

## NOTA CIENTÍFICA

### REJECTION OF THE GENUS *VADUM* (HYMENOPTERA: BRACONIDAE: HELCONINAE) AS A NEOTROPICAL ELEMENT

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Three out of the four tribes of Helconinae are reported for the New World; these are: Helconini, Brachistini, and Diospilini. The latter includes 13 genera and five of these are found in the New World (Sharkey 1997). *Vadum* belongs to the Diospilini and it has been reported for Missouri and Texas (Mason 1987). The genus was described by Mason in 1987 with its only species *V. volatum*. According to Mason's papers (1987) the genus falls into a group composed of the genera *Diospilus* Haliday and *Taphaeus* Wesmael.

Campos (2001, 2004) and Campos & Sharkey (2006) reported the genus for Colombia based on a series of specimens collected in three Andean localities as follows: La Planada private reserve (1°15'N, 78°15'W), Chingaza National Park (4°31'N; 73°45'W), and San José de Fragua (1°20'N, 76°06'W). According to these authors these specimens belong to a new species; however, a close examination of these specimens deposited at the collections of the Instituto de Ciencias Naturales of the Universidad Nacional de Colombia (UNBC) and the Instituto Humboldt of Colombia (IAVH) shows that these wasps actually belong to *Diospilus* Haliday, a cosmopolitan taxon poorly studied in the neotropics with many undescribed species (Sharkey 1997).

According to Mason (1987) the genus is defined by four characteristics of the following structures: labial palpi, metasomal segment I, and clypeus. However, in Mason's own words, the only unique characteristic of the genus is the number of segments of labial palpi; four segments are present in *Vadum* while three segments are present in all the other species of Diospilini. All the Colombian specimens studied have three labial palpi segments.

If we do not attend this single character and we consider that the genus *Vadum* is defined by a combination of characters, the Colombian specimens neither fulfill these characters thoroughly. The first metasomal segment in *Vadum* is described by Mason as "long and untapered", and latter he stated that "Metasoma I in dorsal view about four times as long as its minimum (subbasal) width; base and apex of equal width, about 10% wider than minimum" This description is fully illustrated in the figure 1 of his paper showing an elongated and subparallel metasoma I. None of the specimens we examined followed this description; their first metasomal segment is almost triangular with apex about 200% (+/- 30%, n = 6) wider than base, and the basal length is about 2.6 times the basal width (+/- 6, n = 4) (Figure 1). On the other hand, the clypeus of *Vadum* has a median elevated bilobate projection that appears like a truncate tooth (Figure 3 in Mason's paper). The Colombian specimens do have two apical teeth in the clypeus but this condition is not unique to the genus since we have seen several specimens which clearly fit the concept of *Diospilus* and possess the clypeus with a bilobate border. Further support to our statement is found in Sharkey's key (1997) to the genera of Helconinae where couplet four mentions that "apex of clypeus without median tooth, clypeus evenly rounded (Figure 26) *or with two teeth* (as in fig. 24)" [emphasis added in italics]. Finally, the second labial flagellomere in *Vadum* is described as 1/3 longer than the first one, in the Colombian specimens all the flagellomeres are about the same length.

The identification of the specimens as *Vadum* is the result of the characters used in the key to the New World Helconinae (Sharkey 1997). To key out a specimen as *Vadum*, the key describes the following characters: FW 3RSa shorter than 2M, FW 1RS absent, apex of the clypeus with two blunt teeth, FW 2cu-a present. A specimen of *Diospilus* can be identified as *Vadum* if no other information is available. The key does not mention the number of labial palpi, their relative length, nor the shape of the metasomal segment, and all the other characters could be present in *Diospilus*.

We consider important to point out this amendment for three reasons: First, a second species of *Vadum* will hold the validity of the genus; modern systematics considers monospecific genera as unnatural taxa since these necessarily turn paraphyletic all related groups (Platnick 1976). These taxa could be accepted only if their location within a phylogeny is uncertain and to date no phylogeny for the Diospilini is available. Second, biodiversity databases are using this type of taxonomic information to study biodiversity patterns; rarely, that information is corroborated by specialists with actual specimens, thus, mistakes should be multiplied as the data are replicated by other databases; third, a species of *Vadum* in the neotropics will significantly expand the distribution range of the genus and, it will affect biogeographic analyses. Since this erroneous identification have appeared in several publications it is critical to correct it. We want to thank the insightful comments of the reviewers to this note.



**Figure 1.** Dorsal view of metasoma of one of the specimens studied.

## REFERENCES

- Campos, D.F. 2001. Lista de los géneros de avispas parasitoides Braconidae (Hymenoptera: Ichneumonoidea) de la Región Neotropical. *Biota Colombiana*, 2(3): 193-232.
- Campos, D.F. 2004. La Familia Braconidae en Colombia. Pp. 491-602, en: *Insectos de Colombia Vol. III*. (F. Fernández, G. Amat & G. Andrade, eds.). Universidad Nacional de Colombia, Bogotá.
- Campos, D.F. & M.J., Sharkey. 2006. Capítulo 29. Familia Braconidae. Pp. 331-384, en: *Introducción a los Hymenoptera de la Región Neotropical*. (F. Fernández & M.J. Sharkey, eds.). Universidad Nacional de Colombia, Bogotá.
- Mason, W.R.M. 1987. *Vadum*, a new genus of Nearctic Braconidae (Hymenoptera). *Proceedings of the Entomological Society of Washington*, 89: 325–328.
- Platnick, N. 1976. Are monotypic genera possible? *Systematic Zoology*, 25(2): 198-199.
- Sharkey, M.J. 1997. Subfamily Helconinae. Pp. 261-272, en: *Manual of the New World genera of the family Braconidae (Hymenoptera)* (R. Wharton, P. Marsh & M. Sharkey, eds.). Special Publication No.1. The International Society of Hymenopterists, Washington D.C.