

# **Male genitalia as a diagnostic character in determining *Bembex* F. species from Egypt (Hymenoptera: Sphecidae)**

**by Neveen Samy Gadallah**

**Abstract.** A preliminary key is developed for the identification of Egyptian species of *Bembex* on the basis of male genitalia. The genitalia structure is important as a character for defining and distinguishing the different species with more accuracy than other external body characters, in particular the species *capensis*, *lusca*, *dahlbomii*, *chlorotica*.

**Kurzfassung.** Für die ägyptischen Arten der Wegwespen-Gattung *Bembex* wird ein Bestimmungsschlüssel auf der Basis der männlichen Genitalien vorgelegt. Die Genitalstruktur ist eine wichtige Eigenschaft mit taxonomischer Bedeutung, womit die verschiedenen Arten besser getrennt werden können als mit externen Körpermerkmalen. Dies gilt besonders für die Arten *capensis*, *lusca*, *dahlbomii*, *chlorotica*.

**Key words.** Identification, taxonomy, systematics, Bembicinae, Bembicini.

## **Introduction**

The structure of the male genitalia provides important systematic characters in some groups of insects. It has been used for a long time in the systematics of various groups and has provided the basis for revisionary work. In the Sphecidae, the male genitalia show a great variety of form at both the generic and the specific levels. In some genera, the overall appearance of the genitalia of different species could lead to the erection of new genera (BOHART & MENKE 1976).

In the past, the taxonomy of *Bembex* was based partly on morphological characters such as the different parts of the head (shape of male antennae, labrum, mandibles); sterna II & VI of the male abdomen; and to a large extent, the colour and puncturation of the different parts of the body. The identification of the adult using structure and colour alone is still difficult. Males on the whole have many more taxonomically useful structural characters than females (EVANS & MATTHEWS 1968). However, some of these characters are subject to variation, while the male genitalia, for example, have been found to be more useful in determining species and species groups. Examination of the different parts of male genitalia of different *Bembex* species has indicated their usefulness for accurate taxonomic identification and the relationship between the different species, e.g. the size and form of gonostylus, the structure of cuspis and the digitus of volsella and their chaetotaxy, the shape of aedeagus.

The present work attempts to describe the detailed structure of the male genitalia of most of the Egyptian species of the genus *Bembex*. This study may help, or make it possible, to distinguish most of *Bembex* species with more accuracy and with greater certainty, since most of them possess a very peculiar structure.