Canariothamnus B. Nord., a new genus of the Compositae-Senecioneae, endemic to the Canary Islands

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Abstract

Canariothamnus B. Nord. is recognized as a new genus of the tribe Senecioneae from the Canary Islands. Two species are transfers from *Senecio* (sect. *Bethencourtii* DC.) and a third new species, *C. rupicola* B. Nord. is described from the island of La Gomera.

Introduction

The Canary Islands are renowned for their high degree of endemism at different taxonomic levels of flowering plants. On the species level about 500 species out of a total of 1200 native flowering plants are endemic, or 42% (Davis & al. 1994). The number of endemic genera varies with taxonomic opinion, but usually 20 genera endemic to the Canary Islands are recognized.

The islands are part of the Macaronesian Floristic Region, and a number of further genera are Macaronesian endemics, e.g. *Pericallis* D. Don in Sweet in the tribe Senecioneae of the Compositae, with 14 species, 12 of which are endemic to the Canary Islands (Bramwell & Bramwell 2001, Swenson & Manns 2003, Swenson 2004).

According to current taxonomic opinion four species of *Senecio* L. are endemic to the Canary Islands, viz. *S. teneriffae* Sch. Bip. ex Bolle, *S. bollei* Kunk. & Sund., *S. palmensis* (Nees) Chr. Sm. ex Link in Buch, and *S. hermosae* Pitard. The first mentioned is allied to the generic type *S. vulgaris* and accordingly belongs in sect. *Senecio*, whereas *S. bollei* is not assigned to a section. The two last mentioned species, i.e., *S. palmensis* and *hermosae* together constitute the sect. *Bethencourtii* DC. (Candolle 1838, Nordenstam 1978, Jeffrey 1992).

The taxonomic status of sect. *Bethencourtii* was discussed at some length by Nordenstam (1978). Its isolated and anomalous position within *Senecio* was pointed

out. Especially the caudate anthers and the obtuse style-branches with papilliform sweeping-hairs serve to characterize the group.

Exceptionally, KUNKEL treated this group as a genus under the name *Bethencourtia*, although with some hesitation (KUNKEL 1975, 1980), and he made the new combination *B. hermosae* (PITARD) KUNKEL. However, *Bethencourtia* CHOISY was not validly published as a genus, since CHOISY's generic description appeared in synonymy of *Senecio palmensis* (BUCH 1825). There is also a homonym, viz. *Betencourtia* ST.-HIL. (published in 1833, now a synonym of *Galactia* P. BR. in the Leguminosae).

A renewed study of sect. *Bethencourtii* has led to the conclusion that it is best treated as a separate genus. Already CHOISY in BUCH (1825) expressed the same opinion when he introduced the generic name *Bethencourtia*. As mentioned, this name was not validly published and cannot now be adopted for reasons of homonymy. The genus is here described as new and the proposed name *Canariothamnus* needs no further explanation.

Discussion

In several morphological features the new genus *Canariothamnus* is reminiscent of the Malagasy genus *Hubertia* BORY, such as the shrubby habit, narrow sessile leaves, numerous small and yellow-flowered capitula, caudate anthers, etc. However, a close relationship between these two genera is not suggested and is also not supported by ongoing molecular studies (Senecioneae phylogeny Group, PELSER et al. in progress). All three taxa of *Canariothamnus* are included in a broad study of the whole tribe and they form a closely knit group, which is only remotely related to *Senecio*. A very close relationship between *Canariothamnus* and *Hubertia* is not indicated by the molecular data, but *Senecio* s.str. (including of course the type *S. vulgaris*) is even more distantly positioned in our phylogenetic tree. *Canariothamnus* belongs with a few African elements (named *Senecio*, but still unassigned to genera) in a clade which appears as sister to a *Jacobaea* clade. The circumscription of monophyletic generic concepts such as *Senecio* s. str., *Jacobaea*, and other presently ill-defined or unrecognised taxa will be discussed in forthcoming papers, together with a presentation of the complete phylogenetic tree.

The balusterform filament collars, distinct anther tails, and small prismatic hexagonal ovary wall crystals in taxa now referred to *Canariothamnus* were illustrated in NORDENSTAM (1978: Figs. 7B, 10E & 33).

The two known species of *Senecio* sect. *Bethencourtii*, viz. *S. palmensis* and

hermosae, are here transferred to the new genus *Canariothamnus*. During the field work within the present study it became apparent that a third taxon exists on the small island of La Gomera. It is here described as a new species, *Canariothamnus rupicola* B. Nord.

Taxonomy

***Canariothamnus* B. Nord., gen. nov.**

Syn.: *Bethencourtia* Choisy ex Link in Buch, nom. illeg., Phys. Beschr. Canar. Ins. 148 (1825), in syn., non *Betencourtia* St.-Hil., Voy. Intér. Brésil. 1: 376 (1833); *Senecio* sect. *Bethencourtii* DC., Prodr. 6: 411 (1838).

Fruticuli glabri ramosi erecti vel ascendentes. Folia alterna sessilia lineari-lanceolata integra vel sparse dentata vel lobata vel pinnatipartita. Capitula parva corymbosa ecalyculata heterogama radiata flaviflora. Involucri bracteae uniseriatae paucae (4–5). Flosculi radii feminei 1–3 brevi. Flosculi disci 3–5 hermaphroditi; corolla 5-lobata.. Antherae caudatae; endothecium radiale. Styli rami apice obtusi vel subtruncati papillati; areis stigmaticis fere confluentibus. Cypselae oblongae brevihirsutae vel papillosae 5-costatae. Pappi setae numerosae albae minute barbellatae semipersistentes.

Typus: *C. palmensis* (Nees) B. Nord.

Small glabrous shrubs, repeatedly and densely branching. Leaves alternate, sessile, linear to oblanceolate, entire, or toothed or few-lobed to pinnatipartite. Capitula small, corymbose in rather dense bracteate terminal synflorescences, radiate, yellow-flowered. Involucre narrowly campanulate to turbinate, ecalyculate, but subinvolucral bracts present, small, subulate; involucral bracts uniseriate, few (4–7). Ray-florets female, fertile, few (1–3). Disc-florets hermaphrodite, few (3–5); corolla 5-lobed; lobes narrowly ovate-lanceolate, midveined. Anthers tailed; endothecial tissue mainly radial; filament collars balusterform; apical appendage ovate-oblong, flat, obtuse. Style branches obtuse to subtruncate, apically with few and short papilliform sweeping-hairs, inside stigmatic area continuous or nearly so. Cypselas terete, narrowly oblong, shortly hirsute or papillose with obtuse duplex hairs, 5-veined or -ribbed; carpopodium distinct of several cell layers. Pappus bristles numerous, minutely barbellate, white, semi-persistent, basally connate.

Species 3, Canary Islands.

Chromosome no.: n=10 (*C. palmensis*, Ortega & Navarro 1977).

Key to the species of *Canariothamnus*:

1. Most leaves lanceolate-oblong or oblanceolate, up to 10 mm broad, shortly 3–5-

dentate or -lobed with ovate-oblong lobes 1–5 mm long ..... 1. *C. palmensis*
Leaves entire or 2–5-lobed with linear-filiform lobes 5–20 mm long 2

2. Leaves 2–3 cm long, 3–5-lobed; lobes 5–10 mm long ..... 2. *C. rupicola*
Leaves 3–7 cm long, entire or mostly 3-lobed; lobes 10–25 mm long .....
..... 3. *C. hermosae*

1. *Canariothamnus palmensis* (Nees) B. Nord., comb. nov.

Basionym: *Cineraria palmensis* Nees, Horae phys. Berol. Tab. 24 (1820).

Syn.: *Bethencourtia palmensis* (Nees) Choisy ex Link in Buch, Phys. Beschr. Canar. Ins., 148 (1825), nom. illeg.; *Senecio palmensis* (Nees) Chr. Sm. ex Link in Buch, l.c.

Leaves 2–3.5 cm long, 2–10 mm broad, oblanceolate to narrowly oblong-obovate, mostly 3–5(–7)-lobed, some entire or bilobed, flattened, coriaceous; lobes ovate to triangular-oblong, 1–3 mm long, mucronate. *Involucral bracts* 4–5. No distinct calyculus, but small peduncular and subinvolucral bracts present. *Ray-florets* 1–3; tube equalling lamina in length; lamina 4-veined, with additional incomplete veins apically. *Disc-florets* 3–5. Style branches short, not exserted, apically obtuse with few short papilliform pili. Anther tails long, about the length of the balusterform collar. *Cypsela* narrowly oblong, 2.5–3 mm long, straw-coloured, with 5 impressed veins, shortly puberulous with white papilliform obtuse duplex hairs mainly along the veins. *Pappus* bristles numerous, 2.5–3 mm long, minutely barbellate, white, semi-persistent.

C. palmensis is fairly common in the Caldera region of La Palma up to 2400 m s.m., also occurring in barrancos at lower altitudes (450 m, Bramwell & Bramwell 1974, 2001; 165 m, Lid 1967). On Tenerife it is more rare, found in a handful of localities in Las Cañadas around 2000 m (e.g. at Roque del Almendro Amargo, near Boce del Tauce, Nordenstam 9326 in S) and lower down in the Barranco del Río (on steep cliffs at 1400 m, Nordenstam 9328 in S). There is a single record from a much lower altitude (<400 m) in Arico in eastern Tenerife.

In spite of the small flowerheads the plants may be rather showy when the densely corymbose synflorescences are in full flower (cf. photo in Bramwell & Bramwell 2001:353).

The local name is 'Turgayte' (Schenck 1907, Bramwell & Bramwell 1974, 2001).

2. *Canariothamnus rupicola* B. Nord., sp. nov.

Type: Canary Islands, La Gomera, Parque Nacional de Garajonay, Roque de la Zarcita, 1020 m, steep phonolithic rocks, E–NE aspect, 28.II.2002, Nordenstam 9333 (S holotype; K, MA, O isotypes).

Fruticulus ramosus glaber c. 0.5–1 m altus et latus. Folia alterna 2–3.5 cm longa linearia integra vel plerumque 3–5-lobata coriacea; lobis linearis usque ad 10 mm longis et

2 mm latis. Capitula parva numerosa subcorymbosa heterogama ecalyculata. Involucrum anguste campanulato-cylindraceum; involucri bracteae 5–6 lineari-oblongae. Flosculi radii feminei 2–3 flavi. Flosculi disci 3–5 hermaphroditi; corolla flava 5-lobata. Cypselae anguste oblongae puberulae. Pappi setae numerosae barbellatae albae.

Branching glabrous shrublet ca. 0.5-1 m high and wide. *Leaves* 2–3.5 cm long, mostly 3–5-lobed, some bilobed or simple, flattened, subcoriaceous, greyish-green; leaf lobes linear, 5–10 mm long, 1.5–2 mm wide, apically mucronate with brownish-black tips. *Capitula* several to numerous in corymbose bracteolate synflorescences, small, heterogamous; peduncular and subinvolucral bracts small, ca. 1 mm long, subulate. *Involucre* narrowly campanulate to subcylindrical; involucral bracts 5–6, uniseriate, narrowly oblong-lanceolate, 3.5–4 mm long and 0.7–1.2 mm wide, green, 1–3-veined, acute or somewhat acuminate, some with narrow scarious margins. *Ray-florets* 2–3, female, fertile, light yellow; tube cylindrical, 2–3 mm long; lamina oblong, 2.5–3 mm long, 1–1.5 mm wide, 4-veined, apically 3-toothed. Style branches linear, 0.7–0.8 mm long, with continuous stigmatic area, apex obtuse. *Disc-florets* 3–5, hermaphrodite. Corolla yellow, tubular below, gradually widening above, 5-lobed; lobes narrowly ovate, 1–1.2 mm long, distinctly midveined, acute. Anthers 1.7–1.8 mm long including appendage and tails; distinctly caudate; tails ca. ½ the length of filament collar or longer; apical appendage narrowly ovate-oblong, obtuse; endothecial tissue mainly radial with small thickenings; collar elongated, balusterform. Disc style branches linear with confluent stigmatic areas, apically obtuse to subtruncate with only short and few papilliform hairs outside laterally. *Cypselas* narrowly oblong, ca. 2 mm long, 5-ribbed or -veined, shortly villous with white papilliform duplex hairs mainly along the veins; carpopodium distinct of 10–12 cell rows; ovary wall crystals hexa- to octagonal, flat. *Pappus* bristles numerous, white, minutely barbellate, semi-persistent, basally connate into an annulus.

This rare species is only known from three small populations at higher altitudes of La Gomera. In the type locality I counted to only five plants, growing in partly inaccessible rock crevices of the sheer phonolithic precipice of Roque de la Zarcita. These specimens were all large and healthy. The species is also found in two places at Roque de Agando, with a few and somewhat depauperate specimens. My colleague Ulf Swenson in Stockholm (S) inspected one of these populations in 1993 (Roque de Agando, NE slope, 1150 m, 20.III.2003, Swenson 580, photo in S) and he confirms that it is dwindling and that its future is precarious. *C. rupicola* must be classified as a highly endangered species.

3. *Canariothamnus hermosae* (Pitard) B. Nord., comb. nov.

Basionym: *Senecio hermosae* Pitard in Pitard & Proust, Iles Canaries 239 (1908).

Syn.: *Bethencourtia hermosae* (Pitard) Kunkel, Cuad. Bot. Canar. 25: 28 (1975), nom. illeg.

Illustr.: Lid 1967 Plate 3; Bramwell & Bramwell 1974, Fig. 100; Nordenstam 1978, Fig. 33 C, F, G.

Leaves simple or 2–3-lobed, most leaves 3-lobed, 3–7 cm long; lobes linear-filiform, flattened, 1–2.5 cm long. *Involucral bracts* 6–7, lanceolate, 4.5–5 mm long. *Cypselas* terete, narrowly oblong-cylindrical, 2.5–2.8 mm long, greenish to brownish, 5-striate, densely puberulous with white papilliform duplex trichomes. *Pappus* bristles semi-persistent, minutely barbellate, 2.5–3 mm long, white.

C. hermosae is readily distinguished from its congeners by the longer and more dissected leaves. The leaves often have three narrow segments, which are flattened (not cylindrical, as sometimes stated in literature), but as in the other taxa some leaves may be entire or 4–5-lobed.

C. hermosae is endemic to La Gomera, where it is rare and local, found in a few small populations in the Vallehermoso region, e.g. on the steep walls of Roque Cano, and on cliffs at Presa del Encantadora at 340 m s.m. (Nordenstam 9332 in S).

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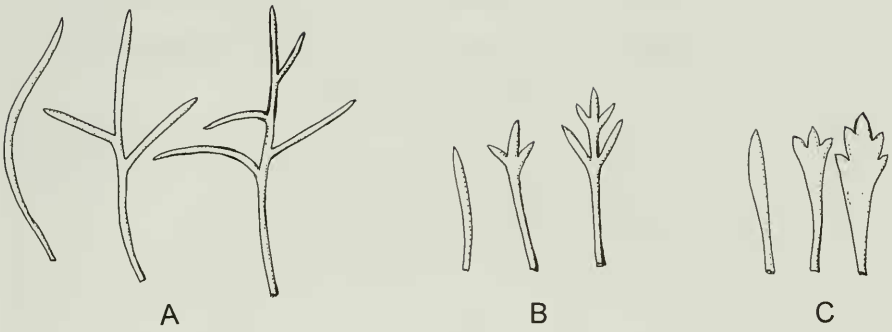

Fig. 1. Leaf outlines in *Canariothamnus*.

A *C. hermosae*.
B *C. rupicola*.
C *C. palmensis*.
(A Nordenstam 9332, B Nordenstam 9333, C Nordenstam 9326, all in S). × ½.
Del. B. Nordenstam.