



## Synonymy of *Orthomus susanae* Serrano & Borges, 2009 with *Orthomus annae* (Donabauer, 2008) (Coleoptera: Carabidae)

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Knowledge of the biodiversity of Madeiran islands has for long attracted entomologists in search of new, rare or biologically interesting beetle species. During the XIX<sup>th</sup> century, Trevor Wollaston extensively sampled the Madeiran islands, compiling a list of almost 700 beetle species, many of them new to science and described by him (e.g., Wollaston 1854, 1865). Thus, for many decades it was thought that the inventory of Madeiran beetle diversity was complete (Machado 2006, but see Lobo & Borges 2010). However, particularly in recent decades, a number of beetle species (most of them of small size and from groups taxonomically more difficult) have been described (see a complete list in Borges *et al.* 2008b) and important taxonomic revisions have also been made incorporating critical analysis by taxonomic experts. For these reasons, it was as a surprise to find a medium-size and yet undescribed ground beetle species following an extensive survey of epigeal arthropods occurring in Madeiran laurel forest fragments. The new species was described in a generic revision of Madeiran *Orthomus* Chaudoir, 1838 submitted to *Zootaxa* (Serrano *et al.* 2009) and the species was included in the comprehensive list of Madeiran terrestrial biodiversity (Borges *et al.* 2008a), a reference publication on Madeiran fauna and flora published in May 2008. This book also presented a chapter where the distribution of the new species was modelled using predictive distribution models (Jiménez-Valverde *et al.* 2008).

Some time after the publication of their paper in *Zootaxa*, the authors found out that another Madeiran *Orthomus* species had been described one month earlier (Donabauer 2008). Taking in consideration the morphological characteristics of the specimens described in both papers and the coincidence of the type localities no doubts remained regarding the synonymy between the two species.

**Species diagnosis:** Both descriptions are coincident in the diagnostic characters of the species. In this species the pronotum has two lateral setae and each elytron has two discal setae inserted on or very close to the third stria. The species shows sexual dimorphism, with male mesotibiae and metatibiae arcuated and having their inner margin dilated. Female abdominal sterna 3 and 4 are provided with deep lateral concavities. The male genitalia is quite characteristic with the median lobe slightly arched and the basal lobe lacking a prominent apophysis. These diagnostic characteristics are highlighted and well illustrated in both species descriptions [see figure 8 in Donabauer (2008) and figures 4 and 5 in Serrano *et al.* (2009)].

**New synonymy:** *Orthomus susanae* Serrano & Borges, 2009 = *Orthomus annae* (Donabauer, 2008).

**Remarks:** In both species descriptions Fanal (in western Madeira) is indicated as the type locality, where the species seems to be locally abundant. Serrano and colleagues have also found the species in one other locality (Ribeiro Bonito), considering the species as having a very restricted distribution. Both papers are coincident on the phylogenetic and morphological affinities of the new species, but they differ in species placement at generic level. Serrano and colleagues (2009) placed it in genus *Orthomus* Chaudoir, 1838 while Donabauer (2008) included it in *Nesorthomus* Bedel, 1899. According with the most recent information on *Orthomus* systematics (Löbl & Smetana 2003, Lorenz 2005), *Nesorthomus* Bedel is not considered a distinct genus, but instead has been assigned as a subgenus of *Orthomus* Chaudoir (see also “Introduction” in Serrano *et al.* 2009). For this reason the authors proposed the abovementioned synonymy.

## References

- Borges, P.A.V., Abreu, C., Aguiar, A.M.F., Carvalho, P., Jardim, R., Melo, I., Oliveira, P., Sérgio, C., Serrano, A.R.M. & Vieira, P. (eds) (2008a) *A list of the terrestrial fungi, flora and fauna of Madeira and Selvagens archipelagos*. Direcção Regional do Ambiente da Madeira and Universidade dos Açores, Funchal and Angra do Heroísmo, 440 pp.