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First record of Vanhorniidae (Hymenoptera: Proctotrupoidae) from Florida

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Vanhorniidae is a small, uncommonly collected family of Hymenoptera (previously in subfamily Serphidae or Proctotrupidae) comprised of 3 genera and 5 species (Choi & Lee 2012): *Heloriserphus castor* Masner and *Heloriserphus pollux* Masner in Chile (Townes & Townes 1981), *Sinicivanhormia quizhouensis* He and Chu in China (He & Chu 1990), *Vanhornia leileri* Hedqvist in Sweden and far eastern Russia (Storozhenko et al. 2002), and *Vanhornia eucnemidarum* Crawford in eastern North America (Fig. 1). There is also a recent record of the latter species from South Korea (Choi & Lee 2012). In eastern North America, *V. eucnemidarum* have been collected during the spring from mid-May to late Jul, with their peak flight period occurring from the end of May to the end of Jun (Smith 1995). This parasitoid species has been reared from the larval/pupal chambers of *Isorhipis ruficornis* (Say) (Coleoptera: Eucnemidae) in the wood of dead maple (Champlain 1922; Brues 1927; Deyrup 1985). A description of the unusual abdomen of *V. eucnemidarum* was provided by Mason (1983). This report provides the first evidence for the natural occurrence of *V. eucnemidarum* in Florida.

Malaise traps were set up in Tall Timber Research Station in Tallahassee, Leon County, Florida, USA, between 1993 and 1994 (30.649850°N, 84.225942°W). All Ichneumonidae and Braconidae were sorted and pinned, with all other bycatch sorted to order and stored in vials of 70% ethyl alcohol for later identification. One specimen of *V. eucnemidarum* was found and identified by Paul Hanson from the hymenopteran bycatch. The specimens are part of the J. Pickering Collection associated with the Sam Houston State National History Collections in Huntsville,



Fig. 1. Ventral view of *Vanhornia eucnemidarum* (Hymenoptera: Vanhorniidae).

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Texas, USA. The following databases were searched for information on collecting localities of Vanhorniidae: DiscoverLife, SCAN (Symbiota Collections of Arthropods Network), BISON (Biodiversity Information Serving Our Nation), iDigBio (Integrated Digitized Biocollections), and GBIF (Global Biodiversity Information Facility).

According to the literature (primarily Townes & Townes 1981) and the databases, *V. eucnemidarum* has been collected in the Western Hemisphere from Maine, USA, to Quebec, Canada; west to Ontario, Canada, and Michigan, USA; and south to Indiana, USA; Ohio, USA; Kentucky, USA; and Georgia, USA (Forsyth County). The specimen from the Pickering collection provides the first record of Vanhorniidae in Florida. This specimen came from a Malaise trap sample that is dated 5 to 12 Apr 1994, which is earlier in the year than previous records (probably due to the more southern location). The following Eucnemidae were found and identified from Malaise trap samples at the same site (Tallahassee, Leon County, Florida): *Isorhipis ruficornis* (Say) from 5 to 12 Apr 1993, and *Deltometopus amoenicornis* (Say) (both Coleoptera: Eucnemindae) from 11 to 18 May 1993, 24 to 31 Aug 1993, 7 to 14 Sep 1993, and 21 to 28 Sep 1993. The Malaise trap was located at the Tall Timbers Research Station in a rich patch of hardwood trees. The site was subsequently subjected to a number of controlled burns, and now contains predominantly pine and loblolly trees, grass, and short woody vegetation, with a nearby patch of deciduous trees. The area is mowed and maintained as a northern bobwhite quail (*Colinus virginianus* [L.]) (Odontophoridae) hunting management area. Much of the original habitat is gone. The vouchers of the Vanhorniidae specimen and the Eucnemidae are deposited in the Sam Houston State Natural History Collections.

To the best of our knowledge, the only biological information available for the family Vanhorniidae is that for *V. eucnemidarum* mentioned above, and even for this species the information is very limited. For example, it apparently is not known whether the larvae are ecto- or endoparasitoids. Oviposition appears to occur through cracks in decaying wood and the structure of the ovipositor suggests that the female is incapable of drilling through solid wood (Deyrup 1985). This author also suggested that oviposition might occur on or into earlier stages of the eucnemid host, which would imply that the larva behaves as a koinobiont (i.e., the host continues its development for a period of time). Other families of Proctotrupoidea (Heloridae, Pelecinidae, Proctotrupidae) are known to be endoparasitic koinobionts (Masner 2006), suggesting that the same is true of Vanhorniidae. However, further research is required to substantiate this supposition, as well as to elucidate the function of the unusual abdomen and the exodont mandibles (Deyrup 1985).

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Summary

Vanhorniidae (Hymenoptera: Proctotrupoidae) is a small family that has 1 North American species, *Vanhornia eucnemidarum*. The literature shows that this species is predominantly found throughout eastern North America, with a few collection records in Canada and South Korea. This note describes the first account of Vanhorniidae collected in Florida.

Key Words: *Vanhornia eucnemidarum*; distribution; Eucnemidae

Sumario

Vanhorniidae (Hymenoptera: Proctotrupoidea) es una familia pequeña que tiene 1 especie norteamericana, *Vanhornia eucnemidarum*. La literatura muestra que esta especie se encuentra predominantemente en el este de América del Norte, con algunos registros de recolección en Canadá y Corea del Sur. Esta nota describe el primer registro de la familia Vanhorniidae recolectado en la Florida.

Palabras Clave: *Vanhornia eucnemidarum*; distribución; Eucnemidae

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