

# *Cerithe gymnandra* Gasparr. (*Boraginaceae*) on the Iberian Peninsula

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## Abstract:

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We studied *Cerithe gymnandra* Gasparr. in the Iberian Peninsula, and present a comparative table of the four varieties of the species. We also comment on two taxa described from Spain: *Cerithe gymnandra* Gasparr. var. *iberica* Caballero and *C. major* L. var. *valentina* Pau, now included in *C. gymnandra* Gasparr. var. *gymnandra*.

Keywords: *Cerithe*, Iberian Peninsula.

## Resumen:

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Estudiamos *Cerithe gymnandra* Gasparr. en la Península Ibérica, presentando en una tabla comparativa las características de las cuatro variedades de la especie. Comentamos además dos táxones descritos sobre materiales españoles: *C. gymnandra* Gasparr. var. *iberica* Caballero y *C. major* L. var. *valentina* Pau, incluidos actualmente en *C. gymnandra* Gasparr. var. *gymnandra*.

Palabras Clave: *Cerithe*, Península Ibérica.

## INTRODUCTION

The genus *Cerithe* L., of the Mediterranean region and Central Europe, is represented on the Iberian Peninsula by two species: *C. major* L. and *C. gymnandra* Gasparr., both belonging to Section *Cerithe* Reichenbach and closely related to each other.

Frequently, *C. gymnandra* has been regarded as a subspecies of *C. major*. The specific level of both taxa was clearly established by VALDÉS (1981), who studied this group on the Iberian Peninsula.

Considered thus, *C. major* L. is a very homogeneous species, but *C. gymnandra* Gasparr. shows great variability in its distribution. Thus, MURBECK (1898) described three varieties: *C. gymnandra* var. *gymnandra*, *C. gymnandra* var. *oranensis* and *C. gymnandra* var. *macrosiphonia*. In order to include the populations growing on the border of the Spanish provinces of Albacete and Ciudad Real, it has been necessary to describe another variety: *C. gymnandra* var. *quichiotis* (CARRASCO, 1993). To this new variety belong some herbarium materiales collected in the Southeast of the Castillian Plateau.

Kariological studies of Iberian samples of the two species have been made by GADELLA & al. (1966), FERNANDES & LEITAO (1972), LOVE & KJELLQVIST (1974), and more recently by LUQUE (1990). These authors coincide in reporting  $x=8$  for both species.

## MATERIALS AND METHODS

In order to establish the real variability of the *C. gymnandra* Gasparr., we made observations from living plants supplemented by herbarium studies. We took measures of 118 sheets from the herbaria MA, MAF and MACB (for abbreviations see HOLMGREM & al., 1990). From each sheet we measured 5 features:

1. Corolla length.
2. Point of stamen insertion.
3. Anther length.
4. Exertion of the anthers from the corolla tube.
5. Size of the mature nutlets.

These are the features considered of greatest diagnostic value for this group.

## DISCUSSION AND RESULTS

The great diversity of *C. gymnandra* Gasparr. has resulted in the description of two taxa from Spanish plants: *C. major* var. *valentina* Pau and *C. gymnandra* var. *iberica* Caballero, opportunely included by VALDÉS (1981: 102) in *C. gymnandra* Gasparr. var. *gymnandra*. This notwithstanding, certain observations can be made about these taxa.

*C. major* L. var. *valentina* Pau, was described based on plants collected by Pau in Valencia: Sierra de Chiva, barranco de La Lándiga, 8-11-VI-1897.

Several errors concerning this taxon have accumulated, perhaps as a result of the irregular taxonomic treatment given by its author. It was published (PAU, 1897: 195) as *C. major* ? L. var. *valentina*, but on the hand-written labels found with the original collections on deposit in MA, Pau respects neither the name nor the taxonomic category, referring to them as *C. valentina* Pau (MA96860) and *C. gymnantra* Gasparr. (*C. major* Willk.! loco) (MA 96833).

Additionally, the detailed locality «ad fontem El Enebro» cited in the publication appears only on the label of sample MA 96833 in which the epithet *valentina* is not given.

This may be the cause of the confusion of VALDÉS (1981) who attributes the name *C. major* var. *valentina* to specimen MA 96833 (VALDÉS, *loc. cit.*: 102) and *Cerintho gymnantra* to specimen MA 96860 (VALDÉS, *loc. cit.*: 99).

The difficulty in interpreting Pau's handwriting has resulted in the locality of the specimen MA 96860 being transcribed by VALDÉS (*loc. cit.*: 99) as Sierra Elvira, which places in Granada materials which are actually Valencian.

*Cerintho gymnantra* Gasparr. var. *iberica* Caballero was described from samples collected in Cáceres: Baños de Montemayor, 20-V-1944, Caballero, and conserved in two collections: MA 96832 and MA 96832(2).

The icon which accompanies the original description (CABALLERO, 1945: 517), permits us to recognize the holotype as the sample to the left of the three which comprise the sheet MA 96832(2), the one chosen by the author for the drawing. The other two samples which accompany it and the two other specimens which are included in MA 96832 are therefore isotypes.

### **Taxonomic, chorological and ecological observations**

The diversity of *C. gymnantra* Gasparr. is apparent in table I.

#### ***C. gymnantra* Gasparr. var. *gymnantra***

*C. major* L. subsp. *gymnantra* var. *typica* (Murbeck) Sauvage & Vindt

*C. gymnantra* Gasparr. var. *typica* Murbeck

*C. gymnantra* Gasparr. var. *iberica* Caballero

*C. major*? L. var. *valentina* Pau

*C. valentina* Pau (in sched.)

	Corolla length (in mm)	Point of stamen insertion in corolla tube	Anther length (in mm)	Exertion of anthers from the corolla tube	Nutlet size (in mm)
<i>C. gymnandra</i> var. <i>gymnandra</i>	16-21-(30)	1/2-1/3 superior	(5,5)-6-7,5-(7,8)	0-1-(1,6) (1/3 of its length)	4-4,5 x 3,2
<i>C. gymnandra</i> var. <i>quichiotis</i>	19-22	1/3 superior	7,5-8,5	4,5-6,4 (2/3 of its length)	4-4,5 x 3,1-3,2
<i>C. gymnandra</i> var. <i>oranensis</i>	12-14-(17)	1/2-1/3 superior	5-7,5	3-5 (more than 1/2 of its length)	3,5-4 x 3
<i>C. gymnandra</i> var. <i>macrosiphonia</i>	23-25-(30)	1/3 superior	6-8	3-4,5 (more than 1/2 of its length)	4,5-6 x 3,3-3,8

**Table 1.** Differences in the diagnostic values of the varieties of *C. gymnandra* Gasparr.

This taxon prefers acid soils, and on the Iberian Peninsula it occurs frequently along the coastal strip from Western Andalucía to Portugal and Galicia. In the interior of the Peninsula, according to RICO (1983), it is known from the provinces of Avila, Salamanca and Cáceres.

The materials distributed with no. 196 of the Exsiccata of the Grupo Botánico Gallego, third fascicle sub *Cerintho major* L. should be included in this variety.

## MATERIAL STUDIED

**Spain. Ávila:** Candeleda, carretera a Oropesa, 4-IV-1982, *E. Rico*, MA 248757; **Barcelona:** V, Tremols, MAF 1591; **Cáceres:** Baños de Montemayor, 20-V-1944, *A. Caballero* (sub *C. gymnantra* Gasparr. var. *iberica*), MA 96832, MA 96832(2), Talayueta, robledales aclarados de la finca Las Lomas, 15-V-1977, *M. Ladero & S. Rivas Goday*, MA 205569, MA 208875, MAF 97441; ibídem, Las Lomas de Santa María, 15-III-1978, *E. Fuertes, M. Ladero & J. L. Pérez Chiscano*, MAF 100619, MA 208496; ibídem, Santa María de Las Lomas, pinar, 8-IV-1983, *Ruiz Téllez*, MA 255793; Valverde de la Vera, 4-IV-1982, *E. Rico*, MA 243022; **Cádiz:** Algeciras, IV-1914, *Belrán*, MA 96854, MA 96855; near Almoraima, abundant here in sandy soil. Tall cork (*Quercus*) woods, c. 140 m, 31-III-1967, *B. Mollesworth Allen*, MACB 9895; prope Chiclana, in arenosis loco dicto «Pinar del Hierro», 19-V-1883, MAF 1600; ibídem, 8-IV-1950, *S. Rivas Goday*, MAF 23665; ibídem, 9-III-1978, *J. Pastor, S. Talavera & B. Valdés*, MA 454041; ibídem, 27-III-1982, *A. G. Bueno, C. Arnaiz & J. Loidi*, MAF 113139; ibídem, suelo arenoso ácido, en pinares de *Pinus pinea* L., 6-IV-1982, *S. Talavera & B. Valdés*, MA 243021, MA 350320, MAF 109221, MACB 8935; Jerez de la Frontera, bordes de caminos, IV-1961, *J. Borja & A. Rodríguez*, MAF 69896; Puerto Real, IV, *M. Rivas Mateos*, MAF 1595; entre Puerto de Santa María y Puerto Real, 13-IV-1978, *M. J. Díez, T. Luque & B. Valdés*, MA 255758; Sanlúcar de Barrameda, IV, *M. Colmeiro*, MA96786; ibídem, dehesa de La Algaida, suelos arenosos, 9-III-1976, *M. Ladero & S. Rivas Goday*, MA 204293; Sierra Carbonera, prope San Roque, in viareis subrunderatis, 5-IV-1978, *S. Rivas Goday*, MAF 101316; Veger, arenales del interior, 7-IV-1967, *O. Bolós, S. Rivas Goday & S. Rivas Martínez*, MAF 69069; ibídem, 6-9-IV-1976, *M. Ladero & S. Rivas Goday*, MA 267822, MAF 94955, MACB 5136; ibídem, 22-VII-1977, *S. Castroviejo, M. Costa & E. Valdés Bermejo*, MA 217719; Véjer de la Frontera, bordes de caminos, IV-1965, *J. Borja, J. Mansanet & A. Monasterio*, MA 267826, MA 204291; **Gerona:** L'Éscala, cala Montgó, 31TEG16, ad ora maris in sabulosis, 28-IV-1978, *J. Molero & A. Pujadas*, MA 243023; **Huelva:** Bonares, 19-III-1976, *B. Casaseca & F. J. Fernández Díez*, MA 204292; ibídem, 19-III-1976, *E. F. Galiano, Malato Beliz & al.*, MA 267824; Candau, 27-III-1966, *A. Sánchez Jurado*, MAF 68192; entre Cartaya y Tariquejo, suelo ácido, 21-III-1976, *E. F. Galiano, Malato Beliz & al.*, MA 267823; El Rocío, Coto del Rey, 15-IV-1976, *S. Castroviejo*, MA 430204, MAF 134124; **Jaén:** Sierra de Cazorla, cunetas, 1-V-1977, *E. Fuertes*, MA 388731; **Málaga:** Sierra Tejeda et Sierra Almijara, bosque de Zafarraya, 21-VI-1936, *M. Laza Palacios*, MAF 1601; **Pontevedra:** El Grove, litoral prope Hermita de Nuestra Señora de La Lanzada, 14-VIII-1969, *E. Valdés Bermejo*, MAF 75825; La Lanzada, Faro Fenicio, 6-VI-1969, *R. Álvarez*, MACB 25850, MA 195260; Sanxenxo, bajada a la praia de Foxos, 29T NG1098, 10 m, 9-V-1987, *X. R. García Martínez*, MA 406735, MAF 131180, MACB 26649; ibídem, parte Sur de la playa A Lanzada, c. La Capiña, 23-IV-1988, *J. Amigo, J. Guitián & R. Oubiña*, MA 478096, MAF 133566; Vigo, in insula

Ons, sat frequens, 1899, *P. Merino*, MA 212076; **Salamanca**: Aldeadávila, 28-IV-1977, *F. Amich*, MA 217666, MA 217697; Pereña, 17-VI-1977, *J. Sánchez*, MA 217756; ibídem, suelos poco profundos, entre asomos graníticos, 2-VI-1978, *J. Sánchez*, MA 217711, MAF 105770, MACB 7370; **Valencia**: Chiva, iuxta fontem de encolla et in Balneis de Veltus, *Lagasca*, MA 96779; Sierra de Chiva, barranco de La Lándiga, ad fontem El Encbro, 600 m, 8-11-VI-1897, *C. Pau*, MA 96833, MA 96860.

**Portugal**: Algarve, Cabo San Vicente, 20-IV-1956, *Malato Beliz & al.*, MA 266839; ibídem, 21-III-1967, *B. Casaseca*, MACB 1814; ibídem, 1968, *J. Borja, J. Mansanet & Demetrio*, MAF 77651; ibídem, 20-IV-1968, *A. Segura Zubizarreta*, MA 350323; ibídem, 1-IV-1983, *E. Ruiz & D. Belmonte*, MA 240754, MAF 125296; ibídem, prope Sagres, 29S NA09, ad 100 m, in pascuis apricis ad viam, 26-III-1978, *J. Fernández Casas, J. Molero, F. Muñoz-Garmendia, S. Pajarón & J. Pujadas*, MA 217710, MA 227811, MAF 105322; ibídem, na bermá dos caminhos, terrenos arenosos, 9-IV-1959, *B. Rainha*, MACB 2642; ibídem, 20-IV-1968, *F. Bellot & B. Casaseca*, MA 498828, MA 187836, MACB 2205; ibídem, Vila do Bisjo, Bordeira, dunas marítimas, 22-IV-1978, *Malato Beliz, S. Rivas Martínez & al.*, MA 266831; ibídem, Carrapateira, playa de Bordeira, 29S NB01, nivel del mar, arenal costero, 29-III-1991, *A. Herreiro*, MACB 47971; Baixo Alentejo, Vila Nova de Milfontes, rochedos e arenas da praia, 27-IV-1956, *Malato Beliz*, MA 266838; Estremadura, Cintra, em Almecagence, na bermá da estrada, a caminho da Praia da Adraga, 12-V-1944, *B. Rainha*, MA 96802; ibídem, Frafaria, nas areias sub *Pinus halepensis*, terras cult. prox. Santo Antonio, 12-III-1943, *G. Pedro, C. Fontes & M. Silva*, MA 96801; ibídem, Sesimbre, Lagoa de Albufeira, áreas dunares de pinhal na margen sul da Lagoa, 29-III-1988, *A. Moura*, MA 479456; San Joao da Pesqueira, Monte de San Salvador do Mundo, *A. Rozeira & A. Serra*, MA 504015.

**France**: Gard, Mass de Labbé, près Aiguesmortes, sables de la pinède a *Pinus pinea*, 6-IV-1931, *G. Tallon*, MA 471071.

**Algeria**: Kabylic, Bougie, prairies sur le calcaire, V-1896, *E. Reverchon*, MA 96842.

**Morocco**: El Araix, 17-III-1930, *P. Font Quer*, MA 96840, MAF 1602; Kenitra, pr. opidium Mehdiya, loco dicto Kasba Mehdiya, 40 m, in pineto raro. solo sabuloso, 21-V-1985, *C. Blanché, J. Fernández Casas, J. Molero, J. M. Montserrat & A. Romo*, MA 302838; Melidia, 15-II-1988, *J. Lewalle*, MA 509355; Temara, Ouest Yquem, 12-III-1988, *J. Lewalle*, MA 509354.

### *Cerintho gymnandra* Gaspart. var. *quichiotis* Carrasco

To the present this taxon is known only from the provinces of Ciudad Real and Albacete, where it prefers basic soils.

The specimens published as *C. major* L. (VELAYOS, 1983), belong to this variety.

### MATERIAL STUDIED

**Spain. Albacete**: Alcaraz, La Molata [«La Mulata»], 24-V-1928, *Cuatrecasas*, MAF 1603; ibídem, 20-VI-1935, *González Albo*, MA 96778; ibídem, WH4677, en herbazales con gran humedad, 11-VI-1983, *J. M. Herranz*, MA 326329; **Ciudad Real**: Lagunas de Ruidera, base de los cerros frente a la Laguna La Colgada, 30S WJ1112, al lado de la carretera, 9-V-1980, *M. A. Carrasco & M. Velayos*, MACB 47373, MACB 47374; ibídem, 4-IV-1987, *M. A. Carrasco, C. Monge & M. Velayos*, MACB 47375.

***Cerintho gymnantra* Gasparr. var. *oranensis* Murbeck**

*C. oranensis* Battand.

Lives in North Africa, from Tunisia to Morocco. We have not opportunity to study sheets from Italy.

MATERIAL STUDIED

**Algeria:** La Macta, près Mostagnem, broussailles bordant la mer, 7-V-1908, *A. Faure*, MA 96856; ibidem, pelouses sablonneuses, 9-IV-1933, *A. Faure*, MA 96858; Orán, 20-IV-1889, *F. Doumergue*, MAF 1586.

**Morocco:** Kebdana, Cabo del agua, bordes sabloneaux, 12-V-1935, *Sennen & Mauricio*, MA 161364; Larache, V-1913, *J. Dantín*, MA 96809; ibidem, primavera 1914, *Pérez Camarero*, MA 96858, MA 96857; Mamora, suberctum, 8-IV-1934, *Huguet del Villar*, MAF 61757; Temara, Rabat, alt. 30 m, pelouse a Chamacrops, 23-II-1974, *J. Lewalle*, MA 226245.

***Cerintho gymnantra* Gasparr. var. *macrosiphonia* Murbeck**

Lives in North Africa, from Algeria to Morocco.

MATERIAL STUDIED

**Algeria:** Orán, Batterie espagnole, sables, 21-III-1912, *Ch. Duffour*, MA 96843, MA 177051; ibidem, 21-III-1912, *CH. d Alleizette*, MA 96845; ibidem, pelouses et broussailles, 27-III-1932, *A. Faure*, MA 96846, MAF 1585; ibidem, Vallou de Noiseur, prairies, 10-IV-1904, *A. Faure*, MA 96844.

**Morocco:** Benisnassen, collines calcaires de Taghit, 28-V-1935, *Sennen & Mauricio*, MA 161363; Mazuza, barranco del Nano, 26-IV-1932, *A. Pardo*, MA 96834; Melilla, Gurugú, 14-VI-1915, *A. Caballero*, MA 96812; ibidem, barranco del Lobo et Basbel, II-VI-1930, *Sennen & Mauricio*, MA 96835, MAF 1610; ibidem, in herbosis vallis Tigorfaten, 70 m, 8-IV-1929, *P. Font Quer*, MA 96841; ibidem, sol calcaire, 30-III-1933, *Mauricio*, MA 96836, MAF 61756; environs de Taforalt, pelouses et Broussailles, 850 m, 20-V-1931, *A. Faure*, MA 96847; Tctuan, 1921, *M. Martínez*, MA 96837; ibidem, V-1921, *C. Pau*, MA 96839.

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