

New data on nothotaxa of *Thymus* L. in northeastern Spain

Gonzalo Mateo¹ et Manuel B. Crespo²

¹Departamento de Biología Vegetal (U. D. Botánica). Universidad de Valencia.
C/ Dr. Moliner, 50. E-46100 Burjassot, Valencia, Spain.

²Departamento de Ciencias Ambientales y Recursos Naturales (Botánica).
Universidad de Alicante. Apartado 99. E-03080 Alicante, Spain.

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ABSTRACT: A revision of nothotaxa of *Thymus* L. (*Lamiaceae*) growing in the mountain range called Sistema Ibérico (northeastern Spain) is given. Fourteen nothospecies are accepted to occur in this territory, two of them being described as new: *Thymus x bonichensis*, nothosp. nov., and *Th. x borzygis*, nothosp. nov. Besides, the protologue is summarized for each one, and a diagram showing all relationships among them is also presented.

KEYWORDS: *Thymus*, *Lamiaceae*, nothotaxa, Spain.

Introduction

A complete revision of the Spanish taxa of *Thymus* in the Iberian Peninsula was published by MORALES (1986), and the nothotaxa known at that time were also included.

Nevertheless, RIVAS-MARTÍNEZ et al. (1988) supplied new data on the Spanish taxa of the Sect. *Hyphodromi* (A. KERNER) HALÁCSY, and proposed four new species rather differing in their ecological behaviour and morphological features.

New nothotaxa from Sistema Ibérico (eastern Spain) were later described by URIBE-ECHEBARRÍA (1990) and MATEO et CRESPO (1992, 1993). The latter authors also provided an updated checklist and additional information on nothotaxa occurring in this territory.

In this contribution two new nothospecies are described to complete the current information on the hybrids growing in the eastern Iberian Peninsula, and the relationships among all known nothotaxa of this territory are graphically summarized.



HOLOTYPE

HERBARIUM VAB - UNIVERSITATIS VALENTINAE - N° 91/1803

Thymus x bonichensis G. Mateo & M. B. Crespo

(*Th. leptophyllus* x *Th. mastichina*)

Hs, CUENCA: Boniches, 30SXK1425, in *Cisteto ladaniferi*
solo schistoso, ad 1000 m alt., die 8-VI-1991

Leg.: G. Mateo (4344)

Fig. 1. - Holotype of *Thymus x bonichensis* G. MATEO et M.B. CRESPO.

Results and discussion

New nothotaxa:

1. *Thymus x bonichensis* G. MATEO et M.B. CRESPO nothosp. nov. (*Th. leptophyllus x Th. mastichina*)

A *Th. mastichina* differt statura minore; caulis principalibus prostratis vel adscendentibus interdum radicantibus, multis ramis floriferis erectis; foliis minoribus a basi ciliatis; inflorescentia non vel minus glandulosa; calycibus manifeste zygomorphis, viridulis, dentibus brevius ciliatis, ciliis \pm 0.5 mm long. nec \pm 1 mm long.

A *Th. leptophyllo* discrepat caulis erectioribus altioribusque rare radicantibus, ramis floriferis longioribus; foliis cinereo-virescentibus, pilis brevissimis plus minusve dense obtectis; calycibus minus zygomorphis, breviter laxaque tomentosis, dentibus labii superioris longioribus et manifeste ciliatis.

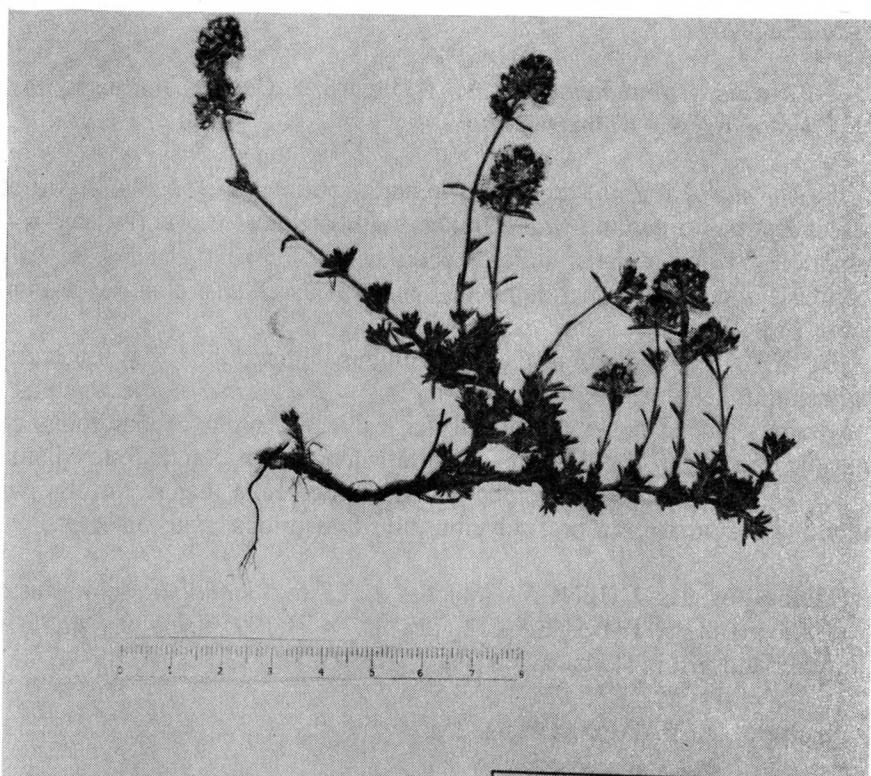
A *Th. x celtiberico* praeccipue differt glabrescentia majore in totis partibus; habitu lignosiore et erectiore; calycibus pilis brevioribus laxius obtectis.

Holotypus: Hs, CUENCA: Boniches, in *Cisteto ladaniferi* solo schistoso ad 1000 m alt., UTM: 30SXK12, ubi die 8-VI-1991 legit G. MATEO-4344. Asservatus est in Herbario VAB no. 91/1803. Fig. 1.

Isotypus: In VAB, et ABH no. 2517

Dwarf shrub with a woody, perennial, prostrate or adscendent, rather stout stem (\pm 2-5 mm); branches thin, reddish, leafy, not very long (\pm 4-10 cm), covered with short retrorse hairs, and with terminal inflorescences. Leaves green or somewhat greyish-green, covered with rather dense very short hairs becoming 6-12 pairs of multicellular cilia in the lower half. Inflorescence capitate, globose or subglobose, \pm 6-12 x 10-12 mm, rarely with an additional smaller pauciflorous verticillaster. Bracts ovate-lanceolate, \pm 6-7 x 2-2.5 mm, with an indumentum similar to that on the leaves. Calyx green, glabrescent, with sessile glands and some very short simple hairs, not strongly bilipped, \pm 4-5 mm long, with a short tube (1.5 mm); lower teeth linear, \pm 2.5 mm long, clearly pectinate-ciliate; upper teeth linear-lanceolate, connate in the basal third. Corolla white, as long as the calyx.

It differs from *Th. mastichina* by its lower, prostrate or adscendent, sometimes rooting stems; leaves smaller, ciliate at the basis; inflorescence not or scarcely glandulose; calyces notably zygomorphous, greenish, with short-ciliate teeth (\pm 0.5 mm instead of 1 mm long).



HOLOTYPE

HERBARIUM VAB - UNIVERSITATIS VALENTINAE - № 92/2581

Thymus x borzygis G. Mateo & M. B. Crespo

(*Th. borgiae* x *Th. zygis*)

Hs, GUADALAJARA: Torremocha del Pinar, hacia Aragoncillo,
30TWL8029, in *Junipereto thuriferae* solo
calcareo, ad 1300 m alt., die 19-VII-1992.

Leg.: G. Mateo (6578)

Fig. 2. - Holotype of *Thymus x borzygis* G. MATEO et M.B. CRESPO.

It differs from *Th. leptophyllus* by its taller erect stems, rarely rooting, with longer flowering branches; leaves greyish green, \pm densely covered with very short hairs; calyces slightly zygomorphous, shortly and laxely tomentose, with longer and ciliate upper teeth.

It differs from *Th. x celtibericus* mainly by its woody and erect stems; calyces (and also the rest of the plant) glabrescent, with shorter and scarce hairs.

MATEO et CRESPO (1993) set up a new hypothesis concerning the identity of the parental taxa of *Th. x celtibericus* PAU, which was to originate from *Th. izcoi* (*Th. leptophyllus* auct.) and *Th. mastichina*. This new interpretation allows to describe a different nothospecies coming from the hybridization between the typical *Th. leptophyllus* (growing in the northeastern Serranía de Cuenca) and *Th. mastichina*, which is here named *Th. x bonichensis*.

2. *Thymus x borzygis* G. MATEO et M.B. CRESPO nothosp. nov. (*Th. borgiae* x *Th. zygis*).

A *Thymo borgiae* differt foliis minoribus, revolutis, cinereo-virescentibus, breve tomento comparate dense obtectis; floribus albidis in inflorescentia laxiore dispositis aliqui vesticillatris distantibus; bracteis angustioribus.

A *Th. zygide* discrepat caulinis minus lignosis; foliis latioribus parvius revolutis, parum cinerascentibus tomento sparso obtectis; floribus majoribus in glomerulis plerumque densioribus; bracteis planioribus, quam folia manifeste latioribus.

Holotypus: Hs, GUADALAJARA: Torremocha del Pinar, hacia Aragoncillo, UTM: 30TWL8029, in *Junipereto thuriferae* solo calcareo ad 1300 m alt., ubi die 19-VII-1992 legit G. MATEO-6578. Asservatus est in Herbario VAB no. 92/2581. Fig. 2.

Dwarf shrub with a woody, perennial, prostrate or slightly adscendent, rather stout stem (\pm 2-4 mm); branches thin, reddish, leafy, not very long (\pm 3-12 cm), covered with short retrorse hairs, and with terminal inflorescences. Leaves greyish-green, covered with rather dense very short hairs, and with \pm 4-8 pairs of cilia in the lower side; mature leaves revolute or semirevolute, linear or linear-elliptic, \pm 5-8 x 1 mm, the lowermost bearing axillary clusters of small young leaves. Inflorescence capitate, globose or subglobose, \pm 8-12 x 10-12 mm, sometimes with 1-2 additional smaller verticillasters. Bracts lanceolate, \pm 5-7 x 1-1.5 mm, wider and flatter than the leaves, and with a similar indumentum. Calyx \pm 4 mm long, bi-lipped, with a short tube (1.5-2 mm); lower teeth linear, \pm 2 mm long, shortly ciliate (\pm 0.5 mm long); upper teeth triangular, very short (up to 1 mm). Corolla whitish or slightly pinkish, scarcely longer than the calyx (\pm 5.5 mm).

It differs from *Th. borgiae* by its smaller, revolute, greyish-green leaves, covered with a rather dense and short tomentum; whitish flowers, clustered in laxer inflorescences, with some distant verticillasters; bracts narrower.

It differs from *Th. zygis* by its scarcely woody stems; leaves wider and slightly revolute, greenish, with a rather sparse indumentum; flowers longer, clustered in generally denser glomerules; bracts flatter and clearly wider than the leaves.

Other studied materials:

Hs, CUENCA: Noheda to Chillarón, UTM: 30TWK64, low bushy vegetation in oak-woods on calcareous soil, 1000 m, 28-VI-1992, G. MATEO-6432, VAB 92/2258.

Considered nothotaxa

The taxonomic arrangement of the Sect. *Hyphodromus* suggested by RIVAS-MARTÍNEZ et al. (1988) allows to reconsider the position of several nothotaxa, and also to describe other new hybrids to be regarded as synonyms from a different interpretation of the parental taxa.

On the basis of the data reported by MATEO et CRESPO (1993), a diagram (Tab. 1) has been built to summarize the relationships among them.

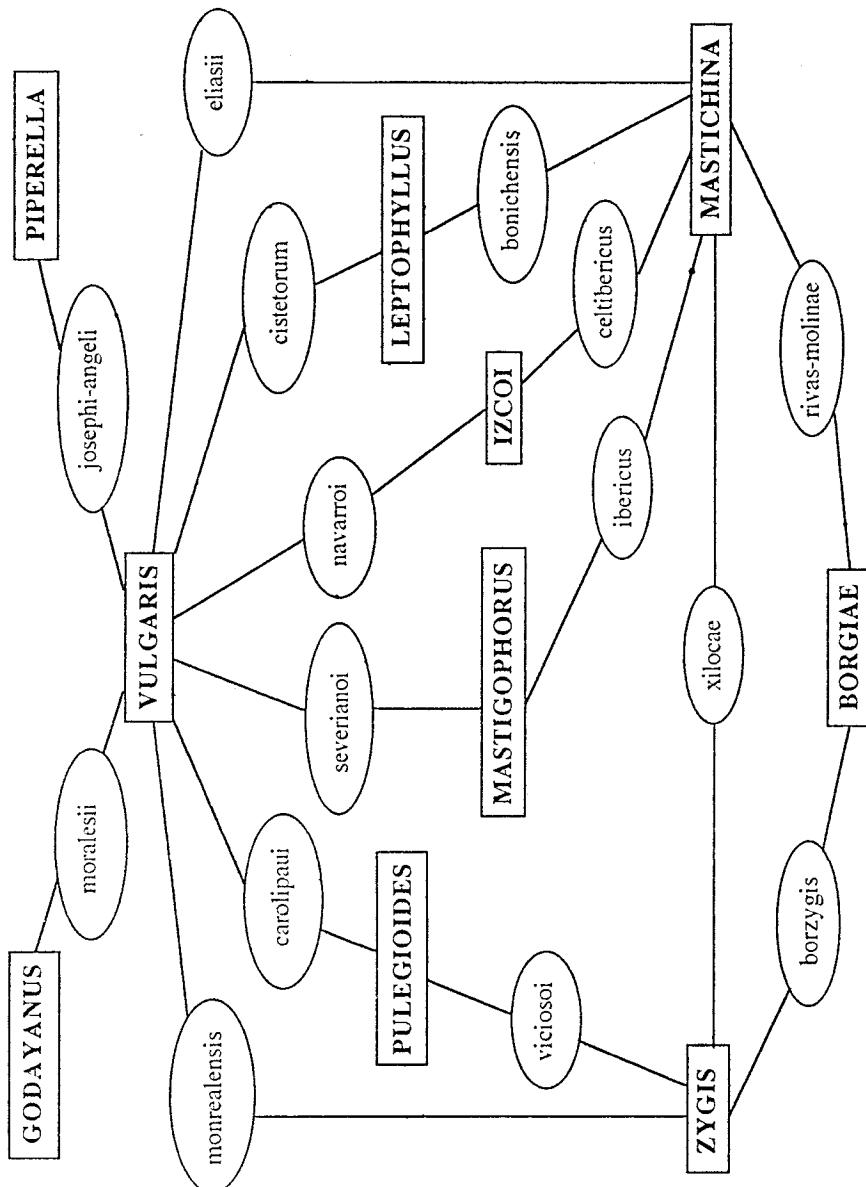
The very likely presence of *Thymus x bractichina* R. MORALES (*Th. bracteatus* x *Th. mastichina*) in the northern Sistema Ibérico would complete the proposed diagram. This is therefore a nothotaxon to look for in future.

Parental taxa:

1. *Thymus borgiae* RIVAS-MARTÍNEZ, MOLINA et NAVARRO, Opusc. Bot. Pharm. Complutensis 4: 118 (1988)
2. *Thymus godayanus* RIVAS-MARTÍNEZ, MOLINA et NAVARRO, Opusc. Bot. Pharm. Complutensis 4: 116 (1988)
≡ *Th. leptophyllus* subsp. *paui* R. MORALES, Anales Jard. Bot. Madrid 41 (1): 92 (1984)
3. *Thymus izcoi* RIVAS-MARTÍNEZ, MOLINA et NAVARRO, Opusc. Bot. Pharm. Complutensis 4: 114 (1988)
4. *Thymus leptophyllus* LANGE, Overs. Kongel. Danske Vidensk. Selsk. Forh. Medlemmers Arbeider 1893: 198 (1893)
5. *Thymus mastichina* (L.) L., Sp. Pl. ed. 2: 827 (1763)
6. *Thymus mastigophorus* LACAITA, Cavanillesia 3: 40 (1930)
7. *Thymus piperella* L., Syst. Nat. ed. 12, 2: 400 (1767)
8. *Thymus pulegioides* L., Sp. Pl.: 592 (1753)
9. *Thymus vulgaris* L., Sp. Pl.: 591 (1753)
10. *Thymus zygis* LOEFL. ex L., Sp. Pl.: 591 (1753)

Nothotaxa considered:

1. *Thymus x bonichensis* G. MATEO et M.B. CRESPO nothosp. nov.
(*Th. leptophyllus x Th. mastichina*)
2. *Thymus x borzygis* G. MATEO et M.B. CRESPO nothosp. nov.
(*Th. borgiae x Th. zygis*)
3. *Thymus x carolipaui* G. MATEO et M.B. CRESPO in G. Mateo, Cat. Florist. Prov. Teruel: 232 (1990)
(*Th. pulegioides x Th. vulgaris*)
4. *Thymus x celtibericus* PAU, Mem. Real Soc. Esp. Hist. Nat. 15: 71 (1929)
(*Th. izcoi x Th. mastichina*)
5. *Thymus x cistetorum* (G. MATEO et M.B. CRESPO) G. MATEO et M.B. CRESPO, Rivasgodaya 7: 134 (1993)
≡ *Th. x moralesii* nothosubsp. *cistetorum* G. MATEO et M.B. CRESPO,
Anales Jard. Bot. Madrid 49 (2): 288 (1992). (Basionym)
(*Th. leptophyllus x Th. vulgaris*)
6. *Thymus x eliasii* SENNEN et PAU in SENNEN, Bol. Soc. Ibérica Ci. Nat. 32:
79 (1933)
(*Th. mastichina x Th. vulgaris*)
7. *Thymus x josephi-angeli* MANSANET et AGUILILLA, Mediterranea, ser. biol., 8: 84 (1985)
(*Th. piperella x Th. vulgaris*)
8. *Thymus x monrealensis* PAU ex R. MORALES, Anales Jard. Bot. Madrid 41
(1): 93 (1984)
(*Th. vulgaris x Th. zygis*)
9. *Thymus x Moralesii* G. MATEO et M.B. CRESPO in G. MATEO, Cat. Florist. Prov. Teruel: 234 (1990)
(*Th. godayanus x Th. vulgaris*)
10. *Thymus x navarroi* G. MATEO et M.B. CRESPO, Rivasgodaya 7: 132
(1993) (*Th. izcoi x Th. vulgaris*)
11. *Thymus x rivasmolinae* G. MATEO et M.B. CRESPO, Rivasgodaya 7: 130
(19932)
(*Th. borgiae x Th. mastichina*)
12. *Thymus x severianoi* URIBE-ECHEBARRÍA, Estud. Mus. Cien. Nat. Alava 5:
67 (1990)
(*Th. mastigophorus x Th. vulgaris*)
13. *Thymus x viciosoi* (PAU) R. MORALES, Anales Jard. Bot. Madrid 43 (1): 41
(1986)
≡ *Th. bracteatus* f. *viciosoi* PAU, Bol. Soc. Aragonesa Ci. Nat. 15: 159
(1916). (Basionym)
(*Th. pulegioides x Th. zygis*)



Tab. 1.- Relationships among parental taxa (in capital letters) and nothotaxa (in small letters) from Sistema Ibérico, eastern Spain.

14. *Thymus x xilocae* G. MATEO et M.J.B. CRESPO, Anales Jard. Bot. Madrid 49 (2): 289 (1992)
(*Th. izcoi* x *Th. zygis*)

Resumen

Se realiza una revisión de los nototáxones del género *Thymus* L. (*Lamiaceae*) que habitan en el Sistema Ibérico (NE de España).

En este territorio se reconocen catorce especies híbridas, dos de las cuales se describen por primera vez: *Thymus x bonichensis*, nothosp. nov., y *Th. x borzygis*, nothosp. nov. Además, se recogen los protólogos de todas ellas y se aporta un cuadro donde se relacionan con sus parentales.

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