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ENDEMIC SPECIES OF DIPLOTAXIS (BRASSICACEAE) IN THE CAPE VERDE ISLANDS

by

Øyvind H. Rustan * and Liv Borgen *

With 1 table

ABSTRACT

The endemic Cape Verde species *Diplotaxis decumbens* (Chev.) Rustan et Borgen comb. nov. and *D. hirta* (Chev.) Rustan et Borgen comb. nov. are removed from *Sinapidendron* and placed in *Diplotaxis* sect. *Catocarpum*.

The species within *Sinapidendron* s. lat. are under revision. Morphological and karyological data give substantial evidence for the exclusion of a group of species endemic to the Cape Verde Islands from this genus. They further indicate a relationship of these species with *Diplotaxis* DC sect. *Catocarpum* DC emend. O. E. Schulz (Schulz 1919).

PREVIOUS INVESTIGATIONS

Lowe (1831) erected the genus *Sinapidendron* Lowe to accommodate a group of species endemic to Madeira. Webb (1848) described and included in this genus also two species endemic to the Cape Verde Islands, *S. gracile* Webb and *S. vogelii* Webb. According to Webb (op. cit.) the two Cape Verde species differed from those in Madeira by having a long slender gynophore and fruits analogous to those in Capparidaceae. In Webb's opinion neither these nor other characters justified their separation as a genus.

* Botanical Garden and Museum, University of Oslo, Trondheimsvn. 23 B, Oslo 5, Norway

In accordance with Webb's interpretation of the genus further species from the Cape Verde Islands were described in *Sinapidendron* by Schmidt (1852) and Chevalier (1935), namely *S. glaucum* J. A. Schmidt, *S. decumbens* Chev., and *S. hirtum* Chev.

Coutinho (1914, 1915) and Schulz (1916) excluded from *Sinapidendron* the species described from the Cape Verde Islands by Webb (1848) and Schmidt (1852). The species were included in *Diplotaxis*, owing to relationship in flower and fruit characters. Schulz (1919) further placed the species within sect. *Catocarpum*.

In the *Sinapidendron* species endemic to Madeira the chromosome numbers $n = 9, 10, 18$ and $2n = 18, 20$ have been reported (Bertoli 1967, Harberd 1972, Borgen 1974, 1975). In *Diplotaxis* sect. *Catocarpum*, Harberd (1972) observed the chromosome number $n = 13$ in spontaneous *D. crassifolia* (Raf.) DC from Sicily, Spain, and Morocco. Borgen (1975) observed the number $2n = 26$ in two endemic species from the Cape Verde Islands, *D. gracilis* (Webb) O. E. Schulz and *D. hirta* (Chev.) Rustan et Borgen (as *Sinapidendron hirtum*). The other Cape Verde species are still not investigated karyologically.

The sect. *Catocarpum* is heterogenous as regards basic chromosome numbers, $x = 11$ being known by reports of $n = 11$ in *D. tenuifolia* (L.) DC and *D. cretacea* Kotov. (Harberd (1972). The basic number $x = 13$ is not reported in other *Diplotaxis* species than those cited above, other basic numbers in *Diplotaxis* being $x = 7, 9$, and 10 (Harberd 1972).

MATERIAL

The results of this study are based on examination of herbarium specimens and living collections. Specimens from the following herbaria (abbreviations according to Holmgren & Keuken 1974) have been studied: BM, BR, CGE, COI, FI, G, G-DC, JE, K, MO, MPU, NY, O, OXF, P, PRC, and US. In addition cultivated specimens raised from spontaneous seeds in the Botanical Garden, University of Oslo, have been examined. Seeds of all *Sinapidendron* species from Madeira were collected by one of us (Ø. H. R.); of the Cape Verde species *D. hirta*, *D. glauca* (J. A. Schmidt) O. E. Schulz, *D. gracile*, and *D. vogelii* (Webb) Cout. by Dr. Per Sunding, Botanical Garden and Museum, University of Oslo.

MORPHOLOGY

Sinapidendron s. lat. comprises yellow flowered, woody perennials with simple leaves. The morphological differences between the species endemic to Madeira and those endemic to the Cape Verde Islands are summarized in Table I. The comparisons are based on previous studies by Lowe (1831), Webb (1848), Schmidt (1852), Coutinho (1914, 1915), Schulz (1916, 1919), Chevalier (1935), and Bengochea & Gomes-Campo (1975), but are verified and supplemented by own observations.

Table I. — Morphological differences between the *Sinapidendron* species endemic to Madeira and the species endemic to the Cape Verde Islands.

Character	Species endemic to Madeira	Species endemic to the Cape Verde Islands
Stigma	flattened, capitate	± bilobed
Lateral nectaries	emarginate	depressed-prismatic
Median nectaries	oblong	semiglobose or stipitiform
Ovules	30-40	50-150
Siliqua	linear-terete, erecto-patent; valves thick, somewhat woody when ripe; seeds uniseriate	linear-flattened, patent-pendent; valves thin, often green when ripe; seeds uni-biseriate
Beak	terete	flattened
Gynophore	absent or indistinct, 0-1 mm	distinct, 1-6 mm
Seeds	oblong-ovoid, 1.2-1.5 mm, not mucous, colour red-brown	ellipsoid, 0.5-1.0 mm, ± mucous, colour brown

TAXONOMIC CONCLUSIONS

Within the genus *Sinapidendron* s.lat. the five species endemic to the Cape Verde Islands compose a group differing from those endemic to Madeira in characters regarded to be important taxonomically (Table I). As stated by Schulz (1919), the Cape Verde species show morphological relationship with the genus *Diplotaxis* sect. *Catocarpum*. Karyological data also support this conclusion. *S. gracile*, *S. vogelii*, and *S. glaucum* have previously been transferred to *Diplotaxis* (Coutinho 1914, 1915 and Schulz 1916) and included in sect. *Catocarpum* (Schulz 1919). The two species later described by Chevalier (1935) are here transferred to *Diplotaxis* sect. *Catocarpum* as *D. decumbens* (Chev.) Rustan et Borgen comb.nov and *D. hirta* (Chev.) Rustan et Borgen comb. nov.

The lectotype here designated for *D. hirta* is the most complete and characteristic specimen among those cited in the protologue. One

sheet (P!) with the same number as the lectotype is clearly another taxon and is excluded. The following specimens were also cited in the protologue: S. Tiago: de Praia à Ribeira da Barca, Chevalier 44539 (erroneously 44359 in the protologue) (P!, 3 sheets; COI!, 1 sheet), all representing *D. hirta*.

Sinapidendron hirtum var. *paucipilosa* Chev. is found not to deviate from *D. hirta* either in hairiness or in leaf size, which were the diagnostic characters cited in the protologue. We therefore reduce it to synonymy with *D. hirta*. The lectotype for the variety (here designated), is the most complete specimen among those cited in the protologue. Another specimen cited in the protologue: Ile de Fogo: Chã das Caldeiras, Chevalier 44958 (P!), also represents *D. hirta*.

Diplotaxis decumbens (Chev.) Rustan et Borgen comb. nov

Basionym: *Sinapidendron decumbens* Chev. — Chevalier 1935, p. 142.
Holotype: Ile de Fogo: Curral Fundo, à 1000 m d'alt., sur Ribeira Lomba à 15 km NNE de S. Filipe, Chevalier 45206 (P!).

Diplotaxis hirta (Chev.) Rustan et Borgen comb. nov.

Basionym: *Sinapidendron hirtum* Chev. — Chevalier 1935, p. 141.
Lectotype here designated: Ile de Fogo: Chã das Caldeiras, Chevalier 44849 (P!). Isolectotypes: 2 sheets (P!).
Synonym: *Sinapidendron hirtum* Chev. var. *paucipilosa* Chev. Lectotype here designated: Ile de Fogo: Chupadeiro, Chevalier 44891 (P!).

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