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***Suandrena* and *Micrandrena* species of the Canary Islands and the Madeira Archipelago – new taxonomic, phylogenetic and biogeographical aspects**

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The Canary Islands and the Madeira Archipelago are characterised by many endemic plant and animal species, among them also bee species (Hohmann et al. 1993, Kratochwil et al. 2008). In the following, species of the subgenera ***Suandrena*** and ***Micrandrena*** will be compared by detailed morphological analysis, followed by an evaluation of their taxonomic rank and phylogenetic/biogeographical relationships.

***Suandrena*: Taxonomic aspects:** Warncke (1968) defined *A. maderensis* Cockerell, 1922 (Madeira), as nominate species and considered besides *A. m. portosanctana* Cockerell, 1922 (Porto Santo), two other taxa as subspecies of *A. maderensis*: *A. m. notata* Warncke, 1968 (Canary Islands), and *A. m. fratella* Warncke, 1968 (Morocco). Later, Warncke (1974) revised the classification of *A. m. fratella* and regarded this subspecies as a subspecies of *A. cyanomicans* Pérez, 1895. Dylewska (1983) regarded *A. m. notata* as synonymous to *A. cyanomicans* and *A. m. fratella* as synonymous to *A. leucocyanea* Pérez, 1895. According to our studies all subspecies of *A. maderensis* (including *A. m. fratella*), defined by Warncke (1968, 1974), differ in many morphological features (e.g. for females: body length, labrum process, clypeus and propodeum structure, flagellum and wing colour, puncturing of mesoscutum and scutellum, pubescence of clypeus, genital area, propodeal corbiculae, metasoma). Therefore these subspecies have to be upgraded to species rank. **Phylogenetic/biogeographical aspects:** Porto Santo is geologically the oldest island (14 million years) of the Madeira Archipelago. Much younger are Madeira (4.6) and Desertas Islands (3.6). Concerning the geological age of the different islands, it is hypothesised that the eldest one, Porto Santo, was colonised before the existence of Madeira. All in all the probability is high that *A. fratella* or one of its ancestors colonised first Porto Santo (or stepping-stone islands which today are under sea-level) and developed to the endemic *A. portosanctana*. Later Madeira was colonised by *A. portosanctana*, which developed to Madeira's own endemic species, *A. maderensis*. Based on the larger distance from mainland, the time of colonisation of Porto Santo by *A. fratella* (or an ancestor of this species) might have been later than the colonisation of Fuerteventura and Lanzarote. *A. fratella* or one of its ancestors also colonised Fuerteventura and Lanzarote (Canary Islands) and evolved to *A. notata* (limited in its distribution to Fuerteventura and Lanzarote). Fuerteventura, locus typicus of *A. notata*, is the eldest island of the Canary Archipelago (23.5 million years), followed by Lanzarote (15.5) and Gran Canaria (14.5). Tenerife is geologically much younger (7.5), the youngest islands being those situated furthest westward: La Gomera (1.7) and El Hierro (1.2). We do not support the interpretation of Dylewska (1983), that *A. m. fratella* is synonymous to *A. leucocyanea* Pérez, 1895, and *A. m. notata* is synonymous to *A. cyanomicans*. There are some indications, that *A. cyanomicans* is a phylogenetically younger taxon, which probably evolved from *A. fratella*, one of its ancestors or a closely related species.

Micrandrena: Taxonomic aspects: There is an analogous situation in the case of the subspecies of the *A. wollastoni* group. First described by Cockerell (1922) (specimens collected from Madeira), Warncke (1968) differentiated *A. wollastoni* into four subspecies: the nominate taxon *A. w. wollastoni* Cockerell, 1922 (Madeira, Porto Santo), and, for the Canary Islands, *A. w. acuta* Warncke, 1968 (Tenerife, La Palma), *A. w. gomerensis* Warncke, 1993 (El Hierro [?], La Gomera) and *A. w. catula* Warncke, 1968 (Gran Canaria). According to several morphological differences we separated *A. dourada* Kratochwil & Scheuchl, 2013 (Porto Santo), from *A. wollastoni* Cockerell, 1922, as a species of its own (Kratochwil & Scheuchl 2013). The subspecies of the former *A. wollastoni* of the Canary Islands can be distinguished also by several morphological features (e.g. for females: length of body, wings, clypeus, stigma, propodeum; facial fovea index, colour of, e.g., paraocular area, tibial scopa, tergites 5 and 6, labrum process structure). Therefore the three subspecies of the Canary Islands should be upgraded to species rank: *A. acuta* (Warncke, 1968), *A. gomerensis* (Warncke, 1993) and *A. catula* (Warncke, 1968); Kratochwil & Scheuchl in prep. Phylogenetic aspects: Concerning several morphological features *A. dourada* (Porto Santo) and *A. catula* (Gran Canaria) show a close morphological relationship to each other and to *A. tiaretta* Warncke, 1974. *A. gomerensis* and *A. acuta* can be interpreted as taxa evolved from the potential ancestor *A. catula* on islands much younger than Gran Canaria. Biogeographical aspects: *A. tiaretta* is distributed in southern Spain, North Africa, Israel and Syria. Both islands, Porto Santo and Gran Canaria, are characterised by a similar age of origin. So the probability is high that *A. tiaretta* (or an ancestor of this species) colonised from mainland the islands Porto Santo and Gran Canaria. A taxon of the former *A. wollastoni* group is missing in Fuerteventura and Lanzarote, although both islands could have served as important stepping stones. Another *Micrandrena* species occurring there is *A. sprete* Pérez, 1895. *A. sprete* shows high similarity to *A. tiaretta* too. At present, no comprehensive morphological analysis of *A. sprete* and *A. tiaretta* exists. The same is true for *A. lineolata* Warncke 1968, a second *Micrandrena* species occurring in Tenerife: *A. lineolata* is distributed in the Cañadas and the Teno region and according to Warncke (1968) is closely related to *A. wollastoni*. The endemic *Suandrena* and *Micrandrena* species of the Canary Islands and the Madeira Archipelago are models for the colonisation processes and species diversifications on oceanic islands.

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