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NEW SPECIES OF AMERICAN LARGINAE (HETEROPTERA: LARGIDAE) AND KEYS TO KNOWN SPECIES OF *LARGULUS* AND *THERANEIS*

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ABSTRACT

Four new species, *Largulus refulgens* (Greater Antilles: Jamaica), *Theraneis saphisa* (Ecuador) *Theraneis napoana* (Ecuador), and *Theraneis furtiva* (Panama) are described. New distribution data are provided for *Theraneis petri* Stehlik, *Theraneis pulchra* Distant, and *Theraneis schuhi* Stehlik. *Theraneis isobel* Hussey is synonymized with *Theraneis pulchra* Distant. Keys to the known species of *Largulus* and *Theraneis* are provided, along with dorsal illustrations and drawings of male genital capsules of some species.

Key Words: Insecta, Heteroptera, Largidae, *Largulus*, *Theraneis*, new species, new distributional records, new synonymy

RESUMEN

Cuatro nuevas especies, *Largulus refulgens* (Antillas Mayores: Jamaica), *Theraneis saphisa* (Ecuador) *Theraneis napoana* (Ecuador), y *Theraneis furtiva* (Panama) son descritas. Nuevos datos distribucionales para *Theraneis petri* Stehlik, *Theraneis pulchra* Distant, y *Theraneis schuhi* Stehlik son incluidos. *Theraneis isobel* Hussey es sinonimizado con *Theraneis pulchra* Distant. Claves para separar las especies de *Largulus* y de *Theraneis* son incluidas, así como ilustraciones en vista dorsal de las especies descritas y la capsule genital del macho de algunas especies.

Translation provided by the author.

Altogether 18 species have been described in the genus *Theraneis* Spinola, 1837, and one in the genus *Largulus* Hussey, 1927. *Theraneis* is distributed in southern Central America and throughout most of South America excepting the southern extreme, and is characterized by having the eyes protruding, and semi-pedunculate, the buccula apically triangular, and the pronotal disk clearly bilobed, with the anterolateral maring not carinate. *Largulus* remains endemic to the Greater Antilles (Jamaica), and differs from the other genus by having the eyes simple, not protruding, the buccula apically rounded, the pronotal disk not bilobed, and with the anterolateral margin carinate. Brailovsky (1991) described 4 new species of *Theraneis* and presented a key for species identification and recently Stehlik (2006) added 4 new species to the genus.

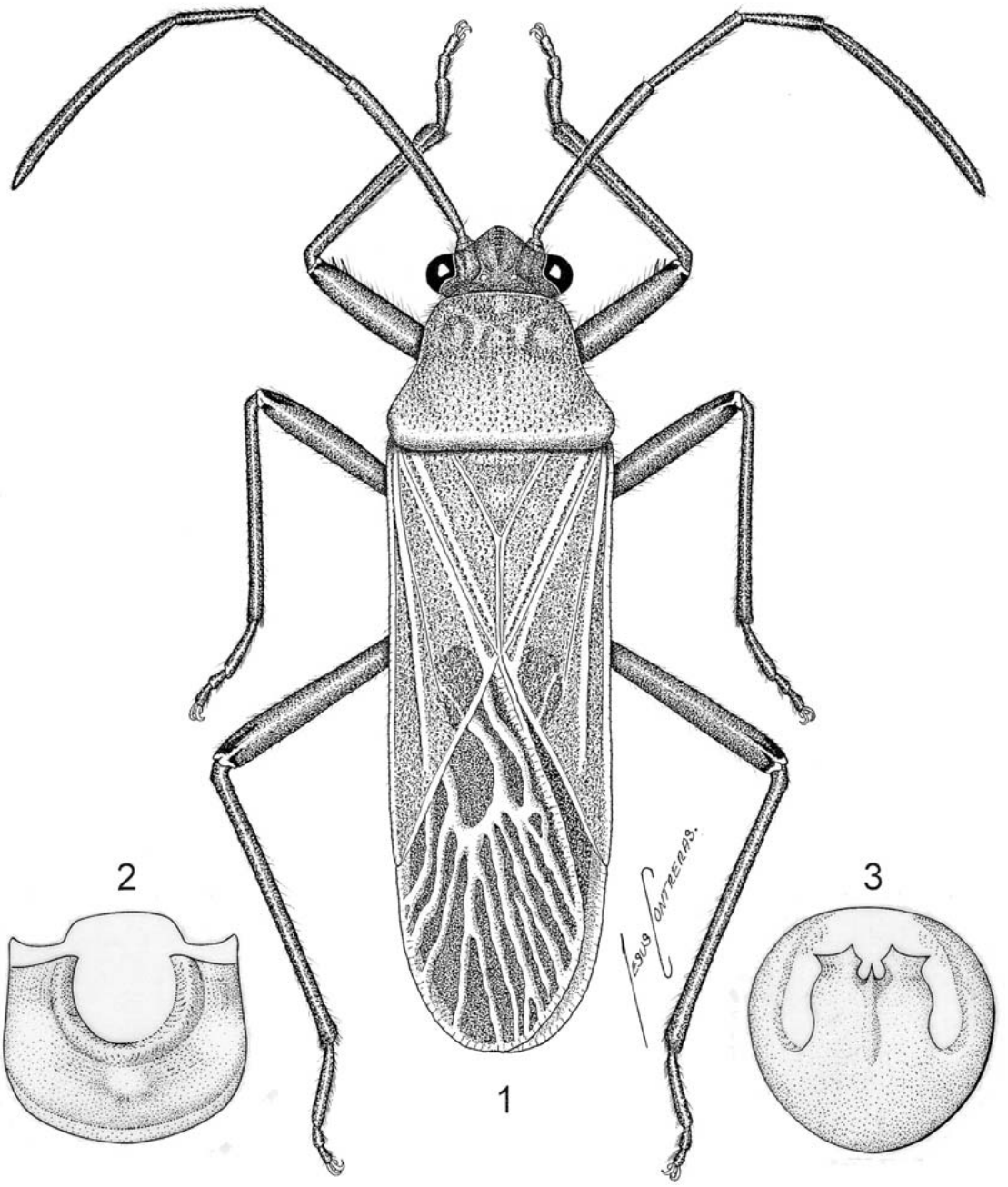
In this contribution we describe a second species of *Largulus*, and 3 new species of *Theraneis*, bringing to 21 the number of known taxa in that genus. In addition *Theraneis isobel* Hussey (1927) is synonymized with *T. puchra* Distant (1883) and keys to the known species of *Largulus* and *Theraneis* are provided. The anterior and posterior lobe of pronotal disk are clearly defined by the deep lateral constriction.

All measurements are given in millimeters. Acronyms used are: BMNH (The Natural History Museum, London, England); CASC (California Academy of Sciences, San Francisco, California); INBIO (Instituto Nacional de Biodiversidad, Santo Domingo de Heredia, Costa Rica); PUCE (Pontificia Universidad Católica del Ecuador); RMNH (Nationaal Natuurhistorische Museum, Leiden, The Netherlands); UMZ (Museum of Zoology, University of Michigan); UNAM (Colección Entomológica, Instituto de Biología, Universidad Nacional Autónoma de México); USNM (United States, National Museum of Natural History, Washington, D.C.).

Largulus refulgens, **new species**, Figs. 1-2

Description. Holotype Male. Dorsal coloration: head black; antennal segments I to III yellow, IV pale brown; pronotum and scutellum shiny orange; clavus shiny orange with black punctures; corium shiny orange with black discoidal spot adjacent to inner face of apical margin; hemelytral membrane pale brown; connexivum black with lateral border shiny orange; abdominal terga III to VI orange, VII black. Ventral coloration: head black with outer margin of buccula yellow; rostral segment I black, II dark orange, and III-IV yellow (apex of IV black); prothorax black with anterior margin yellow, and outer and posterior margin of propleuron shiny orange; mesothorax black, with posterior margin partially shiny orange; metathorax black; ostiolar peritreme black;

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Figs. 1-3. *Largulus* spp. 1-2. *L. refulgens* Brailovsky and Barrera (male). 1. Dorsal view. 2. Caudal view of male genital capsule. 3. *L. parallelus* Hussey. Caudal view of male genital capsule.

coxae, trochanters, and femora shiny orange; tibiae and tarsi yellow; abdominal sterna black with upper margin of pleural margin shiny orange; genital capsule black. Structure: body oblong, parallel-sided; head with vertex slightly convex; eyes simple, barely pedunculate; buccula low, short, scarcely extended backward as far as the antenniferous tubercles, and apically rounded; rostrum reaching middle third of metasternum; pronotum with collar wide; frontal angles obtuse, rounded; anterolateral margins narrowly but distinctly carinate; humeral angles rounded, not exposed; fore femur with two subapical spines; middle and hind femora unarmed; macropterous,

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hemelytral membrane extending beyond the apex of last abdominal segment; costal margin slightly emarginate; apical margin straight; apical angle subacute; abdomen parallel, not dilated. Genital capsule: posteroventral edge with deep U-shaped concavity, lateral angles subacute (Fig. 2).

Measurements. Male. Head length 0.84; width across eyes 1.40; interocular width 0.72. Length of antennal segments: I, 1.92; II, 1.20; III, 0.78; IV, 2.28. Pronotum: maximum length of anterior lobe 0.60; maximum length of posterior lobe 0.96; maximum width of anterior lobe 1.48; maximum width of posterior lobe 2.24. Scutellar length 0.85; width 0.95. Total body length 8.18.

Female. Unknown.

Holotype: Male, Greater Antilles, Jamaica, St. Andrew Parish, Blue Mountains, Hardware Gap, 900-1200 m, 8-VIII-1987, E. S. and M. Ross (CASC).

Discussion. *Largulus refulgens* **new species**, is characterized by the pronotum entirely shiny orange, the clavus shiny orange with black punctures, the corium shiny orange with black discoidal spot adjacent to inner third of apical margin, and the posteroventral edge of male genital capsule with deep U-shaped concavity and lateral angles subacute (Fig. 2). Comparatively, *Largulus parallelus* Hussey (1927), the only other species included in this genus, possesses a genital capsule in which the posteroventral edge has a large and broad median plate, and is deeply excavated laterally (Fig. 3), the pronotum is yellow with an irregular black spot on each callosity, the clavus is black except inner and claval commissure mostly yellow, and corium black with costal margin, apical angle, narrow apical margin and base and apex of cubital vein yellow.

Distribution. Known only from Jamaica (Greater Antilles).

Etymology. The name refers to the shining coloration of this species.

KEY TO SPECIES OF THE GENUS *LARGULUS*

1. Pronotum entirely shiny orange; corium shiny orange with black discoidal spot near inner third of apical margin; posteroventral edge of male genital capsule with deep U-shaped concavity (Figs. 1 and 2) . . . . . *refulgens*, **new species**

1'. Pronotum yellow with an irregular black spot on each callosity; corium black with costal margin, apical angle, narrow apical margin, and base and apex of cubital vein yellow; posteroventral edge of male genital capsule with large and broad median plate (Fig. 3) . . . . . *parallelus* Hussey

Theraneis saphisa, **new species**, Fig. 4

Description. Holotype female. Dorsal coloration: head black; antennal segments I-III black, IV dark reddish brown; pronotum black with wide shiny orange transverse fascia across callar region; scutellum, clavus, connexivum, and dorsal abdominal segments black; corium yellow with black triangular mark at inner third of apical margin, near claval commissure; hemelytral membrane black with apical third yellow. Ventral coloration: black except propleuron with broad, short, shiny orange transverse stripe. Structure: body narrow, elongate, parallel-sided; head with large semi-pedunculate bulging eyes, clothed with silvery pubescence, intermixed with erect hairs; rostrum reaching middle third of mesosternum; pronotum subtrapezoidal, wider than long, clothed with erect silvery pubescence; disk deeply and coarsely punctate (calli scarcely punctate); humeral angles rounded, not exposed; side and underside of thorax densely clothed with adpressed silvery hairs, intermixed with erect hairs; fore femur with one ventral row of acute spines; middle and hind femora unarmed; legs covered with fine adpressed silvery hairs, intermixed with long setae; scutellum longer than wide, irregularly punctate, with short and dense silvery pubescence, intermixed with erect hairs; clavus and corium finely punctate; abdominal sterna densely clothed with adpressed silvery pubescence, intermixed with erect hairs.

Measurements. Female. Head length 1.32; width across eyes 2.12; interocular width 1.20. Length of antennal segments: I, 2.36; II, 1.12; III, 0.84; IV, 1.98. Pronotum: maximum length of anterior lobe 1.00; maximum length of posterior lobe 1.44; maximum width of anterior lobe 2.02; maximum width of posterior lobe 2.76. Scutellar length 1.30; width 1.20. Total body length 12.18.

Male. Unknown.

Holotype: Female, Ecuador, Napo, Rio Hollin, 1000 m, 77°45'24"W-00°57'36"S, 18-IX-1997, F. Palomeque (PUCE).

Discussion. Related to *T. longula* Stehlik (2006) in that the corium is yellow with black triangular mark at inner third of apical margin, near claval commisssure. In *T. longula* the hemelytral membrane is black with only a narrow margin grey, and the pronotum is black with the posterior margin of humeral angles yellow. The hemelytral membrane of *T. saphisa* **new species**, is black with apical third yellow, and the pronotum is black with broad shiny orange transverse fascia across callar region.

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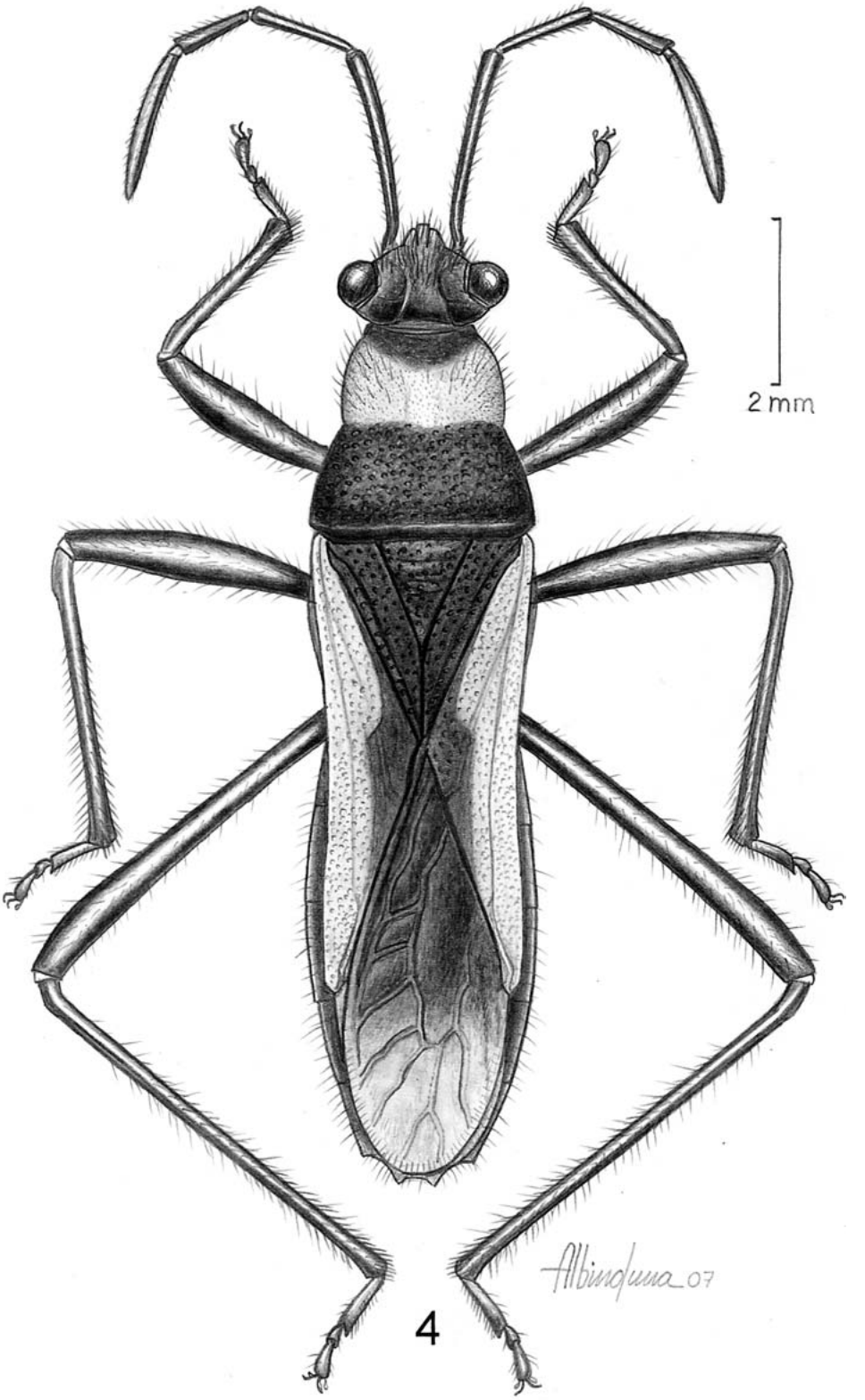


Fig. 4. Dorsal view of *Theraneis saphisa* Brailosvky and Barrera (female).

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Etymology. From the Greek, *saphis*, meaning distinct, referring to the distinctly delimited color pattern on the hemelytral membrane.

Distribution. Known only from Ecuador.

Theraneis napoana, **new species**, FIG. 5

Description. Holotype male. Dorsal coloration: head shiny black; antennal segments I-II shiny black, III shiny black with yellowish reflections, and IV yellow; pronotum shiny black except humeral angles and posterior margin yellow; scutellum dull black with apical third yellow; clavus and corium yellow; hemelytral membrane black with broad dirty whitish margin, and basal angle dirty yellowish-white; connexivum, and dorsal abdominal segments black. Ventral coloration: head including rostral segments I to IV, thorax, ostiolar peritreme, legs, abdomen, and genital capsule black; tarsal segments dark orange. Structure: body narrowly elongate, parallel-sided; head with large semi-pedunculate bulging eyes, and clothed with silvery adpressed pubescence, intermixed with erect hairs; rostrum reaching posterior margin of mesosternum; pronotum trapezoidal, wider than long, with following areas covered with adpressed silvery pubescence intermixed with erect hairs: anterior lobe (except collar), posterior margin (except humeral angles), and wide longitudinal median band which bisects posterior lobe; pronotal disk deeply and coarsely punctate; humeral angles rounded, not exposed; side and underside of thorax densely clothed with adpressed silvery hairs (except lateral margins of mesosternum); legs clothed with fine adpressed silvery hairs, intermixed with long white setae; scutellum longer than wide; anterior third slightly depressed, irregularly punctate, with short pubescence, intermixed with some erect hairs; abdominal sterna densely covered with adpressed silvery pubescence, intermixed with erect hairs; abdominal sternite VII with erect hairs, and lacking adpressed silvery pubescence. Genital capsule. Posteroventral edge with open triangular shallow notch, and lateral lobes thickened.

Measurements. Male. Head length 1.16; width across eyes 1.64; interocular width 0.88. Length of antennal segments: I, 1.60; II, 0.84; III, 0.64; IV, 1.28. Pronotum: maximum length of anterior lobe 0.68; maximum length of posterior lobe 0.92; maximum width of anterior lobe 1.40; maximum width of posterior lobe 2.00. Scutellar length 0.98; width 0.90. Total body length 8.50.

Female. Color and habitus similar to male holotype. Abdominal sternite VII, and paratergite VIII and IX shiny black, sparsely clothed with erect silver hairs.

Measurements. Female. Head length 1.28; width across eyes 1.68; interocular width 0.88. Length of antennal segments: I, 1.60; II, 0.84; III, 0.68; IV, 1.24. Pronotum: maximum length of anterior lobe 0.84; maximum length of posterior lobe 1.00; maximum width of anterior lobe 1.48; maximum width of posterior lobe 2.04. Scutellar length 1.26; width 0.98. Total body length 9.45.

Holotpe: Male, Ecuador, Napo, Tiputini Biodiversity Station, 216 m, 00°37'55"S-76°08'39"W, 1-VII-1998, T. L. Erwin et al collectors (USNM).

Paratypes: 4 Males, 2 females, ECUADOR, Napo, Tiputini Biodiversity Station, 216 m, 00°37'55"S-76°08'39"W, 1-VII-1998, T. L. Erwin et al collectors (UNAM, USNM).

Discussion. Similar to *T. surinamensis* Van Doesburg (1966) with humeral angles unarmed, macropterous, antennal segment II black, humeral angles, posterior margin of pronotum, clavus and corium entirely yellow to orange, and posterior margin of metathorax black. *Theraneis napoana* **new species**, described from Ecuador has the scutellum black with the apical third yellow, the anterior pronotal lobe shiny black, and densely clothed with adpressed silvery pubescence intermixed with erect hairs (except the collar), and the posterior lobe of pronotal disk has a wide longitudinal median band of adpressed silvery pubescence. In *T. surinamensis* recorded from Suriname, the scutellum is black with tip ochre, the anterior pronotal lobe exhibits a shiny black color, and the adpressed silvery pubescence is restricted to the posterior sulcus of the callus, and the posterior lobe has a narrow longitudinal median band of silvery pubescence.

Distribution. Known only from Ecuador.

Etymology. Named for the type locality, Napo.

Theraneis furtiva, **new species**, FIG. 6

Description. Holotype male. Dorsal coloration: head black; antennal segments I-II black, III pale dark brown, and IV yellow with apical third pale dark brown; pronotum black with following areas shiny yellowish-orange: middle third of anterior margin, anterolateral borders, posterior third, and irregular longitudinal stripe on middle third of posterior lobe; scutellum black; clavus shiny orange with apical third adjacent to claval commissure dark brown; corium shiny yellowish-orange with broad dark brown discoidal spot on posterior third near apical margin; hemelytral membrane dark brown with complete wide whitish border; connexivum dark brown with upper margin shiny yellowish-orange; abdominal terga III to VI orange, and VII dark brown. Ventral coloration: head, rostral segments I to IV, thorax, ostiolar peritreme, coxae, trochanters, femora, tibiae, and genital capsule black to dark reddish-brown; tarsi dark reddish-brown with basal segment dark yellow; abdominal sterna black to dark reddish-brown except middle third of abdominal sterna III and IV, and anterior margin yellow. Structure: body narrow, elongate, parallel-sided; head with large semi-pedunculate bulging eyes, and clothed

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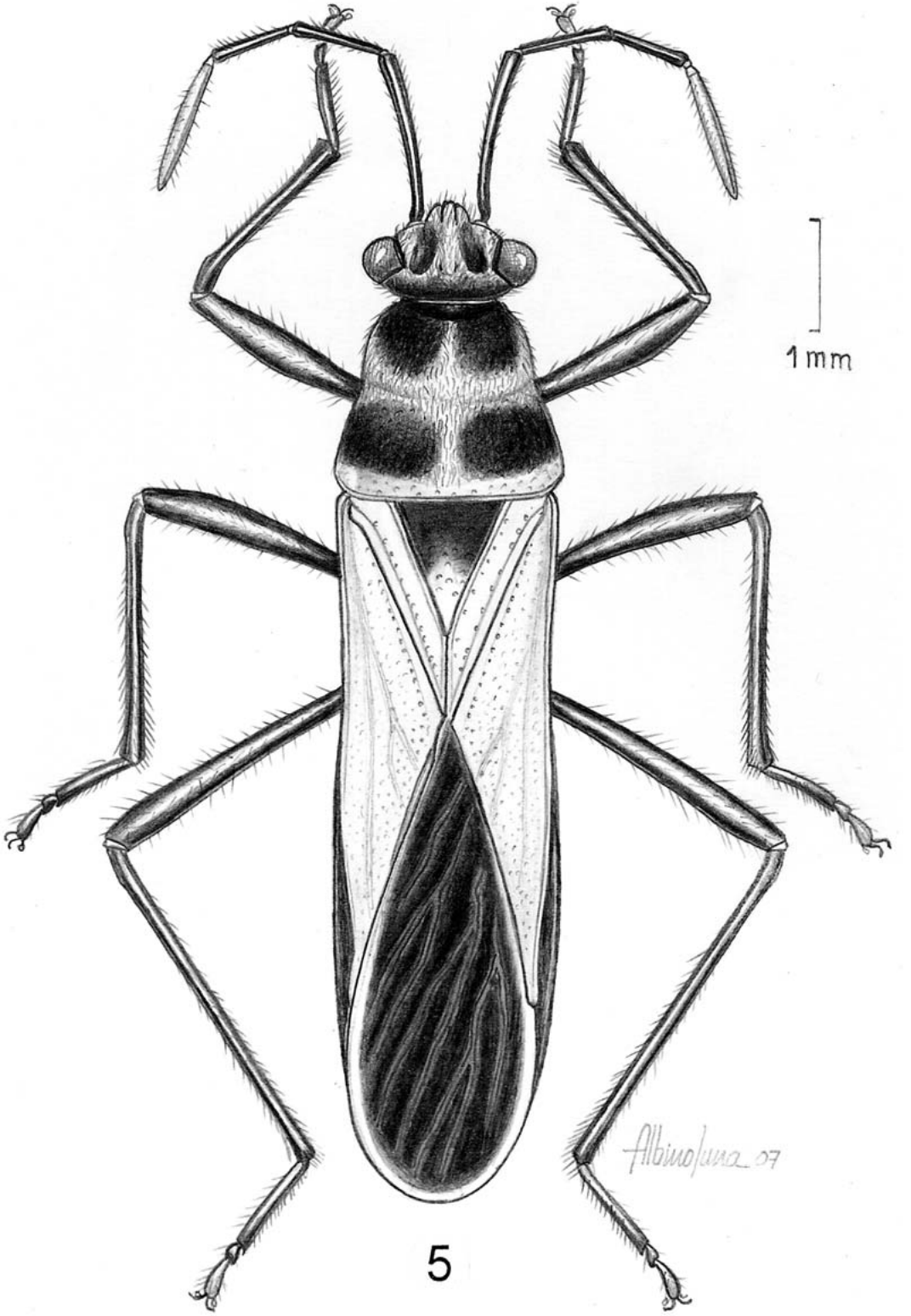


Fig. 5. Dorsal view of *Theraneis napoana* Brailovsky and Barrera (female).

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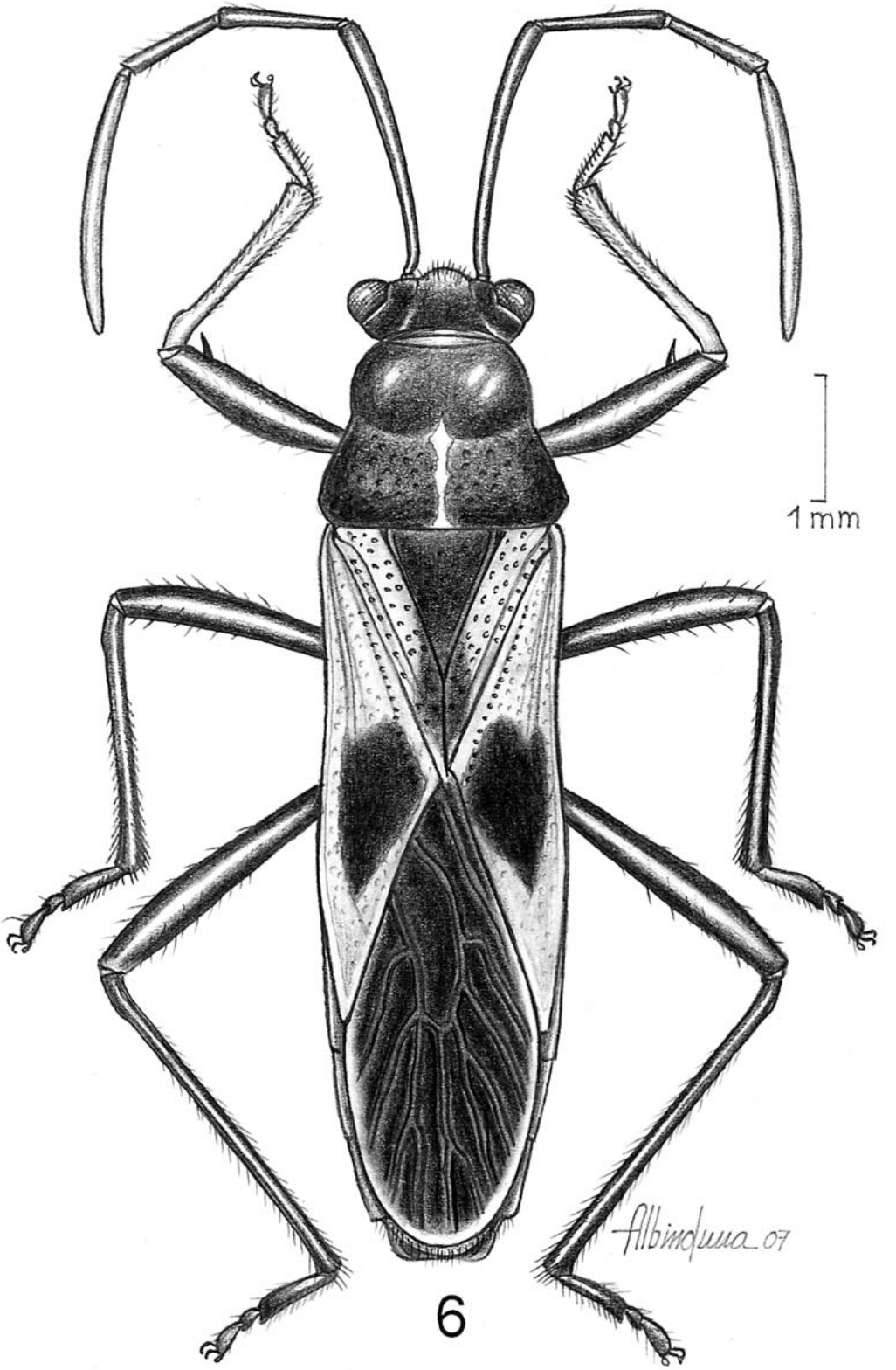


Fig. 6. Dorsal view of *Theraneis furtiva* Brailovsky and Barrera (male).

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with silvery pubescence, intermixed with erect hairs; rostrum reaching anterior margin of metasternum; pronotum trapezoidal, wider than long, clothed with short adpressed golden to brown pubescence; anterior lobe smooth, scarcely punctate at anterior margin, and posterior lobe with scattered punctures; humeral angles rounded, not exposed; sides and underside of thorax densely clothed with adpressed and short silvery hairs; legs covered with fine adpressed silvery hairs, intermixed with long setae; fore femur with 2 subdistal spines; middle and hind femora unarmed; scutellum as long as wide, with scattered punctures, provided with short, dense golden to dark brown pubescence; macropterous, hemelytral membrane reaching the apex of last abdominal segment; abdominal sterna densely covered with adpressed silvery pubescence, intermixed with erect hairs.

Measurements. Male. Head length 1.04; width across eyes 1.48; interocular width 0.74. Length of antennal segments: I, 2.00; II, 1.00; III, 0.68; IV, 1.96. Pronotum: maximum length of anterior lobe 0.76; maximum length of posterior lobe 0.84; maximum width of anterior lobe 1.48; maximum width of posterior lobe 2.08. Scutellar length 0.96; width 0.96. Total body length 8.15

Female. Unknown.

Holotype: Male, Panama, Lino (without date) (RMNH).

Discussion. Related to *T. araguaensis* Brailovsky (1991) in having the body narrow, shorter than 8.40 mm, macropterous, hemelytral membrane dark brown with complete wide whitish border, humeral angles unarmed, antennal segment II black, and fore femur with 1 or 2 subapical spines. *Theraneis araguaensis* can be separated from *T. furtiva* **new species** by the following characters: antennal segment IV chestnut brown with reddish reflections, abdominal sterna entirely black, clavus black with basal third and anal border reddish-orange, corium tricolored, with the exocorium including costal margin reddish-orange, endocorium and apical margin creamy yellow, and most of the area bordering claval suture as well as the subdiscoidal spot located at middle third near the apical margin black to dark brown. *Theraneis furtiva*, can be differentiated by the following characters: antennal segment IV yellow with apical third chestnut brown, abdominal sterna black to dark reddish-brown with middle third of abdominal sterna III and IV, and anterior margin yellow, clavus shiny orange with apical third adjacent to claval commissure dark brown, and corium shiny yellowish-orange with broad dark brown discoidal spot close to posterior third.

Etymology. From the Latin, *furtivus*, meaning secret, hidden, referring to the elusive or rare condition of this species.

Distribution. Known only from Panama.

Theraneis pulchra DISTANT

Theraneis pulchra Distant 1883: 225

Theraneis isobel Hussey 1927: 229-230. **New Synonymy**

Distribution. *Theraneis pulchra* Distant, was originally described from Panama (Volcan Chiriqui, Bugaba, Tolé, and San Feliz), whereas *T. isobel* Hussey was described from Honduras (Guaimas District, Tela).

The holotype of *T. pulchra* Distant, a female in BMNH and the holotype of *T. isobel* Hussey, a female in UMZ, were examined, compared, and subsequently synonymized.

New records. One male, 1 female, COSTA RICA, Provincia Puntarenas, Peninsula Osa, Rancho Quemado, III-1991, XI-1992, R. M. Guzmán and F. Quesada (INBIO); 1 male, Provincia Limon, Parque Nacional de Cahuita, 3-4-VIII-1981, H. V. Weems Jr., and G. B. Edwards (UNAM); 1 female, Turrialba, 28-I-1965, J. A. Slater and N. T. Davis (UNAM).

Theraneis petri STEHLIK

Theraneis petri Stehlik 2006: 54-55

Distribution. Previously known only from the original description.

BOLIVIA, Chaparé (Yungas).

New records. Three males, 3 females, BOLIVIA, La Paz, Rio Zongo, 1400 m, 24-30-X-1984, L. E. Peña (USNM).

Theraneis schuhi STEHLIK

Theraneis schuhi Stehlik 2006: 51-53

Distribution. Previously known only from the original description.

PERU, Huanuco (Tingo Maria).

New records. One female, BRASIL, Chapada, X (without date) USNM; 1 male, BOLIVIA, Departamento Cochabámba, Región Chaparé, 400 m, 1-IX-1957, Dirings (UNAM).

KEY TO SPECIES OF THE GENUS *Theraneis*

1. Hemelytral membrane not reaching the apex of abdomen . . . . . *amabilis* Breddin

1'. Hemelytral membrane reaching to or beyond the apex of abdomen 2

2. Humeral angles of the pronotum provided with large and acute spine directed posteriorly . . . . . *spinosa* Distant

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2'. Humeral angles of the pronotum without large and acute spine 3

3. Humeral angles of the pronotum with a small, obtuse apical tooth, directed posteriorly 4

3'. Humeral angles of pronotum unarmed 5

4. Clavus and corium orange or yellow . . . . . *lurida* Distant

4'. Clavus black; corium creamy yellow with longitudinal median black stripe . . . . . *elongata* Brailovsky

5. Antennal segment II yellow 6

5'. Antennal segment II black 7

6. Clavus black . . . . . *montivaga* Schmidt

6'. Clavus yellow or orange . . . . . *pulchra* Distant

7. Anterior lobe of pronotal disk entirely black 10

7'. Anterior lobe of pronotal disk not entirely black 8

8. Corium black contrasting sharply with yellowish-white triangular-shaped pattern . . . . . *petri* Stehlik

8'. Corium not as above . . . . .

9. Corium entirely pale yellowish, except for tiny red stripe along clavus; hemelytral membrane black to dark brown . . . . . *brancuccii* Stehlik

9'. Corium yellow with black triangular mark at inner third of apical margin near claval commissure; hemelytral membrane black with apical third yellow (Fig 4) . . . . . *saphisa*, **new species**

10. Posterior lobe of pronotum yellow to orange . . . . . *oleosa* Distant

10'. Posterior lobe of pronotum mostly black with or without yellow or orange marks 11

11. Hemelytral membrane pale yellowish-white, with basal angle black . . . . . *constricta* Stål

11'. Hemelytral membrane almost entirely black 12

12. Posterior margin of metasternum yellowish-white 13

12'. Posterior margin of metasternum black 14

13. Corium tricolored, anterior half creamy yellow except for an elongate triangular black area close to clavus, followed by wide orange transverse fascia and a creamy yellow area at posterior end . . . . . *neotropicalis* Brailovsky

13'. Corium colored differently, without wide orange transverse fascia . . . . . *schuhi* Stehlik

14. Abdominal sterna with anterior margin yellow (Fig. 6) . . . . . *furtiva*, **new species**

14'. Abdominal sterna with anterior margin black 15

15. Clavus entirely yellow to shiny orange 16

15'. Clavus not entirely yellow to shiny orange 18

16. Scutellum black with apical third yellow (Fig. 5) . . . . . *napoana*, **new species**

16'. Scutellum entirely black or with tip ochre 17

17. Corium tricolored, anterior half pale yellowish-orange, followed by a black irregular transverse fascia located beyond claval commissure, and followed by pale yellow apical margin and apical angle; hemelytral membrane dark brown with narrow dirty white border, and basal angle and adjacent area to apical border dirty yellowish-ochre . . . . . *multicolorata* Brailovsky

17'. Corium entirely yellow to shiny orange; hemelytral membrane dark brown with wide white border . . . . . *surinamensis* Van Doesburg

18. Corium with two longitudinal stripes, the external pale orange, the internal creamy yellow broken in the middle by a transverse irregular black fascia, and inner side without black triangular mark . . . . . *araguaensis* Brailovsky

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18'. Corium yellow or with two longitudinal stripes, the external shiny orange, the internal yellow to creamy yellow never broken by a transverse, irregular black fascia, and inner side always with black triangular mark 19

19. Corium with two longitudinal stripes, the external shiny orange, the internal creamy yellow . . . . . *vittata* Spinola

19'. Corium yellow with inner side with black triangular mark 20

20. Antennal segments III and IV yellow to dark orange; clavus with basal half yellow and posterior half dark orange. . . . . *vaga* Schmidt

20'. Antennal segments II and III black; clavus black with anterior third yellow . . . . . *longula* Stehllik

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