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NOMENCLATURAL CHANGES IN *APTERANTHES* MIKAN (ASCLEPIADOIDEAE, APOCYNACEAE)

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RESUMEN: El género *Apteranthes* Mikan se considera constituido por unos ocho táxones, en su mayoría distribuidos por el norte de África. Sin embargo, algunos de sus componentes han sido infravalorados en las revisiones más recientes del género, pese a estar bien caracterizados morfológica y biogeográficamente. En la presente contribución, se aportan datos que sirven para justificar la propuesta de dos nuevas combinaciones nomenclaturales: *Apteranthes europaea* subsp. *negevensis* (Zohari ex Feinbrun) M.B. Crespo –que incluye las poblaciones orientales de la especie–, y *A. munbyana* subsp. *hispanica* (Coincy) M.B. Crespo & Mateo –que se aplica las poblaciones del sudeste ibérico–. Para ambas se adjuntan icones de los autores originales de cada taxon.

SUMMARY: *Apteranthes* Mikan is currently accepted to include about eight taxa, mostly distributed throughout North Africa. However, some of the described taxa have been devaluated in recent reviews of that genus, although they are morphologically and biogeographycally well characterized. In this contribution, data are reported to justify two new nomenclatural combinations: *Apteranthes europaea* subsp. *negevensis* (Zohari ex Feinbrun) M.B. Crespo –to group the eastern populations of the species–, and *A. munbyana* subsp. *hispanica* (Coincy) M.B. Crespo & Mateo –to include the Iberian populations–. For each one, drawings from the original publications are shown.

INTRODUCTION

Caralluma R. Br (*sensu lato*) has been usually accepted to include about 120 taxa, with a wide African, Asian, South African and southwestern European distribution (MABBERLEY, 1993). It belongs to –and in a wide sense it conforms, following MEVE & LIEDE (2004)– subtribe Stapeliinae (tribe Ceropegieae, Asclepioideae, Apocynaceae), which has its centre of origin in East Africa.

In the last comprehensive review of *Caralluma* (*sensu lato*), GILBERT (1990) accepted 57 species arranged in several subgenera. Recent studies based on morphology (PLOWES, 1995) and cladistic analyses of different molecular data (MEVE & LEIDE, 2002, 2004) have demonstrated however the convenience of split-

ting *Caralluma* (*s. l.*) in smaller units, which accord better with the morphological divergence and geographical distribution of the complex.

Concerning the Mediterranean species, and particularly those growing in the Iberian Peninsula, they are currently placed in *Apteranthes* Mikan (PLOWES, 1995; MEVE & LEIDE, 2002), a small genus highly diversified in North Africa (cf. JAHANDIEZ & MAIRE, 1934: 581-583, as *Caralluma*).

Nevertheless, the taxonomic arrangements of *Apteranthes* by PLOWES (1995) and MEVE & LEIDE (2002) are still unsatisfactory, since they neglect of devaluate some Mediterranean taxa. Therefore, in the present contribution some nomenclatural changes are proposed to accommodate them to *Apteranthes*.

RESULTS AND DISCUSSION

Perhaps the most analytic rearrangement of the *Caralluma* complex was published by PLOWES (1995), who accepted 17 genera, of which 12 were described as new, on the basis of morphological differences associated to biogeographical distribution.

Molecular studies by MEVE & LEIDE (2002, 2004) have demonstrated the convenience of accepting many of Plowes's segregates. The arrangement of the former authors leaves subtribe Stapeliinae with 36 genera (MEVE & LEIDE, 2004), 8 of which are segregates of the *Caralluma* complex: *Caralluma* R. Br. (c. 27 taxa; Africa, Arabia, India); *Apteranthes* Mikan (c. 8 taxa; south and southwestern, Mediterranean, Canary Islands, northern Africa, Arabia, western and central Asia); *Australluma* Plowes (1 taxon; Namibia); *Boucerosia* Wight & Arn. (c. 7 taxa; southern Asia); *Caudanthera* Plowes (c. 3 taxa; Africa, Arabia, southwestern Asia); *Desmidorchis* Ehrenb. (c. 11 taxa; northern Africa, Arabia); *Monolluma* Plowes (c. 5 taxa; northeastern Africa, Arabia, Socotra); and *Anomalluma* Plowes (2 taxa; Somalia, Omna, southern Yemen).

Among them, *Apteranthes* is characterized by its lateral pseudo-umbellate inflorescences, and its mostly ovate-lanceolate, conspicuous leaf rudiments. Taxa included here are distributed mainly in North Africa, though some reach the Iberian Peninsula –*A. europaea* and *A. munbyana*–, and others spread to Asia –*A. staintonii* (Hara) Meve & Leide– and northeastern India –*A. tuberculata* (N.E. Br.) Meve & Leide.

*The complex of **A. europaea***

Apteranthes europaea (s.l.) is widely distributed from southeastern Iberian Peninsula to the Middle East, throughout North Africa. Every single population shows peculiarities mainly in the habit and the colour patterns of the flowers, which led to the description of many taxa which are still in need of further taxonomic evaluation.

Despite the diversity of flower size and colouring, there exist indeed some constant differences separating populations from the Middle East (Sinai, Israel and Jordan; Fig. 1), as suggested by MEVE & HENEIDAK (2005). Among them, the shape of leaf rudiments, the stem colour and surface, the corolla trichomes, epidermal cells and colouring patterns, and the gynostegial features, are probably the most reliable characters to separate both geographical groups.

Those eastern populations have been named in different taxonomic ranks (e.g. *Caralluma europaea* var. *judaica*, *C. negevensis*, or *C. aaronis*), and even accepted as independent proper taxa (cf. FEINBRUN, 1978). However, all of them seem to belong to a unique entity which MEVE & HENEIDAK (2005) accepted as *C. europaea* var. *judaica*. Nonetheless, differences between the eastern and western

taxa are sufficient to regard them at the subspecies rank, as proposed here.

*The complex of **A. munbyana***

Apteranthes munbyana is endemic to the southwestern Mediterranean areas, namely to Morocco, Algeria, and Spain. It was described in the genus *Boucerosia* from plants growing in Oran (Algeria).

The Iberian populations were segregated as *B. munbyana* var. *hispanica* by DE COINCY (1898), on the basis of plants previously identified as *Apteranthes gussoneana* (DE COINCY, 1893: 24, tab. X, fig. A). They differed from the typical Algerian plants by its leaf rudiments smaller, sessile and obtuse to subacute; its stems thinner and obtusely angled; its corona pieces shorter and shortly connate; and its fruits straight, only hooked at the apex. Finally, this author (DE COINCY, 1899) studied with more detail the Spanish plants and suggested they should constitute a proper species he drew with detail later (DE COINCY, 1901: Tab. 7; Fig. 2).

Although several authors (BRUYNS, 1987; GILBERT, 1990; MEVE & LEIDE, 2004) have neglected or devaluated the Iberian taxon, M.B. Crespo and G. Mateo (in JUAN & al., 1995), accepted it at the subspecies rank on the basis of morphological and biogeographical differences. This treatment has been followed by other authors (cf. SÁNCHEZ GÓMEZ & al., 1997; LAGUNA & al., 1998; BOLÒS & al., 2005), and the taxon has been included in the Spanish "red book" as Vulnerable, as well as *C. europaea* (BAÑARES & al., 2003).

Differences between the North African and the Spanish plants are significant enough to consider recognition of De Coincy's taxon as a proper subspecies, though in the genus *Apteranthes* as shown below.

NOMENCLATURAL CHANGES

According to the discussion above, the following combinations are proposed for some Mediterranean taxa of *Apteranthes* (a more detailed synonymy is reported in MEVE & LEIDE, 2004):

1. ***Apteranthes europaea*** (Guss.) Plowes, *Haseltonia* 3:59 (1995)
   ≡ *Stapelia europaea* Guss., *Fl. Sic. Prod. Suppl.* 1: 65 (1832) [basion.] ≡ *Boucerosia europaea* (Guss.) Caruel in Parl., *Fl. Ital.* 6: 725 (1886) ≡ *Caralluma europaea* (Guss.) N.E. Br., *Gard. Chron.* 12: 369 (1892)

   subsp. ***europaea***

   = *A. gussoneana* Mikan, *Nov. Act. Nat. Cur.* 17: 594 (1835) ≡ *Boucerosia gussoneana* (Mikan) Hook. f., *Bot. Mag.*: 100, t. 6137 (1874)

   = *Boucerosia maroccana* Hook. f., *Bot. Mag.*: 100, t. 6137 (1874) ≡ *Caralluma maroccana* (Hook. f.) N.E. Br., *Gard. Chron.* 12: 370 (1892)

   = *Caralluma simonis* Hort. ex Berger, *Monatsschr. Kakt.* 14: 6 (1904) ≡ *Boucerosia simonis* (Hort. ex Berger) A.C. White & C. Sloane, *Stap.*: 191 (1933)

   = *Caralluma europaea* var. *confusa* Font Quer, *Mem. Mus. Ci. Nat. Barcelona*, Ser. Bot. 1(2): 12 (1924)

   subsp. ***negevensis*** (Zohary ex Feinbrun) M.B. Crespo ***comb. & stat. nov.***

   ≡ *Caralluma negevensis* Zohary ex Feinbrun, *Fl. Palaestina* 3: 449, Appendix (1978) [basion.] ≡ *A. negevensis* (Zohary ex Feinbrun) Plowes, *Haseltonia* 3: 61 (1995)

   = *Caralluma europaea* var. *judaica* Zohary, *Pal. J. Bot.* ser. 2: 173 (1941) ≡ *A. europaea* var. *judaica* (Zohary) Plowes, *Haseltonia* 3: 61 (1995)

   = *Boucerosia aaronis* Hart, *Trans. Roy. Irish Acad.* 28: 436 (1885)

2. ***Apteranthes munbyana*** (Decne. ex Munby) Meve & Leide, *Pl. Syst. Evol.* 234: 199 (2005)

subsp. ***munbyana***

subsp. ***hispanica*** (Coincy) M.B. Crespo & Mateo ***comb. nov.***

≡ *Boucerosia munbyana* var. *hispanica* Coincy, *J. Bot. (Morot)* 12: 250 (1898) [basion.] ≡ *B. hispanica* (Coincy) Coincy, *J. Bot. (Morot)* 13: 336 (1899) ≡ *Caralluma munbyana* var. *hispanica* (Coincy) Maire in Jahand. & Maire, *Cat. Pl. Maroc* 3: 582 (1934) ≡ *C. munbyana* subsp. *hispanica* (Coincy) M. B. Crespo & Mateo, *Acta Bot. Malacitana* 20: 285. 1995.

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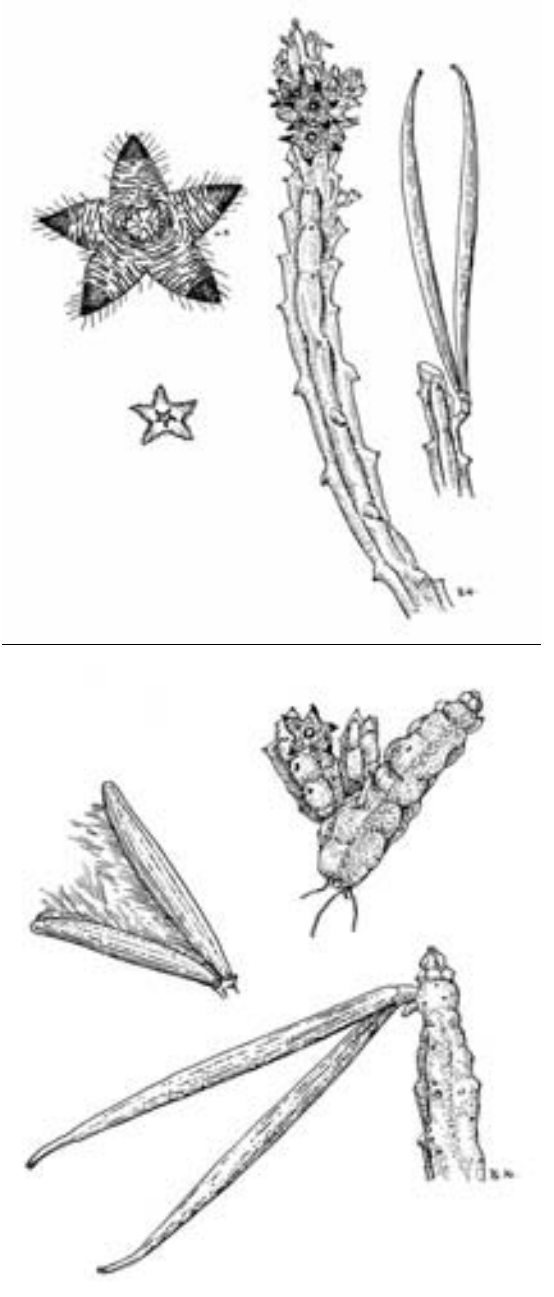

Fig.1.- *Apteranthes europaea* subsp. *negevensis* (Zohary ex Feinbrun) M.B. Crespo. Drawings from FEINBRUN (1978, Plate 43 as *Caralluma europaea* var. *judaica* on the upper part, and Plate 44 as *C. negevensis* on the lower one).

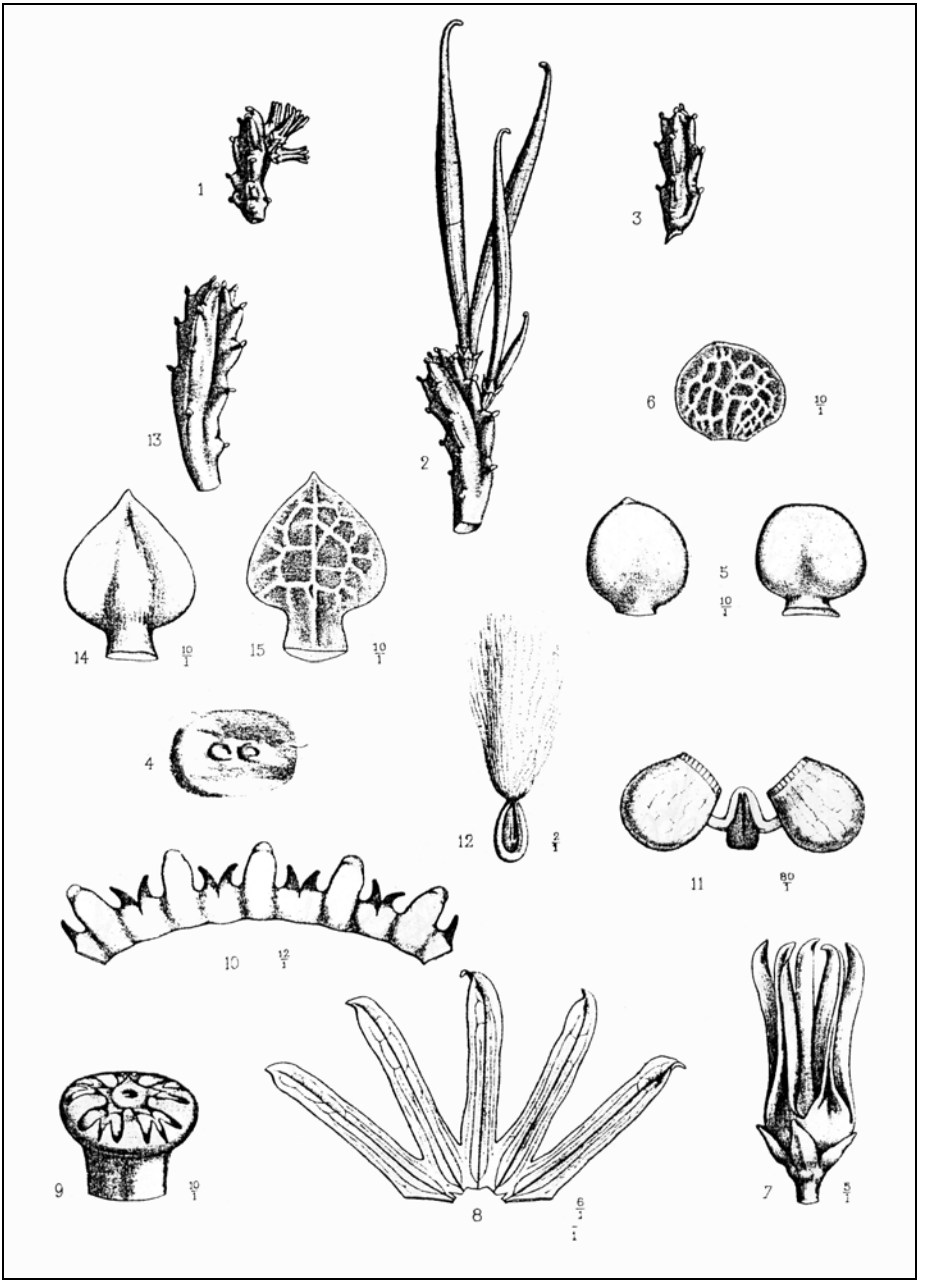

Fig.2.- *Apteranthes munbyana* subsp. *hispanica* (Coincy) M.B. Crespo & Mateo.
Drawings from DE COINCY (1901, tab. 7, as *Boucerosia hispanica*,
but number 13 corresponding to *B. munbyana* s.s.).