ones on the humeral angles; medial and postero-medial spots separate (fig. 1). Scutellum reddish brown with basal angles, apex and medial longitudinal stripe reaching anterior margin yellowish white; hemelytra translucent, with claval and corial veins, costal and apical borders, claval commissure and inner and outer borders of clavus dark brown; hemelytral membrane translucent with veins dark brown; connexival segments III-VI pale yellowish orange with upper margin brownish orange, VII pale yellowish white with posterior angle orange; abdominal segments III-VII orange with intersegmental borders, middle third of segment III, and scars of scent glands IV-V, V-VI, pale brown.

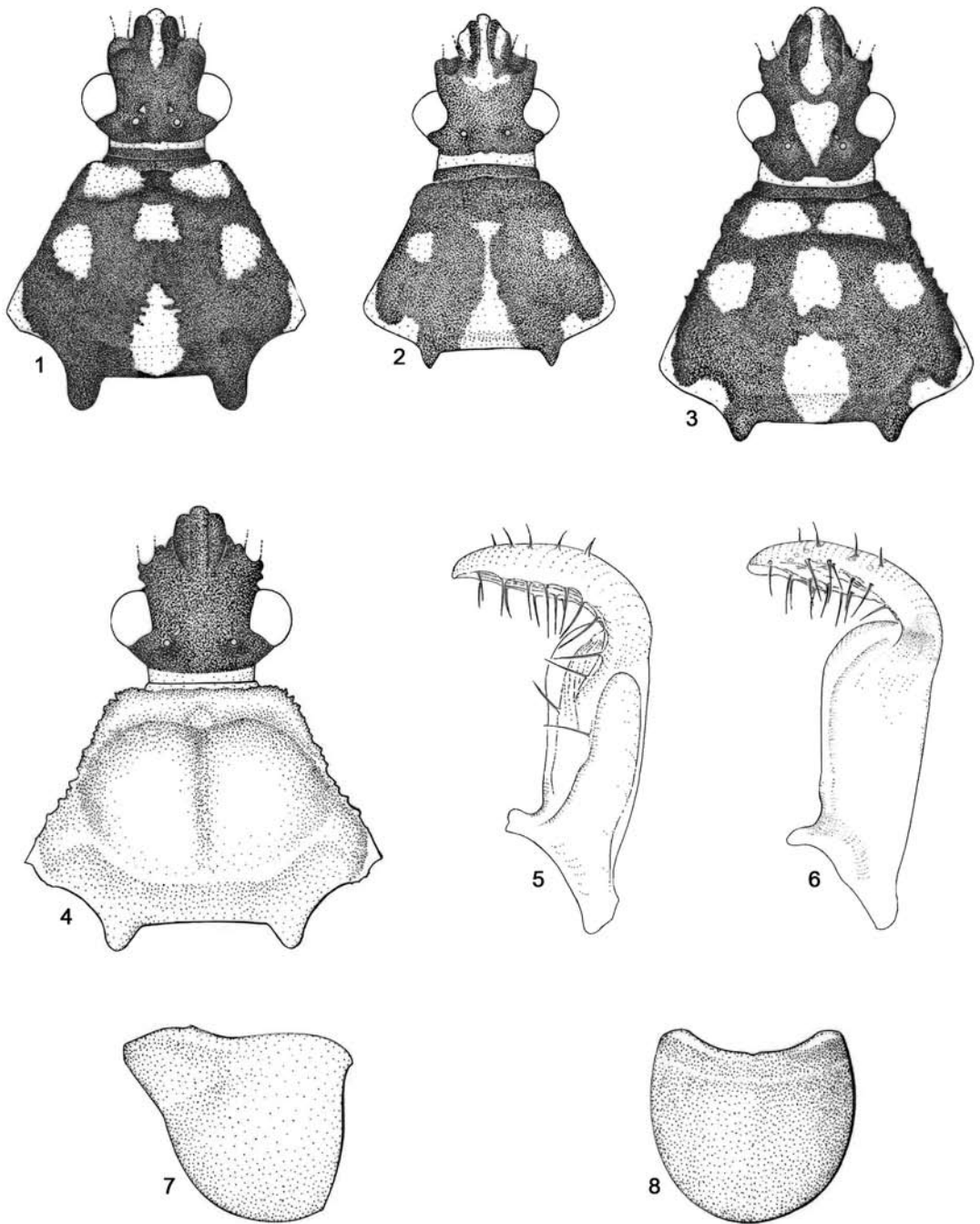
Ventral coloration: Head yellowish white with two short dark brown stripes, one near antenniferous tubercle, the other below middle third of eye; rostral segment I yellowish white, II to IV pale yellowish orange (apex of IV black); collar black; propleura yellow with wide black stripe obliquely directed; mesopleura yellow with short black

stripe near posterior third; metapleura yellow with wide "H" like black mark; prosternum yellow, basally reddish brown; mesosternum yellow, laterally pale brown; metasternum yellow with pale reddish orange reflections; anterior and posterior lobes of metathoracic peritreme yellowish white; procoxae yellowish white with inner face pale reddish brown; meso- and metacoxae pale reddish orange with yellow reflections; fore trochanter yellow, middle and hind trochanters yellow with pale reddish orange reflections; fore femur yellowish orange, middle and hind femora reddish brown to reddish orange with basal third yellow; tibiae pale orange; tarsal segments pale orange with pale brown reflections; abdominal sterna III-VII and genital capsule shiny castaneous orange; abdominal spiracles and one prominent spot lateral to middle line at abdominal sternite III yellowish white; pleural margins III-V dark yellowish orange and VI-VII yellowish white.

Structure: Head: Broadly triangular, porrect, prolonged anteriorly to antenniferous tubercles; jugae and tylus nearly equal in length; postlytral sulcus single; antenniferous tubercles unarmad, widely separated; antennal segment I slightly curved outward, sulcate, segments II and III expanded, IV fusiform; antennal segment IV the longest, III the shortest, and II longer than I; antennal segment IV shorter than II and III together; antennal segment I longer than length of head; preocellar sulcus small, nearly circular; ocellar tubercle raised; postocular tubercle indistinct; rostrum short, reaching anterior margin of abdominal sternite III; neck present. Thorax: Pronotum wider than long, trapezoidal, punctate, slightly rugose and nontuberculate; collar present; triangular process wide, lobulate, elongate, apically rounded; anterolateral borders spinate; posterolateral margins smooth; frontal angles rounded; humeral angles slightly expanded; collar region slightly raised, impunctate, without tubercles medially; metathoracic peritreme with two separate auricles. Legs: All femora with two ventral spines located distally; femora slightly clavate at apex, dorsal surface smooth, neither spined nor tuberculate; fore and middle tibiae cylindrical, sulcate; hind tibiae slightly expanded on both sides, outer expansion wider than inner; expansions running entire length of tibiae. Scutellum: Longer than wide, triangular, apically subacute.

Abdomen: Connexival segments not spined posteroapically.

Genital capsule: Posteroventral edge entire (figs 7-8). Paramere (figs 5-6).



Figures 1-8. *Holhymenia* spp. – 1. *H. riegeri* sp. nov. – 2. *H. scenica* (STAL) – 3. *H. histrio* (FABRICIUS) – 4. *H. rubescens* (AMYOT and SERVILLE) – 5-6. *H. riegeri* sp. nov., Paramere – 7-8. *H. riegeri* sp. nov., Male genital capsule (7 lateral view, 8 caudal view).

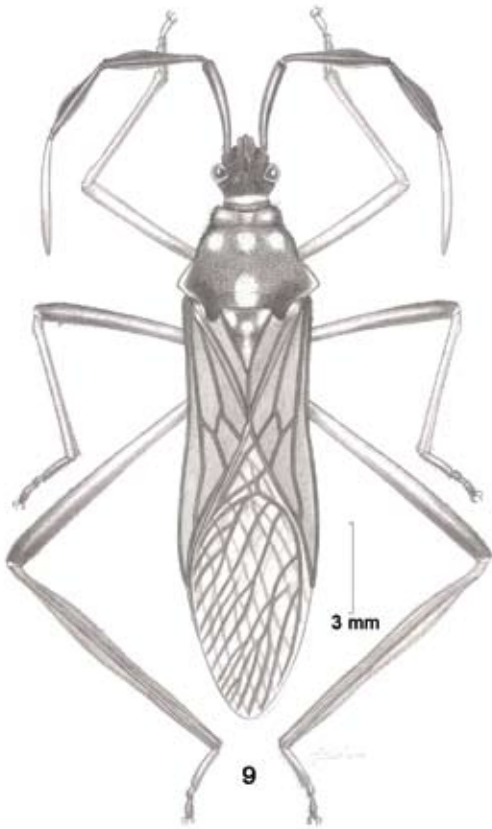


Figure 9. Dorsal view of *Holhymenia riegeri* sp. nov.

Measurements (mm)

Body length 19.23. Head length including apex of tylus 2.16; width across eyes 2.28; anterocular distance 1.16; preocular distance 1.16; interocular distance 0.48; length of antennal segments: I, 3.32, II, 3.64, III, 3.04, IV 4.35. Pronotum length 3.28, maximum width across humeral angles 4.52. Scutellar length 2.00, width 1.56.

Female

Habitus and color similar to male holotype. Pro-, meso- and metapleura reddish brown with acetabulae and two or three prominent yellowish white areas; prosternum yellowish white; mesosternum yellowish white and laterally reddish brown; metasternum yellow with pale reddish orange reflections; connexival segments VIII-IX, abdominal segments VIII-IX and genital plates pale yellowish orange.

Measurements (mm)

Body length 19.94. Head length including apex of tylus 2.20; width across eyes 2.24; anterocular distance 1.16; preocular distance 1.20; interocular distance 0.52; length of antennal segments: I, 3.24, II, 3.60, III, 2.92, IV 4.32. Pronotum length 3.16, maximum width across humeral angles 4.57. Scutellar length 2.08, width 1.60.

Variation: (1) Antennal segment I black with inner face near basal joint yellow. (2) Metapleura yellow with two narrow black stripes lateral to middle line. (3) Clavus and corium translucent with pale pink reflections. (4) Middle leg with basal tarsi pale orange and apically brown, and middle and hind tarsal segments brown.

Differential diagnosis

This new species belongs to the *clavigera*-group, characterized by having the head in dorsal view, and behind the eyes black, without yellowish triangular spot, and includes *H. clavigera* (HERBST) and *H. scenica* (STÅL). A second group, the *histrion*-group, has the head in dorsal view and behind eyes with yellowish white triangular spot and includes *H. histrio* (FABRICIUS), *H. persimilis* BREDDIN and *H. rubiginosa* BREDDIN. The third group, the *rubescens*-group, includes one species, *H. rubescens* (AMYOT & SERVILLE), on which the body color is basically orange brown without yellowish white spots, the head ventrally black and abdominal sterna IV to VII with wide black stripe running obliquely.

In *H. clavigera*, the antennal segment III is bi-colored, black basally and yellow distally. In *H. riegeri* sp. nov. and *H. scenica*, the antennal segment III is entirely black. *Holhymenia riegeri* is distinguished by having the central and postero-medial pronotal spots yellowish white and separate, the collar region reddish brown with two submedian yellowish white spots, and the basal angle of scutellum dark yellow. In *H. scenica* the central and postero-medial yellowish white spots are connected, the collar region is entirely black, and the basal angles of scutellar disk black.

Etymology: Named in honor of the distinguished entomologist CHRISTIAN RIEGER in recognition of his 70th anniversary.

Comments on *Holhymenia*-species

Holhymenia clavigera (HERBST, 1784)

Cimex clavigera HERBST, 1784: 260

Copius intermedia BURMEISTER, 1835: 330; syn. nov.

Holhymenia tibialis BREDDIN, 1904: 147; syn. nov. Comment: The examination of the types of *Copius intermedia* BURMEISTER (= *Holhymenia intermedia*) described from Surinam and deposited in ZMHU, *Holhymenia tibialis* BREDDIN described from Bolivia and deposited in DEIC and a good sample of specimens of *Holhymenia clavigera* recorded from Brazil, allowed to confirm that all three species are in fact conspecific.

Holhymenia histrio (FABRICIUS, 1803), (fig. 3)

Alydus histrio FABRICIUS, 1803: 248

This species is widely distributed, occurring in Argentina, Brazil, Colombia, British Guiana, French Guiana, México, Nicaragua, Panama, Paraguay, Surinam and Uruguay.

New records: Costa Rica: 2 ♂♂, Provincia Puntarenas, Esparza, 26.9.1976, G. FUENTES (UNAM); 3 ♂♂, Provincia Guanacaste, Ref. Nac. Fauna Silvestre, RAFAEL LUCAS RODRIGUEZ, Palo Verde, 10 m, 3.1991, D. ACEVEDO (INBIO); 1 ♀, Provincia Guanacaste, Estación Santa Rosa, Parque Nacional Guanacaste, 300 m, 1.1990 (INBIO). El Salvador: 1 ♂, Tamanique, 1000 m, 24.11.1971, S. & L. STEINHAUSER (CMNH). – Guatemala: 1 ♀, Departamento de Santa Rosa, Estanzuela de Santa María, 2.12.2000, C. AVILA (UVG). – Honduras: 1 ♂, Departamento Olancho, ca. Catamarcas, 450 m, 22.-21.8.1992, C. PORTER & L. STANGE (FSCA).

Holhymenia persimilis BREDDIN, 1903

Holhymenia persimilis BREDDIN, 1903: 382

Only known from the original description, which was described from Bolivia.

New records: Bolivia: 1 ♀, La Paz, Chulumani, 16°23'S-67°32'W, 10.-23.3.2001, F. D. PARKER (UNAM). – Peru: 1 ♀, Oxapampa, 1200 m, 15.3.1940, WEYRAUCH (MABR).

Holhymenia rubescens (AMYOT & SERVILLE, 1843)

Copius rubescens AMYOT & SERVILLE, 1843: 222. (fig. 4)

Described from Brazil and later cited from Guyana (PACKAUSKAS 2010).

New records: Bolivia: 1 ♂, 1 ♀, Buena Vista, F. STEINBACH (CMNH); 1 ♂, Santa Cruz, J. STEINBACH (CMNH). – Ecuador: 1 ♀, Provincia Pastaza, Santa Clara, 800-1000 m, 01°18'S-77°52'W, 22.-27.2.2004, P. BANAR (PBCC); 1 ♀, Napo, Misahualli,

Jatun Sacha, 450 m, 4.-7.4.1996, M. CARRERA (PUCE); 1 ♂, Sucumbios, Sacha Lodge, 260 m, 05°S-76.5°W, 10.1994, P. HIBBS (LACM). – Peru: 1 ♂, Loreto, Pucallpa, 15.2.1967, J. SCHUNKE (UNAM); 1 ♀, Madre de Dios, Boca Río La Torre, 300 m, 26.10.1982, G. LAMAS (UNAM). – Venezuela: 1 ♂, 1 ♀, Estado de Bolívar, Los Piliguce, 12.1991, J. M. AYALA (JMAC); 1 ♀, Distrito Federal, Amazonas, Río Baria, 140 m, 25.11.- 4.12.1984, E. OSUNA & A. CHACON (UCVM).

Holhymenia rubiginosa BREDDIN, 1904

Holhymenia rubiginosa BREDDIN, 1904: 147

Only known from Brazil (PACKAUSKAS 2010)

New records: Argentina: 2 ♀♀, Buenos Aires, 6.-31.1.2003, M. BRESSA (MLPA); 1 ♂, 2 ♀♀, Provincia de Buenos Aires, General Mansilla, 40 km S de Cd. de La Plata, 21.12.2002, M. J. BRESSA & M. L. LARRA MENDEZ (MLPA); 3 ♂♂, 1 ♀, Misiones, San Ignacio, 11.1919, 10-1982, D. CARPINTERO (MABR, UNAM). – Bolivia: 1 ♀, Santa Cruz, 5 km SSE Buena Vista, Hotel Flora y Fauna, 440 m, 17°29.925'S-63°39.128 W, 10.-22.10.2004, J. E. EGER (FSCA); 1 ♀, Santa Cruz, Chiquitos, 8.-13.11.1958, MONROS (UNAM). Colombia: 1 ♀, Meta, Salinas 2.5.1988, F. CORTES (UNDC); 1 ♀, Espinal, 29.12.1980, O. JIMÉNEZ (UNDC). – Paraguay: 1 ♀, Puerto Presidente Stroessner, 26.-29.12.1965, BALOGH (UNAM). – Venezuela: 2 ♀♀, Lara, 20.9.1968, J. M. OSORIO (UCVM); 1 ♀, Estado Guarico, Hda. Carrizalito, S. F. Tiznado, 2.9.1965, J. M. AYALA (JMAC).

Holhymenia scenica (STÅL, 1865) (fig. 2)

Copium scenicum STÅL, 1865: 180

Previously known only from Brazil (PACKAUSKAS 2010).

New records: Bolivia: 1 ♂, Santa Cruz, 3.7 km SSE Buena Vista, Hotel Flora y Fauna, 430 m, 23.-26.10.2000, M. C. THOMAS (FSCA). – British Guyana: 2 ♂♂, Mabura, km 8 Kurupukari Main, 27.4.1994, L. CERVANTES (UNAM). – Ecuador: 1 ♀, Oriente, La Selva on Río Napo, 50 mi, E. COCA, 7.3.1990, J. HARRSTAD (UNAM). Peru: 1 ♀, Departamento Loreto, Explorama Lodge, 50 mi NE Iquitos, Río Amazonas, 12.-19.3.1988, J. E. EGER (JEEC); 1 ♂, Madre de Dios, Río Tambopata, Reserve, 30 km air SW de Puerto Maldonado, 290 m, 1.-26.11.1986 E. ROSS (CASC).

Key to the species of *Holhymenia* LE PELETIER & SERVILLE, 1825

- 1 Body basically orange brown, without yellowish white markings; posterior half of head and tergites IV-VII black (fig. 4) *H. rubescens* (AMYOT & SERVILLE)
- Body basically black, with yellowish white markings 2
- 2 Head in dorsal view and behind eyes with a yellowish white triangular spot (fig. 3) 3
- Head in dorsal view and behind eyes black (figs 1-2) 5
- 3 Central yellowish white pronotal spot in line with the lateral ones; basal spot of scutellar disk usually trapezoidal (Fig. 3) 4
- Central yellowish white pronotal spot anterior to the lateral ones; basal spot of scutellar disk triangular or subtriangular *H. persimilis* BREDDIN
- 4 Posterior third of hind femur with black longitudinal stripe *H. histrio* (FABRICIUS)
- Posterior third of hind femur without black longitudinal stripe *H. rubiginosa* BREDDIN
- 5 Antennal segment III black with yellowish white markings *H. clavigera* (HERBST)
- Antennal segment III entirely black 6
- 6 Central and postero-medial pronotal spots yellowish white and separate; callar region reddish brown with two submedian yellowish white spots; basal angle of scutellar disk dark yellow (fig. 1, 9) *H. riegeri* sp. nov.
- Central and postero-medial yellowish white spots connected; callar region entirely black; basal angles of scutellar disk black (fig. 2) *H. scenica* (STÅL)

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