

The Genus Crambe (Cruciferae) in the Canary Islands Flora

by David Bramwell **

University of Reading, Department of Botany England.

Resumen

El género *Crambe* (Cruciferas) en la Flora Canaria. Se discute la extensión y ecología de las especies endémicas del género *Crambe* en las Islas Canarias. Se enumeran dos secciones: *Dendrocrambe* WEBB y *Rhipocrambe* SVENT. Se reconoce siete especies y dos variedades endémicas a las Canarias: *C. strigosa* con la variedad *gigantea*, *C. scaberrima*, *C. arboorea* con la variedad *indivisa*, *C. pritzelii*, *C. laevigata*, *C. gomerae* y *C. scoparia*.

The genus *Crambe* L. is represented in the Canary Islands by seven endemic species divided between two sections which also seem to be endemic to the Macaronesian region. The two sections are *Dendrocrambe* WEBB and *Rhipocrambe* SVENT.

Dendrocrambe WEBB contains six species all of which are large-leaved, woody plants occurring in old rock formations on the western and central islands (Gran Canaria, Tenerife, Hierro, Gomera, La Palma) but they are not found on the drier eastern islands (Lanzarote and Fuerteventura) where suitable ecological conditions are not found. Several

** Until October 1969
DEPARTAMENTO DE BOTANICA
UNIVERSIDAD DE SEVILLA, ESPAÑA.

of the species were, until recently, poorly known as they are very restricted endemics of small, often inaccessible areas and there is much confusion in the literature as to the number of species occurring and their distribution in the Canary Islands.

Crambe strigosa L'HER. was the first species to be described and is the type species of the section *Dendrocrambe*. P. B. Webb later described three more species: *C. scaberrima* of the western part of Tenerife in the exsiccatae of Bourgeau and *C. gomerae* of Gomera and *C. arborea* of the south of Tenerife which were published by Christ from Webb's posthumous papers and manuscripts. Christ also published De Candolle's *C. laevigata* found only in a single valley on the west side of Tenerife and a sixth species *C. pritzelii* from Gran Canaria was described by Bolle.

The section *Rhipocrambe* SVENT. is monotypic and contains only *C. scoparia* SVENT. from Gran Canaria.

Several of these species are rarely met with in the literature of the Canarian flora. Of the later important works Pitard and Proust list only four species missing out *C. scaberrima* and reducing *C. laevigata* to a footnote. Burchard records only three species and Ceballos & Ortuño have four species from the western islands but include *C. arborea* and *C. scaberrima* as a single species named *C. arborea* but in fact with the description and locality of *C. scaberrima* !!

The present author has found all the species of *Dendrocrambe* during various visits to the islands (1964, 1965, 1968-69) and herbarium material is to be deposited in the Herbarium of the Botany Department of the University of Reading, England (RNG). *Crambe scoparia* SVENT. has not been seen but use has been made of the excellent original description and figure (Sventenius 1953) and the species has also been collected by Lid (1967).

The species can be separated on general morphology and on fruit characters (Bramwell, in prep.).

Crambe L.

Sectio *DENDROCRAMBE* WEBB in WEBB & BERTH. Phyt. Canar. 1, 88 (1936-40).

1. *C. strigosa* L'HER. Stirp. Nov. 1, 151 (1792).

C. scabra LAM.

This species is the most common of the section and definitely occurs on three of the four western island in and just below the cloud forest zone from 500 to 1300 m. in both laurisilva and faya/brezal and it is also found in the sub-alpine zone of Tenerife ca. 2200 m. It is replaced by *C. pritzelii* on Gran Canaria and the records for this species from La Gomera (Bornmüller, Jorstad ex Lid) may refer to *C. gomerae*. The petiole of this species has two well developed and very distinctive auricles.

TENERIFE: Common on the old rock formations of the east and south of the island especially on cliffs in the cloud zone; Anaga, Taganana, Bco. del Infierno de Adeje, Teno, Las Cañadas (Svent.) etc.

LA PALMA: San Andrés y Los Sauces, Barlovento, Bco. Las Angustias, Bco. Las Francesas, etc.

HIERRO: Riscos de Jinama (Bornm.), Hoya de Tinco (Pitard).

(GOMERA): Fuente Blanca (Bornm.) Los Corrales de Benchijigua (Jorstad).

var. *gigantea* CEBALLOS & ORTUÑO

Plants 2-3 metres tall, leaves more than 30 cm. long, sepals reddish.

LA PALMA: Monte El Canal de San Andrés y los Sauces (Ceb. Ort.) Barlovento (Bramwell).

2. *C. scaberrima* WEBB in BOURG., Pl. Canar. Exsic. no. 1264 (1855).

C. scaberrima is a very distinct species which occurs only in the western mountains of Tenerife near Buenavista and Santiago del Teide. The species has very large flowers and rough glaucous leaves. It is known only from three localities but is fairly frequent in two of these.

C. scaberrima generally occurs on old cliff formations between 20-600 m. in the coastal and upper maritime zones.

TENERIFE: Buenavista, cliffs of El Fraile (Bourgeau, Lems, Bramwell) loc. class., Valle de Santiago del Teide 500-600 m. (Bramwell & Sventenius).

Montes y Pasos de Los Silos (Ceb. Ort. sub nomen *C. arborea*)

3. *C. arborea* WEBB ex CHRIST, Engl. Bot. Jahrb. 9, 94 (1888).

This is the most distinctive of all the Canarian species of *Dendrocrambe* and has laciniate leaves with linear-lanceolate segments. It is restricted to a single locality in the south of Tenerife where it is extremely rare.

TENERIFE: Cliffs of the Ladera de Guimar 500 m. (Bourgeau, Bramwell & Sventenius), loc class. et loc. unic.

var. *indivisa* SVENT.

Leaves not deeply laciniate but with laciniate-dentate margins. The variety occurs sporadically amongs the populations of the typical form.

TENERIFE: Ladera de Guimar 500 m. very rare (Sventenius, Bramwell).

4. *C. pritzelii* BOLLE, Append. Plant. Nov. Hort. Berol. (1881).

C. vieraeana WEBB ex CHRIST.

C. pritzelii has very broad crenations on the leaf-margins, very rough leaves which are glaucous-green and small flowers arranged in a long, much branched inflorescence. Its nearest relative seems to be *C. scaberrima* of Tenerife but this is a less branched plant with much larger flowers. The species is endemic to Gran Canaria where it occurs on the cliffs of the north and west sides of the island in and below the cloud zone (300-1.300 m.).

GRAN CANARIA: Tenteniguada (Bourgeau) loc. class., Monte Saucillo (Despr.), Tafira (Bramwell), La Coruña, La Culata (Burchard), Agaete (Bramwell), San Nicolás (Hurst).

5. *C. laevigata* DC ex CHRIST, Engl. Bot. Jahrb. 9, 94 (1888).

This species was first described in manuscript by De Candolle from material collected by Broussonet ("Hab. in Insulis Canariensibus") and was later published by Christ but without further details as to the locality. This remained the situation until 1937 when a vegetative specimen of the plant was collected by Don Manuel González in the deep barranco of Masca on the west side of Tenerife. In 1945 Sventenius discovered, in the same locality, plants with flowers and fruits which were determined to this species by P. Font Quer (Svent. 1948). The locality mentioned above seems to be the only one for this species and it occurs on steep cliffs in shady places between 200-1200 m. above sea-level where it is very rare. The leaves are strongly toothed, ovate-lanceolate with a cuneate base. The petiole is absent or very short and the inflorescence has alternate, strongly patent branches and is very diffuse.

INSULIS CANARIENSIBUS: (Brouss.) s. l.

TENERIFE: Valle de Masca — El Guelgue (González, Svent.), Chierfe (Svent., Bramwell), below Masca (Lems).

6. *C. gomerae* WEBB ex CHRIST, Engl. Bot. Jahrb. 9, 94 (1888).

C. gomerae is very similar to *C. strigosa* and seems to have been mistaken for it by several authors (Bornm., Lid etc.). *C. gomerae* however, has much narrower leaves with very irregularly toothed margins (sometimes almost entire), a more compact, lower habit and larger flowers arranged in a smaller inflorescence than *C. strigosa*. The inflorescences also have ascending to erect rather than patent branches. The Gomeran species occurs in the cloud zone and below, mainly on old cliff formations but also occasionally in open woodland.

LA GOMERA: 150-800 m. Riscos de Tagamiche (Bourgeau, Bramwell) loc. class., Fuente de Agando, Fuente de Yegua (Burchard), Benchijigua (Jorstad sub nomen *C. strigosa*?), Cabeza de Toros (Pitard), Roque de Agando (Ceb. Ort., Bramwell), Bco. de La Laja (Svent., Bramwell), Lomo de Carretón near Arure, Roque de Ojilla, El Roque de Vallehermoso (Bramwell).

Sectio *RHIPOCRAMBE* SVENT., Bol. Inst. Nac. Inv. Agron. 28, 23 (1953).

7. *C. scoparia* SVENT. loc. cit. (1953).

This species constitutes a very important discovery in the flora of the Canary Islands at its nearest relatives appear to be East African. The leaves are caducous, lobed and membranaceous and the plants attain a height of up to 1.5 metres. The flowers are smaller than most of the *Dendrocrambe* species so that *C. scoparia* is very different from the other Canarian Crambes.

GRAN CANARIA: Monte Cedro above San Nicolás, on cliffs, very rare, 600 m. (Svent.) loc. class.; Bco. de Tejada 800 m., on a cliff (Lid).

Summary

The author has prepared a brief geographical and ecological study of the genus *Crambe* L. (*Cruciferae*) in the Canary Islands. The species are listed in two sections: — *Dendrocrambe* Webb and *Rhipocrambe* Svent. Seven species are recognised as being endemic to the archipelago with two endemic varieties: — *C. strigosa* with var. *gigantea*, *C. scaberrima*, *C. arborea* with var. *indivisa*, *C. pritzelii*, *C. laevigata*, *C. gomerae*, and *C. scoparia*.

Acknowledgements

A one year Fellowship given by the Consejo Superior de Investigaciones Científicas de Madrid enabled me to study in the Canary Islands (1968-9) and is gratefully acknowledged. Thanks are also due to Professor E. Fernández Galiano of Sevilla for allowing me use of facilities at the Departamento de Botánica, Universidad de Sevilla, Dr. Eric R. Sventenius of Orotava, Tenerife for his hospitality, help in field studies and discussion, and identification of specimens. Sr. D. Ventura Bravo advised on collecting localities on La Gomera and Professor Günther Kunkel was extremely helpful with advise and assistance during field work on Gran Canaria.

Bibliography

- O. BURCHARD, 1929: Beiträge zur Oekologie und Biologie der Kanarenpflanzen. Bibliotheca Botanica 98, 262 pp., 78 pl., Stuttgart.
- H. CHRIST, 1888: "Spicilegium Canariense", Engler's Bot. Jahrb. 9, 86-172.
- L. CEBALLOS y F. ORTUÑO, 1947: "Notas sobre Flora Canariense", Bol. Inst. Forestal de Inv. y Exper. Madrid no. 33, 1-31.
- 1951: Estudio sobre Vegetación y Flora Forestal de las Canarias Occidentales. Inst. Forestal de Inv. y Exper. Madrid. 465 pp.
- K. LEMS, 1960: "Floristic Botany of the Canary Islands". Sarracenia 5. 1-94, Montreal.
- J. LID, 1968: "Contributions to the Flora of the Canary Islands". Skr. Norske Vidensk.—Akad. Oslo 1 Mat. Naturv. Kl. n.s. 23.

- J. PITARD et L. PROUST, 1908: Les Iles Canaries, Flore de l'Archipel. 503 pp., Paris.
- O.E. SCHULZ, 1919: In Engler, Das Pflanzenreich. Regni Vegetabilis Conspectus 70 (IV. 105): 228-49.
- E.R.S. SVENTENIUS, 1948: "Plantas nuevos o poco conocidas de Tenerife I" Bol. Inst. Nac. Inv. Agron. 18, 1-19. Madrid.
 — 1959: "Specilegium Canariense III" Bol. Inst. Nac. Inv. Agron. 28, 15-28. Madrid.
- P.W. WEBB et S. BERTHELOT, 1836-40: Phytographia Canariensis sect. 1. Paris.

Reseña

I. ASIMOV: *Geschichte der Biologie*.

Fischer Bücherei des Wissens No. 940; 159 páginas. Traducido del inglés por H. Siemon. Frankfurt 1968.

La *Historia de la Biología*, del profesor Asimov (Boston, USA), ofrece en este bosquejo de tamaño pocket book un cuadro sinóptico del desarrollo histórico de las ciencias biológicas, desde sus principios en la época pre-cristiana (griega) hasta las ciencias nuclear-electrónicas de la época actual. Escrito como una novela un tema fascinante —revela el autor en este libro su resumen de las varias disciplinas biológicas: en Atenas, Roma y Alejandría, durante la Edad Media y el Renacimiento; los principios de la biología moderna. Genética, evolución, bioquímica, en su historia y con sus fallas y su gloria final en el camino de la verdad, el descao y destino secreto de la ciencia. Nombres de grandes hombres nos acompañan en esta lectura: médicos, zoólogos, botánicos, químicos, físicos—biólogos todos, en su investigación de síntomas entre causa y resolución.

G. Kunkel