

NOTE ON THE CHARACEAE (CHAROPHYTA) OF THE CANARY ISLANDS

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SUMMARY

In this paper two taxa of Characeae are reported for the first time from the Canary Island of Gran Canaria: *Chara vulgaris* L. var. *longibracteata* (Kütz. in Reich.) H. & J. Groves and *Nitella hyalina* (D. C.) Ag. f. *brachyactis* (A. Br.) Feldm. For two other taxa, *Chara globularis* Thuill. (syn. *C. fragilis* Desv.) and *C. connivens* Salzm. ex A. Br., new localities are reported on the Canary Islands of Gran Canaria and Tenerife. All known Characeae species from the Canary Islands are described and figured.

RESUMEN

Se citan por primera vez dos táxones de la familia Characeae para las islas Canarias, *Chara vulgaris* L. var. *longibracteata* (Kütz. in Reich.) H. & J. Groves y *Nitella hyalina* (D. C.) Ag. f. *brachyactis* (A. Br.) Feldm., y se aportan dos nuevas localidades para los táxones *Chara globularis* Thuill. y *Chara connivens* Salzm. ex A. Br. Se describen todas las especies encontradas hasta ahora en las islas Canarias.

INTRODUCTION

For over a hundred years only one *Chara* species: *Chara globularis* (as *C. fragilis*), was known from the Canary Islands. Dr C. Bolle was the first to collect this *Chara*, May 1856, "Im Sandgrunde der Lagunen von Maspalomas auf Gran Canaria, in Gesellschaft von *Najas major* var. *microcarpa*." (On sand in the Lagune at Maspalomas, Gran Canaria, together with *Najas major* var.

microcarpa) (ref.: BRAUN 1868: 938; and cited by: PITARD & PROUST, 1908: 369; CORILLION & GUERLESQUIN, 1972: 29; GONZALEZ, 1977: 24; GIL RODRIGUEZ *et al.*, 1982: 54) (see also PROCTOR, 1980: 230).

No other localities for *C. globularis* and no other Characeae species were reported from the Canary Islands up to 1975. In July 1975 M.C. Gil Rodríguez collected a *Chara* species in the Laguna de los "Clicos" El Golfo on the island of Lanzarote, which later proved to be *C. connivens* (GIL RODRIGUEZ *et al.* 1982). The same species was afterwards collected in many localities on the island of Tenerife by E. Beltrán, W. Wildpret and C. Rodríguez (herb. TFC Phyc.) and J.C. van Raam (herb. JVR, duplicates at the Rijksherbarium, Leiden (L)).

In 1986 two new Characeae species were discovered on the island of Gran Canaria. N. González collected the first *Nitella* species for the Canary Islands, *Nitella hyalina*, in southern Gran Canaria in the Ayagaures reservoir. While J.C. van Raam found *C. vulgaris* var. *longibracteata* in a waterbasin near St. Lucía and in temporary pools in the barranco de La Data. Moreover *C. globularis* was found growing in the basins of the embalse de Ayagaures.

At this moment, therefore three *Chara* species and one *Nitella* species are known from the Canary Islands of Lanzarote, Gran Canaria and Tenerife.

TAXONOMY

Descriptions and figures of species from the Canary Islands.
All oögonia measurements exclude the coronula.

Chara connivens Salzmann *ex* A. Braun. (Fig. 1).

Plants up to 40 cm long, slender and smooth, with long internodes. Three rows of cortex cells developed. Spine cells absent. Stipulae in two rows, very short. Male and female gametangia on separate plants, dioecious. Male plants generally with strongly incurved branchlets; female plants branchlets straight.

Branchlets with 8-11 corticated segments, the end segment not corticated, 1-3 celled. Bract-cells very short or rudimentary; bractlets two, under oögonia, c. 150 μm long.

Oögonia 600-750 μm long; coronula long conical, up to 300 μm high and 200 μm wide at base.

Oöspores dark brown or black, 550-650 μm long.

Antheridia 500-600 μm in diameter.

Distribution:

Rare in Western Europe and Africa north of Tropic of Capricorn.

Canary Islands: Lanzarote and Tenerife.

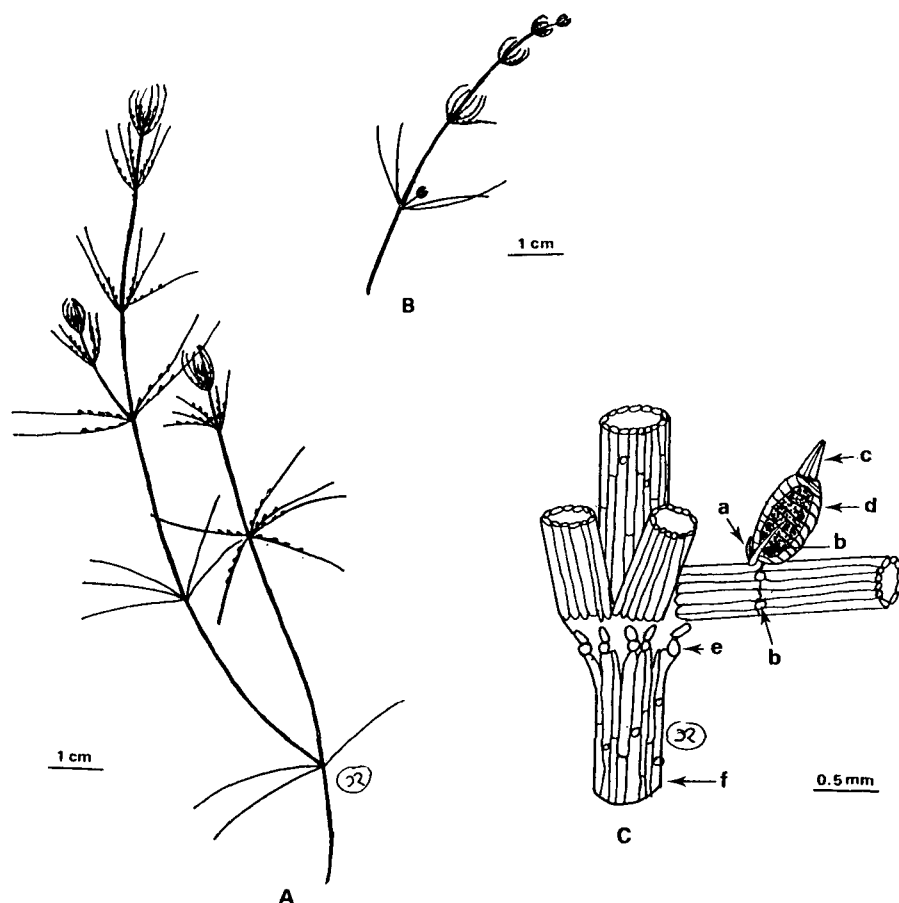


Figura 1.- *Chara connivens*. A - Habit female plant B - Habit male plant, C - Fertile branchlet node. From a waterbasin near Armeñime, Tenerife (spec. 8). a - bractlet, b - bract cells, c - coronula, d - oögonium, e - stipules, f - axis with 3 rows of cortex-cells per branchlet.

Specimens:

Lanzarote: 1) El Golfo; M.C. Gil Rodríguez; July, 1975; herb. TFC (ref. Gil Rodríguez et al., 1982). Tenerife: 2) Las Cuevitas; E. Beltrán; December, 1976; herb. TFC (ref. Ibid.). 3) Ibid.; W. Wildpret, E. Beltrán & C. Rodríguez; December, 1978; herb. TFC (ref. Ibid.). 4) Anocheza; Ibid.; April, 1980; herb. TFC (ref. Ibid.). 5 & 6) Adeje, barranco del Infierno; J.C. van Raam 8201-8202; September, 1982; herb. JVR & L. 7) Costa del Silencio, waterbasin; Ibid. 8203; Ibid.; herb. Ibid. 8) Armeñime, waterbasin; Ibid. 8204; Ibid.; herb. Ibid.

Habitat:

Laguna, brackish water, growing together with *Ruppia maritima* L.

Rivulet, running fresh water, with *Fontinalis antipyretica* Hedw. and *Nasturtium officinale* L.

Dammed pool, fresh water with *Potamogeton pusillus* L.

Agricultural waterbasins, often completely covering the water-surface.

Chara globularis Thuill. (Syn. *Chara fragilis* Desv.) (Fig. 2).

Plants up to 40 cm long, slender and smooth, with rather long internodes. Three rows of cortex cells developed.

Spine cells rudimentary. Stipulae in 2 rows, obscure or very short.

Branchlets with 6-7 corticated segments; the end segment not corticated, 2-celled; first corticated branchlet segment shortened and discoloured.

Posterior bract cells, obscure; anterior bract cells about as long as oögonium, up to 800 μm long. Bracteoles up to 600 μm long.

Monoecious, gametangia together at the 3-5 lower branchlet nodes.

Oögonia 800-960 μm long; coronula 120-200 μm high.

Oöspores dark brown or black; 550-650 μm long.

Antheridia 350-400 μm in diameter.

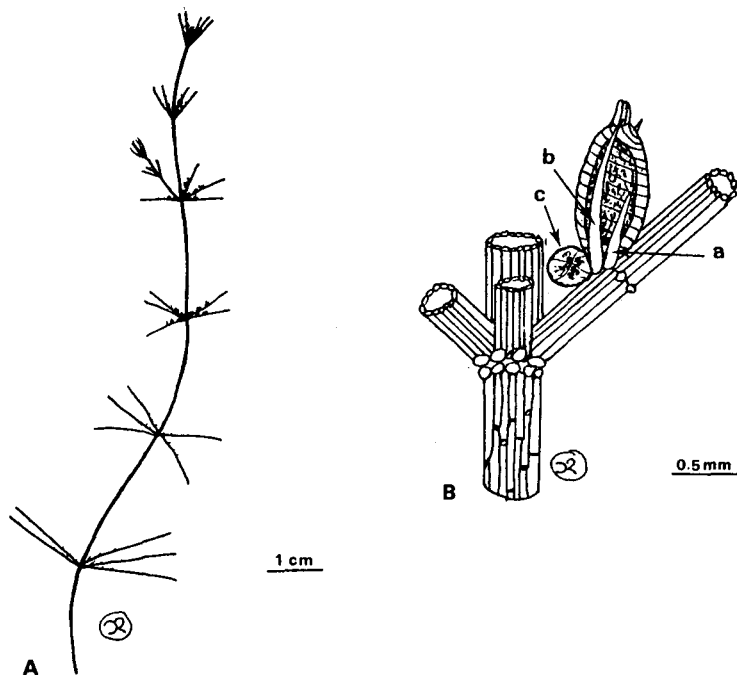


Figura 2.- *Chara globularis*. A - Habit, B - Fertile branchlet node. From overflow basins at the Embalse de Ayagaures near Maspalomas, Gran Canaria (spec. 3). a - bract cells, b - bracteoles, c - antheridium.

Distribution:

Cosmopolitan.

Canary Islands: Gran Canaria.

Specimens:

Gran Canaria: 1) Charca de Maspalomas; C. Bolle; May, 1856; herb. ? (ref. Braun, 1868 p. 939). 2) Ibid.; N. González; June, 1977; herb. LPA Cryp. 00001 (ref. González, 1977 p. 24). 3) Embalse de Ayagaures, overflow basins; J.C. van Raam 8604; April, 1956; herb. JVR & L. 4) Charco de Maspalomas; N. González; May, 1986; herb. LPA Cryp. 00005. 5) Presa Ayagaures; N. González; May, 1986; herb. LPA Cryp. 00004.

Habitat:

Laguna with brackish water, pH 9.5; growing together with *Ruppia maritima* L.

Waterbasins with fast running, fresh water; mixed with *Potamogeton pusillus* L.

Note: No *Chara globularis* could be found in the Charca de Maspalomas in 1987.

***Chara vulgaris* L. (Fig. 3).**

Plants up to 30 cm long, rather robust, with long internodes. Two rows of cortex cells developed. Spine cells rudimentary. Stipules in two rows, up to 200 μm long.

Branchlets with 0-3 shortened corticated segments; end segment elongated, not corticated, 3-5-celled.

Posterior bract cells, rudimentary; anterior bract cells up to 5000 μm long.

Bracteoles up to 1500 μm long.

Monoecious, gametangia grouped at corticated branchlet segments.

Oögonia 500-600 μm long; coronula c. 100 μm high.

Oöspores brown, 400-500 μm long.

Antheridia c. 300 μm in diameter.

All plants seen belong to var. *longibracteata* (Kütz. in Reich.) H. & J. Groves.

Distribution:

Chara vulgaris is a cosmopolitan species, var. *longibracteata* is known from Western Europe and northern Africa.

Canary Islands: Gran Canaria.

Specimens:

Gran Canaria: 1) Waterbasin near St. Lucía; J.C. van Raam 8601; April, 1986; herb. JVR & L. 2) Temporary pools in the barranco de Ayagaures; Ibid. 8602; Ibid.; herb. Ibid. 3) Ibid.; Ibid. 8603; Ibid.; herb. Ibid.. 4) Waterbasin St. Lucía; S. Martínez; May, 1981; herb. LPA Cryp. 00002. 5) Waterbasin barranco de Fataga; Z. Bramwell; March, 1986; herb. LPA Cryp. 00003.

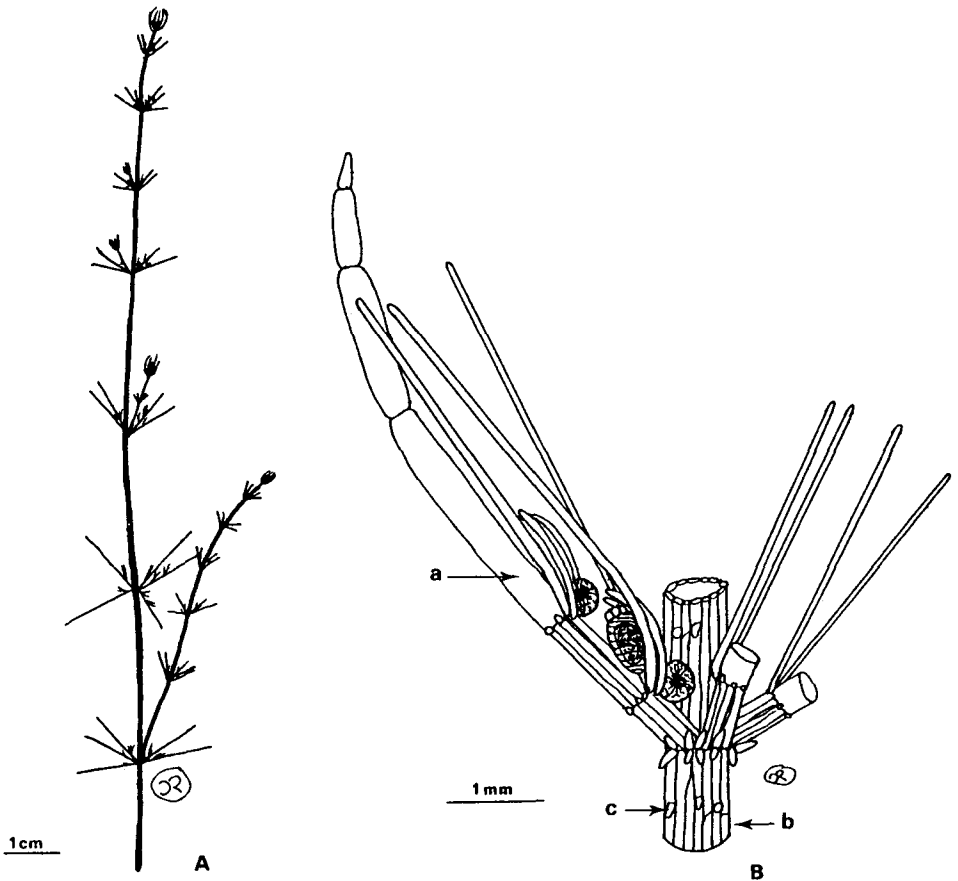


Figura 3 .- *Chara vulgaris* var. *longibracteata*. A - Habit, B - Fertile branchlet node. From a water basin near St. Lucia, Gran Canaria (spec. 1). a - 4-celled end segment not corticated, b - axis with 2 rows of cortex cells per branchlet, c - spine cell.

Habitat:

Natural and artificial waterholes with stagnant or slowly moving fresh water. In these habitats *Chara vulgaris* was the only aquatic macrophyte.

Nitella hyalina (D. C.) Ag. (Fig. 4).

Plants tiny, up to 15 cm high, moniliform, with compact whorls c. 8 mm in diameter, upper whorls with rather thick mucus.

Heteroclemous, with long 2-furcate branchlets and short accessory 1-furcate

branchlets below and above branchlet whorls.

Dactyls c. 5, 1 central; 2-celled, the end cell long conical not mucronate.

Monoecious, gametangia generally clustered at last branchlet joint.

Oögonia c. 250 μm long; coronula c. 25 μm high.

Oöspores not ripe.

Antheridia c. 300 μm in diameter.

The tiny plants with small compact whorls are characteristic of *f. brachyactis* (A. Br.)Feldm.

Distribution:

Nitella hyalina is a cosmopolitan species, *f. brachyactis* is a rare endemic of northern Africa (Sahara region).

Canary Islands: Gran Canaria.

Specimens:

Gran Canaria: 1) Presa de Ayagaures; N. González; May, 1986; herb. LPA Cryp. 00006-00007-00008 & JVR.

Habitat:

Border of lake, pH 7.8-8.7, T^a 17°C, growing together with *Chara globularis* y *Potamogeton pusillus*.

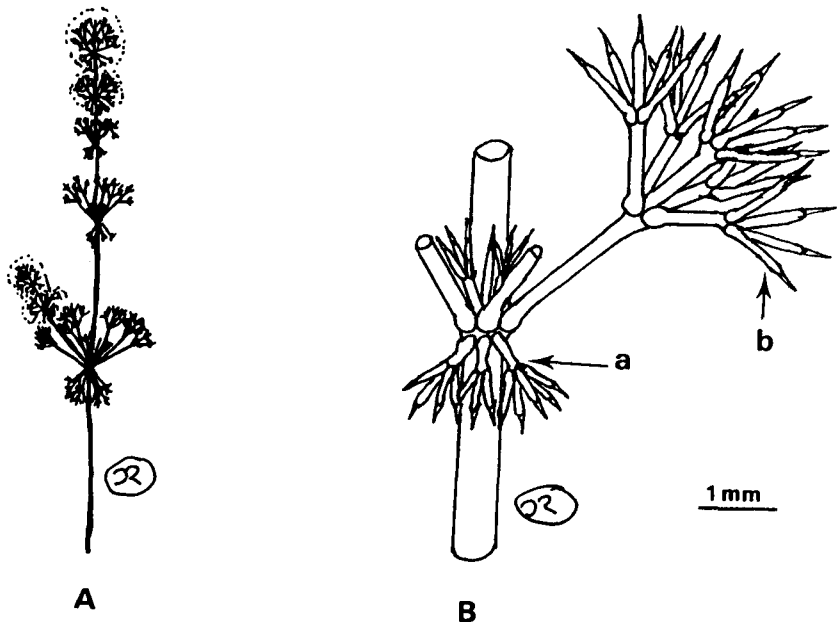


Figura 4.- *Nitella hyalina* *f. brachyactis*. A - Habit, B - Branchlet node. From the Presa de Ayagaures, near Maspalomas, Gran Canaria (spec. 1). a - accessory branchlets, b - 2-celled dactyls.

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