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***Semium brailovskyi*, new species (Heteroptera: Miridae: Phylinae: Semiini) from Baja California, with an updated key to species**

Semium brailovskyi* especie nueva (Heteroptera: Miridae: Phylinae: Semiini) de Baja California, con una clave actualizada para las especies del género *Semium

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ABSTRACT

Semium brailovskyi, new species, is described from Baja California Norte, Mexico. The host is reported as *Euphorbia misera* (Euphorbiaceae). Color habitus images of male and female specimens, line drawings of the male genitalia, a key and distribution map to all *Semium* species are provided.

RESUMEN

Se describe una especie nueva: *Semium brailovskyi* de Baja California, Mexico. Se registra a su hospedero: *Euphorbia misera* (Euphorbiaceae). Se proporcionan imágenes a color de los hábitos del macho y hembra, ilustraciones de la genitalia masculina, una clave y un mapa con las distribución de todas las especies de *Semium*.

The small North American genus *Semium* Reuter was described with *S. hirtum* Reuter from Texas as the only included species. In the interim, four additional species have been described (Knight, 1927; Kelton, 1959a, 1973; Carvalho, 1976), extending the known distribution from the northeastern United States to Guatemala. In the present paper I describe an additional species from Baja California Norte, Mexico, bringing the total number of known species to six.

Dedication: *Semium brailovskyi*, new species, is described in honor of my friend and colleague Harry Brailovsky. I first met Harry at the American Museum of Natural History, shortly after my arrival in 1974. My wife, Brenda Massie, and I have had the pleasure of hosting him and his elegant late wife, Jaqueline, at our home, as well as staying in their home and conducting fieldwork in Mexico on multiple occasions. These are experiences that Brenda and I hold dear and will always remember fondly. Harry is also known personally by many heteropterists because of his world travels conducting fieldwork and studying in museums, both large and small. For others he will be best known for the volume and extent of his publications, mostly on Lygaeoidea and Coreoidea, but also with impact in other groups. His career ranks among the most productive among heteropterists, both historical and modern, and his descriptive contributions will have a lasting impact on our knowledge of trichophoran diversity in particular. Two other aspects of his career are also noteworthy. Harry is essentially the only home-grown Mexican heteropterist, who has also trained a significant number of protégés. As a group they have collected extensively in Mexico, redefining for the area our knowledge of the fauna of Trichophora and

to a lesser extent the Reduviidae. All of these contributions deserve our respect and admiration, and it is in that spirit that I wish Harry the very best in his continuing work on the Heteroptera.

Type material deposited at:

AMNH American Museum of Natural History
IBUNAM Instituto de Biología, UNAM
UCR University of California, Riverside
UCB University of California, Berkeley

***Semium brailovskyi*, new species**

Figures 1, 2A–D, 3

<http://zoobank.org/1D7FA2DE-1B7B-4218-BE99-C3D31C2BADE3>

Holotype: **MEXICO: Baja California:** 12 mi E of El Rosario, 30.1532°N 115.53903°W, 329 m, 25 Mar 1979, J. D. Pinto, *Euphorbia misera* (Euphorbiaceae), det. collector, 1♂ (AMNH_PBI 00083998) (UCR).

Paratypes: **MEXICO: Baja California:** 8 mi W of Meling Ranch, 30.97646°N 115.77426°W, 17 Mar 1972, J. Powell, 1♂ (AMNH_PBI 00079730) (UCB). 10 mi SE of El Rosario, 29.95247°N 115.57655°W, 31 Mar 1976, J. Doyen, *Euphorbia misera* (Euphorbiaceae), det. collector, 1♀ (AMNH_PBI 00079735) (UCB). 12 mi E of El Rosario, 30.1532°N 115.53903°W, 329 m, 25 Mar 1979, J. D. Pinto, *Euphorbia misera* (Euphorbiaceae), det. collector, 1♂ (AMNH_PBI 00084002), 3♀ (AMNH_PBI 00084004-AMNH_PBI 00084006) (AMNH), 1♂ (AMNH_PBI 00084001), 1♀ (AMNH_PBI 00084011) (IBUNAM), 2♂ (AMNH_PBI 00083999, AMNH_PBI 00084000), 6♀ (AMNH_PBI 00084003, AMNH_PBI 00084007-AMNH_PBI 00084010, AMNH_PBI 00084012) (UCR). 15 mi W

of Bahia de los Angeles, 28.95°N 113.79781°W, 26 Mar 1979, J. D. Pinto, *Euphorbia misera* (Euphorbiaceae), det. collector, 1♀ (AMNH_PBI 00084013) (UCR). 16 km S of El Rosario, 29.94021°N 115.57655°W, 26 Dec 1978, R. E. Dietz, *Euphorbia misera* (Euphorbiaceae), det. [label], 4♀ (AMNH_PBI 00079731-AMNH_PBI 00079734) (UCB). 38 km E Rt 1 to Parque San Pedro Martir, 30.96°N 115.82°W, 400 m, 24 Apr 1985, R.T. Schuh and B.M. Massie, 1♀ (AMNH_PBI 00414890) (AMNH).

Diagnosis: Recognized among members of the Phylinae by the almost uniformly slate-gray coloration (fig. 1), the broad loaflike pronotal collar, the weakly swollen fusiform parempodia (Schuh, 1976: fig. 27), and the structure of the male genitalia (fig. 2A–D). Distinguished from other *Semium* spp. by the slate gray coloration.

Description: Among *Semium* species moderately large and broad bodied, total length 4.15 mm, width pronotum 1.24 mm; remaining measurements as in Table 1. **Coloration** (fig. 1): Background coloration of body and all appendages slate gray; proepisternum, mesepimeron and metepimeron with lighter trapezoidal areas occupying most of each sclerite. **Surface texture and vestiture** (fig. 1): Body surface dull, appearing minutely granular, calli polished and moderately shining in contrast to remainder of body and appendages; dorsum with scattered dark, short, subappressed setae; abdominal venter with scattered, short, erect, dark setae; tibiae with short, reclining, dark spines. **Structure** (fig. 1): Head short, transverse, eyes small, almost spherical. Pronotum moderately elevated posteriorly, anterior margin in the form of a broad, loaflike collar, calli transverse, elevated, forming a transverse ridge on pronotum; inner cell of membrane very long, anteriorly reaching to extreme base of membrane, parempodia weakly swollen, fusiform. **Male genitalia** (fig. 2A–D): Endosoma J-shaped, weakly bent proximally, apex elongate and slender with no visible secondary gonopore, or at most weakly developed and not seen under typical microscopic observation; phallosome forming about a 45 degree angle, basal portion elongate, relatively slender, nearly parallel sided, apical portion tubular, slender, tapering toward apex; left paramere short, blunt, posterior margin elevated well above level of anterior margin, posterior lobe elongate, tapered, anterior lobe short, flattened, and with a subapical seta; right paramere rounded on posterior margin, with an elongate fingerlike apex.

Female: Total length 3.62 mm, width pronotum 1.16 mm. Coloration and general body shape, as in male, but hemelytra not as long. **Female genitalia:** Not examined.

Etymology: Named in honor of Harry Brailovsky, in recognition of his contributions to the study of the Heteroptera.

Distribution: Figure 3.

Host: All known specimens with host data were collected on *Euphorbia misera* Benth (Euphorbiaceae). The known distribution of *S. brailovskyi* is much more restricted than its host. In addition to Baja California Norte,

the latter is also known from localities primarily in coastal scrub of Los Angeles and San Diego counties, as well as the Channel Islands, whereas *S. brailovskyi* is restricted to the Mexican portion of the host distribution.

Discussion: Knight (1923) erected the monotypic tribe Semiini which he placed in the Orthotylinae, a placement followed by Carvalho (1952, 1958). Kelton (1959B) illustrated the male genitalia of *Semium hirtum*, and moved *Semium* to the Phylinae: Phylini, an action supported by Schuh (1974, 1995). Carvalho (1976) described the new species and illustrated the male genitalia of *Semium guatemalanus* Carvalho. Whereas the illustrations of both Kelton (1959) and Carvalho (1976) show that the endosoma is sclerotized and rigid, and therefore of the phylinae type, neither author accurately portrayed the structure of the phallosome or the left paramere. Figures 2A–E more accurately represent the details of male genitalic structures within the genus. Schuh and Menard (2013) and Menard et al. (2014) resurrected the Semiini—with two subtribes—Semiina and Exocarpocorina. The Semiina currently include 14 genera distributed in the Holarctic, Africa, and most recently Australia, with the addition of *Restiophylus* Leon and Weirauch (2016). *Tytthus* Fieber (see Henry, 2012) is nearly cosmopolitan and the most speciose of the included genera. Although most genera do not share the loaflike anterior pronotal margin of *Semium*, the endosoma is J-shaped and simple in most taxa, the secondary gonopore being ill-defined in many of them, as seen in figures 2F for *Criocoris saliens* (Reuter) and 2G for *Nicholia eriogoni* Knight.

Kelton (1973) reviewed the genus *Semium* and provided habitus illustrations and a key to the four species known at that time. I have updated his key below to include all six known species. Habitus illustrations and specimen information for the remaining species can be found at <http://research.amnh.org/pbi/heteropteraspeciespage> or www.discoverlife.org.

Key to species of *Semium*

1. Entire body and appendages dark, slate gray (fig. 1), with paler trapezoidal areas on thoracic pleuron *S. brailovskyi*, n. sp.
 - Body and appendages not entirely slate gray 2
2. Pronotum and hemelytra densely pubescent, setae long and erect 3
 - Pronotum and hemelytra with only very short, sparse, recumbent setae 4
3. Corium and clavus diffuse gray, without definite pattern; males 3.4 mm or longer, females 3.3 mm or longer *S. villosum* Kelton
 - Posterior lobe of pronotum, clavus, apical region of corium, and membrane brown, contrasting with cream-colored anterior margin of pronotum, most of scutellum, and anterior three-fourth of exocorium; males 3.0 mm or shorter, females 3.2 mm or shorter *S. hirtum* Reuter

4. Pronotum red or reddish yellow; hemelytra and appendages black *S. rubronotum* Kelton
– Pronotum not red or reddish yellow; hemelytra and appendages not entire black 5
5. Clavus, posterior half of exocorium, and membrane chocolate brown, contrasting with cream-colored posterior lobe of pronotum, entire cuneus, and remainder of corium ...
..... *S. subglaber* Knight
– Clavus pale to gray, nearly unicolorous with most of corium; cuneus pale on basal two-thirds, dark apically, membrane dark; membrane with a small, round, contrasting white patch adjacent to apex of membrane
..... *S. guatemalanus* Carvalho

All species of *Semium* apparently feed on members of the genus *Euphorbia*. This phenomenon was first pointed out to me by A.G. Wheeler, Jr., who—when in search of *Semium hirtum*—oriented me to specimens of prostrate *Euphorbia maculata* L. growing along the edge of pavement near a railroad track near Hershey, Pennsylvania in the late summer. In addition to *Euphorbia maculata* and *E. misera*, additional *Semium* hosts also known from records in the literature or from additional specimens that I have examined include: ***S. subglaber*** — *Euphorbia albomarginata* Torr. & A. Gray, *E. micromera* Boiss., *E. polycarpa* Benth.; ***S. hirtum*** — *Euphorbia humistrata* Engelm., *E. maculata* [as *E. supina* Raf.], *E. nutans* Lag., *E. prostrata* Aiton.; ***S. rubronotum* Kelton** — *Euphorbia* sp.

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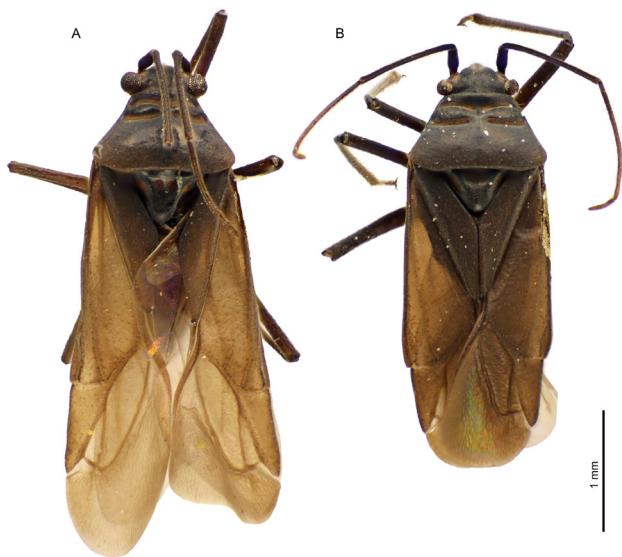


Figure 1. *Semium brailovskyi*. A. Adult male. B. Adult female.

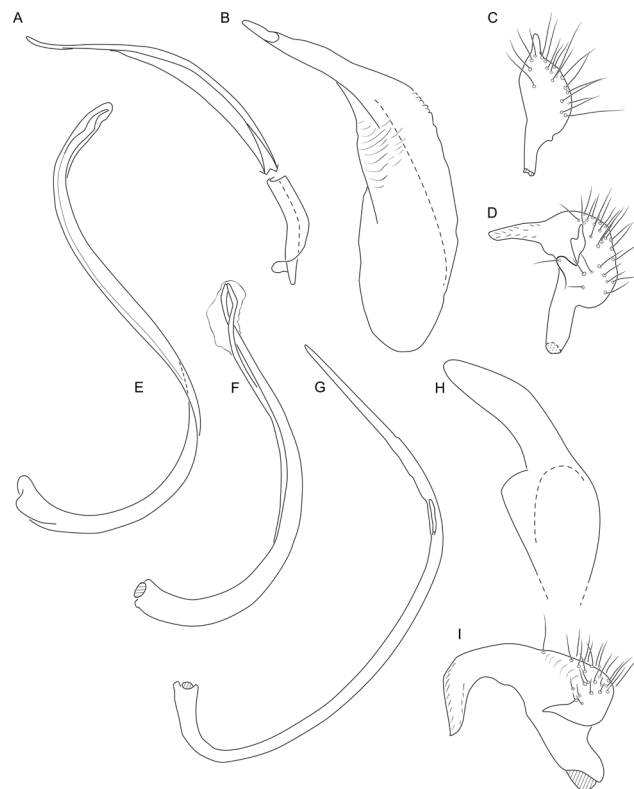


Figure 2. *Semium brailovskyi*: A. Endosoma. B. Phallosome. C. Left paramere. D. Right paramere. *Semium hirtum*: E. Endosoma. *Criocoris saliens*: F. Endosoma. *Nicholia eriogoni*: G. Endosoma. H. Phallosome. I. Left paramere.

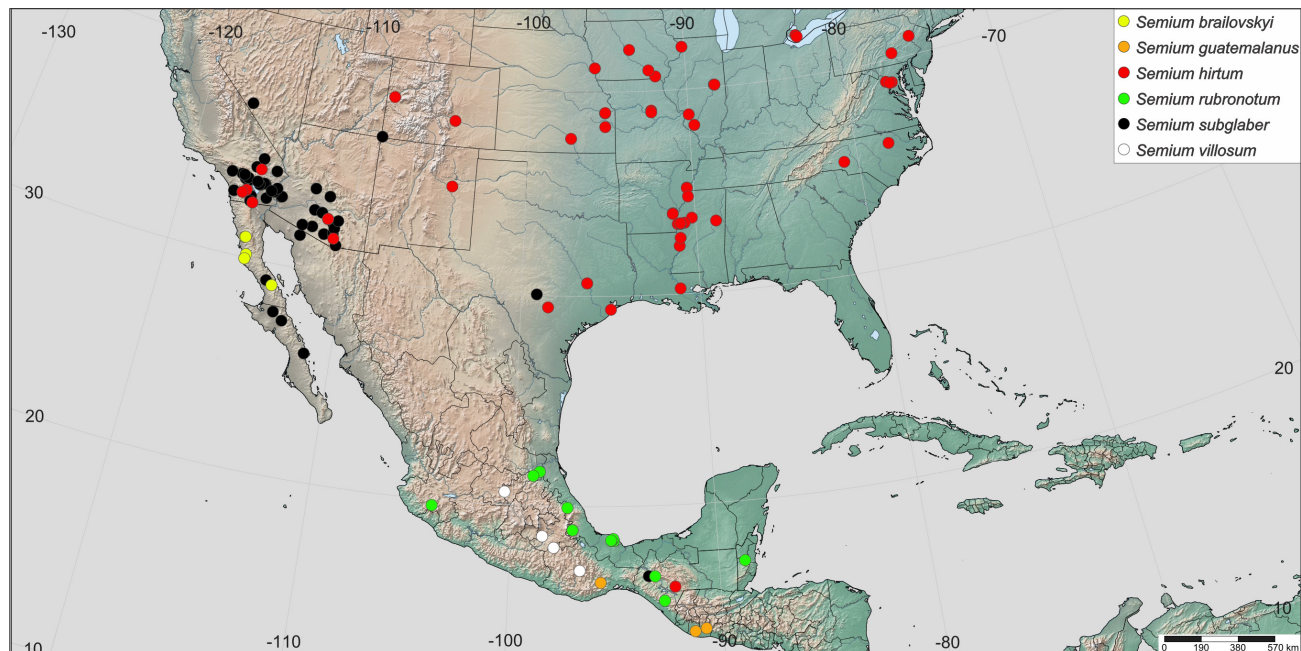


Figure 3. Distributions of *Semium* spp.