PARTIAL GENERIC REVISION OF THE BEE TRIBE OSMIINI
(HYMENOPTERA: MEGACHILIDAE)

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Abstract – In this partial revision of bees commonly placed in the tribe Osmiini, the Hoplitis subgenus Hoplitis is elevated to the generic rank. The other subgenera of the former genus Hoplitis are united with the genera Anthocopa and Osmia into the common genus Osmia. The genus Hoplitis s.str. is probably more closely related to Chelostoma than to Osmia.

Izvleček – Delna rodovna revizija čebel tribusa Osmiini (Hymenoptera: Megachilidae)
V delni reviziji čebel, ki jih navadno uvrščamo v tribus Osmiini, se podrod Hoplitis rodu Hoplitis dvigne na rodovno raven. Drugi podrodovi dose- danjega rodu Hoplitis se združijo z roどvı Anthocopa in Osmia v skupen ro Osmia. Rod Hoplitis s.str. je verjetno bolj soroden rodu Chelostoma kot Osmia.

Introduction

Bees of the tribe Osmiini were classified in two genera, Osmia and Heriades (or Eriades) by Benoist (1929), Fries (1898), Dücke (1900), and Schmiedeknecht (1930). Schletterer (1889) also recognized the genus Chelostoma. The genus Osmia s.l. was split by Michener (1941) into three bigger genera, Anthocopa, Hoplitis and Osmia s.s., and some smaller ones. But many European entomologists still include them all in Osmia. Warncke (1991) even united Heriades and Chelostoma with the large genus Osmia.

Discussion

Michener’s classification was established almost entirely on the basis of the New World species. This is the reason, many Old World taxa were hard to classify: they were
intermediate forms. Michener recognized two tribes, both together forming the subfamily Osmiinae. The Heriadini and Osmiini were divided mainly by the structure of the thorax. An elongated thorax was the main character determining the tribe Heriadini. But, for example, an elongated thorax is also present in *Osma cephalotes* Morawitz. This species belonged to the *Diceratmosia* by Michener’s classification (1941) but was later included in *Osma* s.s. by Sinha (1958). It is a member of the subgenus *Pyrosmia* Tkalču by present classification. No one has ever disputed its status. But this species has a metanotum forming part of the dorsal surface and a propodeum with a clearly differentiated horizontal basal zone, all characteristics of Heriadini. Its parapsidal lines are long, linear, unlike that of other *Osma* s.s. species. An elongated thorax is obviously not always a plesiomorphous character, as stated by Michener, but can also be an adaptation to a particular type of nesting behavior. Almost all species with an elongated thorax nest in narrow burrows in wood. The horizontal basal zone of the propodeum is, however, a plesiomorphous character (Peters, 1978). But it was independently lost, for example, in Lithurgini, Anthidiini, and Megachilini.

Parapsidal lines are a good character dividing *Osma* s.s. from related groups as long as the subgenus *Pyrosmia* is not taken into consideration. They are very variable in this group.

Another character, important in Michener’s classification, was a longitudinal carina along the inner ventral angle of the posterior coxa. But the importance of this character was already disputed by Sinha (1958) who united the genera *Diceratmosia* and *Osma*. Michener in 1966 proposed also the unification of the genera *Hoplitis* and *Anthocopa*.

Various spines on the terga and sterna of males are very unreliable characters as they are under strong selection pressure. They are used in fights between rival males, so they probably evolved independently in several not closely related groups.

It is evident that some new characters are needed for a successful classification of the bees commonly placed in the tribe Osmiini. The classification proposed here, is based primarily on the structure of the anterior margin of the clypeus. In the plesiomorphous state, present also in the closely related tribe Anthidiini, the clypeal margin has transparent membranous outgrowths in the laterodistal corners. Bristles arising from the underside of the posterior margin of the clypeus are oriented straight forward. This type of clypeal margin is present in several genera of the tribe Osmiini: *Chelostoma*, *Hofferia*, *Heriades*, *Protosmia*, and others. But in the genus *Osma*, especially in females, membranous outgrowths are reduced and not obvious. Bristles, on the other hand, are oriented towards the centre and arranged in two or more distinct brushes. This type of clypeal margin is also represented in the genera *Anthocopa* and *Hoplitis*, except the nominate subgenus of the latter, as recognized by Van der Zanden (1988). In *Hoplitis* s. str., the clypeal margin is of the primitive type, which places this genus closer to *Chelostoma* than to *Osma*, as is considered here. The biology of *Hoplitis* confirms the conclusions based on morphology. All species of *Hoplitis* whose biology is known use mud in the construction of their nests. *Hoplitis adunca* nests in burrows in wood and builds cell partitions of mud, just like species of the genus *Chelostoma*. Other species of *Hoplitis* build exposed mud nests, unique among bees of the tribe Osmiini (Westrich, 1990).
The following genera are revised in this article:


Type species: *Apis adunca* Panzer


Genus *Hoplitis*, as understood here, contains only the subgenus *Hoplitis* of Van der Zanden’s classification (1988).


Type species: *Apis bicornis* Linnacus = *Apis rufa* Linnacus


Genus *Osmia*, as understood here, includes the genera *Anthocopa* Lepeletier, 1825, *Hoplitis* without the nominate subgenus, *Metallinella* Tkalcu, 1966, and *Osmia* of Van der Zanden’s classification. This genus could be split into several genera, but this would be premature. It is probably better to recognize several subgenera until some other characters are found.
Fig. 1: Anterior margin of clypeus, a) Osmia (Alcidamea) claviventris Thomson, ♂; b) Osmia (Hoplosmia) scutellaris Morawitz, ♂; c) Osmia (Pyrosmia) cephalotes Morawitz, ♂; d) Hoplitis adunca (Panzer), ♂; e) Protosmia glutinosa (Giraud), ♂; f) Chelostoma rapunculi (Lepeletier), ♂; g) Stelis phaeoptera (Kirby), ♂ (Anthidiini).

Fig. 2: Some specimens of Hoplitis lepeletieri (Perez) resting in the remains of an old nest from the previous year. Photo by Andrej Gogala.
References


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