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## On the identity and taxonomic status of the enigmatic mantid *Thespoides bolivari* Chopard, 1916 (Mantodea: Mantidae, Angelinae)

JULIO RIVERA<sup>1,2</sup>

<sup>1</sup>Department of Ecology and Evolutionary Biology, University of Toronto. Correspondence: Royal Ontario Museum, 100 Queen's Park, Toronto, ON, M5S2C6, Canada. E-mail: [julior@rom.on.ca](mailto:julior@rom.on.ca).

<sup>2</sup>Museo de Entomología Klaus Raven Buller, Universidad Nacional Agraria La Molina, Lima, Peru.

Chopard (1916) published a brief paper in which he cited and described a number of praying mantis species from the neotropics. The specimens he studied belonged to the prominent Spanish Entomologist Ignacio Bolívar y Urrutia (1850–1944), whose collection is now housed at the Museo Nacional de Ciencias Naturales in Madrid (MNCN), Spain (Izquierdo *et al.* 1997). In this publication Chopard described *Thespoides bolivari* Chopard, 1916 as a new genus and species, based on a single male obtained by French coleopterist René Oberthür in Cauca, Colombia. According to Chopard (1916) the specimen was remarkable for having, among other features, an abdomen that is markedly shorter than the rest of its body—certainly an unusual morphological trait among the Mantodea. Chopard assigned *Thespoides* to the Mioteryginae (Thespidae), but it was later reassigned (together with *Angela* Serville, 1839 as the “Angelae group”) to the subfamily Schizocephalinae (Mantidae) by Giglio-Tos (1927). Current classifications consider the Angelinae to comprise a distinct subfamily of the Mantidae, with *Thespoides* and *Angela* as the only representatives of this subfamily with a Neotropical distribution (e.g. Ehrmann 2002).

The mantid fauna of Colombia has been the subject of intense scrutiny over the last 15 years (e.g. Salazar 1998, 2000a,b, 2002a,b, 2003, 2006; Agudelo 2004; Agudelo & Chica 2003; Agudelo *et al.* 2007; Medellín & Salazar 2011, Medellín, *et al.* 2007; Ariza *et al.* 2012) and the 122 species known from that country is second in richness only to Brazil (270 spp.) in the Neotropical realm (Rivera 2010). Despite this recent collecting effort, *T. bolivari* is still only known from the originally collected type specimen. Salazar (2006) provided a photograph of the holotype (in its present conditions, as described below) and commented on the absence of *T. bolivari* from recent Colombian collection efforts. The reason for this apparent paradox was made clear when the author re-examined the type of *T. bolivari* during a recent visit to the MNCN collection.

### *Thespoides bolivari* Chopard, 1916

(Figs. 1–2)

The actual holotype (Fig. 1) is incomplete, as the mesothorax, metathorax and abdomen are all now missing. The only parts left are the pronotum, both forelegs, and the head, the latter partially damaged. The specimen bears three labels (Fig. 1). The original description of the complete insect was accompanied by three illustrations that are reproduced in Figure 2. After comparing this specimen with the original description and accompanying illustrations, the author was able to draw several conclusions about its identity, as follows:

A) The only surviving parts of the type (i.e., the prothorax and head) conform to the original description of *T. bolivari*. The left foretibia and femur are notoriously smaller than the right ones, a clear sign of a regenerated lost limb; this anatomical feature of the type was not mentioned by Chopard. Analysis of pronotal proportions, armature of the forelegs and general habitus of these parts confirms that the type of *T. bolivari* is ascribed to *Angela guianensis* Rehn, 1906 (Table 1), a widespread and frequently collected species throughout the Amazon basin, including localities in Colombia. Consequently, the now missing parts of the type specimen (i.e., the mesothorax, metathorax and abdomen), which were described and illustrated by Chopard (Fig. 2), almost certainly belong to another species, as they depart markedly in form from the anatomy of other *Angela* spp., including *A. guianensis*. For example, the cerci in *T. bolivari* were originally described and illustrated as cylindrical, rather than laminar, the

latter a putative synapomorphy of *Angela* and a character of widespread use in identification keys (e.g. Terra, 1995). Similarly, the wings of *T. bolivari* were described as “hairy”, a condition not observed in *Angela*. Accordingly, it is highly likely that the specimen studied by Chopard was a composite specimen comprised of disarticulated body parts from two different species, one of which was *A. guianensis* (Table 1). This likely explains why the abdomen was markedly shorter than the pronotum.

B) Although the posterior thorax and abdomen are now lost, the original description provides clues about the identity of the other species. The wings depicted by Chopard (Fig. 2) exhibit characteristics typical of members of the family Thespidae, such as the vein pattern, the elongated stigma on the forewing and the conspicuous pilosity on the wing surface. Similarly, the triangular supra-anal plate is another feature commonly observed in Thespidae (Fig. 2). Unfortunately, the actual identity of this part of the type cannot be determined based on the description alone, but judging from the metrics provided by Chopard, it likely corresponded to a species of comparable size, such as members of *Musonia* Saussure, 1869 or *Pseudomusonia* Werner, 1909.

C) The distal margin of the type specimen’s pronotum contains a residue of glue, which provides additional (though circumstantial) evidence that, at one time, the anomalous posterior elements of the specimen were glued to the anterior elements.



**FIGURE 1.** Male type of *Thespoidea bolivari* Chopard, 1916 deposited at the MNCN, and its corresponding labels. Scale bar=5 mm.

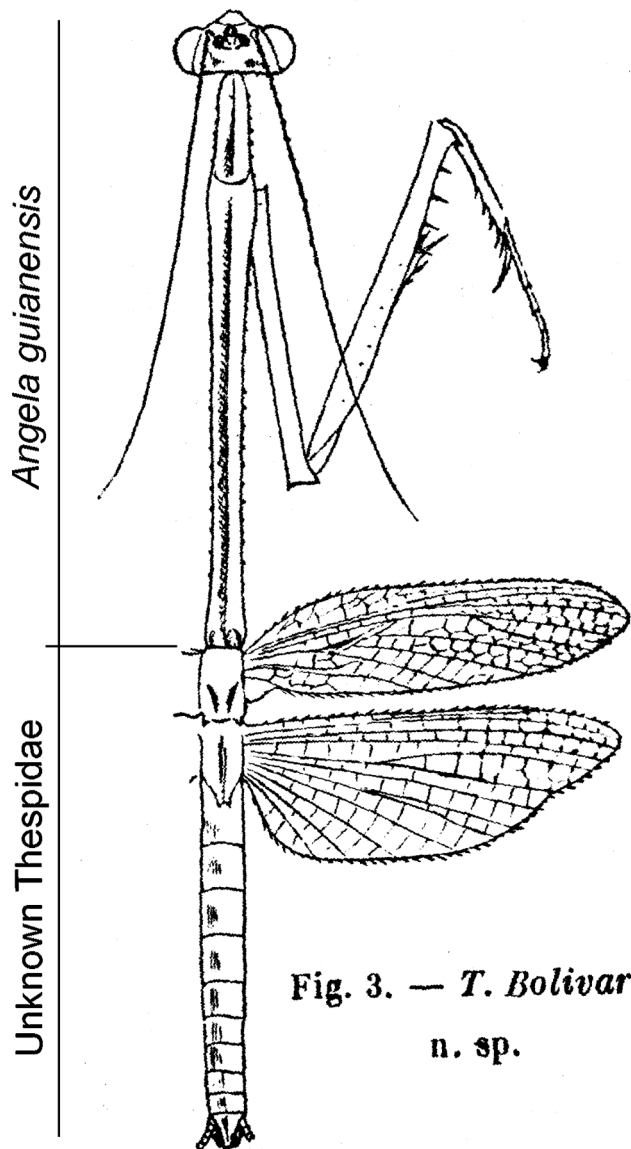


Fig. 3. — *T. Bolivari*,  
n. sp.

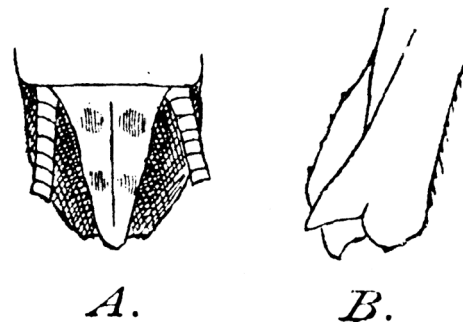


Fig. 4. — *T. Bolivari*, n. sp.  
A. plaque suranale; B. lobe  
apical interne du fémur anté-  
rieur,  $\times 8$ .

**FIGURE 2.** Original illustrations accompanying the description of *Thespoides bolivari* Chopard, 1916 (original numbering and captions included). The full specimen is depicted on the left (notice the absence of cursorial legs, which were missing at the time of description), whereas on the right there is a dorsal view of the last abdominal segments (including supraanal plate and cerci), distal inner lobe of the fore coxa and trochanter. Not to scale.

D) Chopard (1916) assigned *Thespoides* to the subfamily Mioteryginae, a lineage that today constitutes the family Thespidae. Interestingly, the name *Thespoides* was inspired from the apparent similarities between the proposed genus and *Angela* (the species of which were assigned to *Thespis* at the time of Chopard's publication). Both *Angela* and *Thespis* are now considered valid and distinct genera. These two facts suggest that Chopard himself was confused by the dual nature of the specimen before him, without realizing that it was a composite of non-conspecific, disarticulated parts. Regardless, his classification was based on the thespid traits of the type.

Under Article 73.1.2 of the International Code of Zoological Nomenclature (ICZN, 1999) "if the nominal species-group taxon is based on a single specimen, either so stated or implied in the original publication, that specimen is the holotype fixed by monotypy". Chopard described *T. bolivari* on the basis of a single specimen, citing it simply as the "type". Chopard clearly considered the whole specimen as a single individual, therefore his procedure conforms to the ICZN and thus this specimen can be considered as the holotype. However, Article 73.1.5 states "If a subsequent author finds that a holotype which consists of a set of components (e.g. disarticulated body parts) is not derived from an individual animal, the extraneous components may, by appropriate citation, be

excluded from the holotype...”. Thus, in agreement to Article 73.1.5 and to provide nomenclatural stability, the non-conspecific lost parts from the type of *T. bolivari*, already physically removed from the type, are removed from the description. In addition, *Angela guianensis* was described by Rehn (1906) ten years before Chopard’s *Thespoidea bolivari* description, making it necessary to apply the “Principle of Priority” (ICZN Article 23.1). Accordingly, it is established that *Thespoidea bolivari* as a new junior synonym of *Angela guianensis*. A summary of the taxonomy follows:

Genus *Angela* Serville, 1839

=*Thespoidea* Chopard, 1916 **n. syn.**

*Angela guianensis* Rehn, 1906

= *Thespis infuscata* Chopard, 1911

= *Thespoidea bolivari* Chopard, 1916 **n. syn.**

In addition, the type of *Thespis infuscata* Chopard, 1911, also deposited at the MNCN was examined. This species is considered to be a junior synonym of *A. guianensis* by Giglio-Tos (1927), an action later accepted by Rehn (1935) that is herein corroborated. Because *A. guianensis* is a rather common species across the Amazon basin, further studies are needed to determine whether or not other synonyms remain to be discovered.

**TABLE 1.** Comparison between prothoracic structures of *A. guianensis* and *T. bolivari*. Measurements (in mm) of *T. bolivari* were taken from Chopard (1911), whereas minimum and maximum ranges of the same in *A. guianensis* were taken from Rivera (2004) (sample size=22 male specimens).

Structure (length)	<i>A. guianensis</i>	<i>T. bolivari</i>
Pronotum	24–28	23.5
Fore Coxae	10.2–12.1	10.5
Fore Tibiae	4–4.2	4.2
Fore Femora	13–15	14

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