

A. de la Torre, M. Vicedo & M. A. Alonso

On the identity of *Thymus x martinezii* Pau ex Martínez (*Lamiaceae*), an endemic hybrid of the southeastern Iberian Peninsula

Abstract

De la Torre, A., Vicedo, M. & Alonso, M. A.: On the identity of *Thymus x martinezii* Pau ex Martínez (*Lamiaceae*), an endemic hybrid of the southeastern Iberian Peninsula. — Fl. Medit. 6: 23-29, 1996 — ISSN 1120-4052.

Thymus x martinezii Pau ex Martínez is interpreted as a hybrid derived from *Thymus vulgaris* L. and *Thymus moroderi* Pau ex Martínez.

Introduction

The facility for hybridization between taxa of *Thymus* is manifest, as is clearly shown by the quantity of hybrids described (cf. Font Quer 1920, Sennen 1933, Morales 1984, Mansanet & al. 1985, Morales 1986, Mateo & al. 1991, Sánchez-Gómez & al. 1992, Mateo & Crespo 1992, Mateo & Crespo 1993a, Mateo & Crespo 1993b, Blanca & al. 1993, Sáez & al. 1993).

One of these nothospecies is *Thymus x martinezii*, which was initially described as a species (Martínez 1934) and later interpreted as the hybrid between *Thymus vulgaris* and *Thymus zygis* subsp. *gracilis* (Morales 1986), although with certain reservations, inferred from the following observations made by the latter author: “Creemos que se trata de *Thymus moroderi* x *Thymus zygis*, aunque este último es raro actualmente en Alicante. No hemos visto esta planta en el campo”.

Collections made from sympatric populations of *Thymus vulgaris* and *Thymus moroderi* of abundant specimens with intermediate characteristics of these two types, and their consequent identification as *Thymus x martinezii*, suggested the possibility that *Thymus vulgaris* and *Thymus moroderi* are the parents of the hybrid, contrary to the earlier hypothesis put forward by Morales (1986).

Material and methods

In Appendix, we have revised specimens corresponding to *T. vulgaris*, *T. moroderi*, *T. zygis* subsp. *gracilis* and *T. x martinezii*, stored in the MA, MUB and ABH herbaria. In this work, we have used a series of morphological characteristics, from among which we

have selected the following because of their significance in differentiating between the above mentioned taxa:

- *Cilia at the base of the leaves*, assigning the value 100 to each specimen with all the leaves ciliate; 50 if some of them are ciliate, and 0 if none are ciliate.
- *Length of the leaves*, measured in mm.
- *Differentiated bracts*, always present (value 100) or always absent (value 0).
- *Length and width of the bracts*, measured in mm.
- *Coloured bracts*, in percentage (100 if all are coloured).
- *Length of the calyx*, measured in mm.
- *Length of the lower teeth of the calyx*, measured in mm.
- *Cilia in the upper teeth of the calyx*, assigning the value 100 when all the upper teeth of the calyces are ciliate; 50 when they do not all have these teeth; and 0 if cilia are absent.
- *Length of the corolla*, in mm.
- *Number of verticillasters per inflorescence*.

Results and discussion

The results of the observations and measurements of the revised material are shown in the Table 1.

In the light of this Table and Fig. 1, *Thymus x martinezii* presents intermediate characteristics between *T. vulgaris* and *T. moroderi*: the leaves generally ciliate at the base, the length of the leaves, the presence of small differentiated, and generally coloured bracts, the length of the calyx, the length of the lower teeth of the calyx, the cilia in the upper teeth of the calyx and the length of the corolla.

The most noticeable difference in its morphological characteristics is the size, form and colour of the bracts, which are, in a way, reminiscent of *Thymus funkii* Coss., a resemblance which may explain why Vicioso (1974) interpreted it as a variety of the Albacete endemic.

These data could also be interpreted as intermediate characteristics between *T. zygis* subsp. *gracilis* and *T. moroderi*, although a hybrid resulting from these would most likely have characteristics not present in *T. x martinezii*, such as the constant presence of cilia at the base of the leaves, a smaller size of leaves, bracts, calyces and corollas, or a larger number of verticillasters per inflorescence, all of which are characteristics of the typical morphology of *T. zygis* subsp. *gracilis*.

This problem would undoubtedly be completely clear if the hybrid between *T. moroderi* and *T. zygis* subsp. *gracilis* were found a difficult task, given that these taxa barely overlap in their areas of distribution.

Conclusion

The identity of *Thymus x martinezii* corresponds to a nothospecies between *T. vulgaris* and *T. moroderi*. The formal treatment is the following:

Thymus x martinezii Pau ex Martínez, *Mem. Real Soc. Esp. Hist. Nat.* 14: 467 (1934),
pro species

Type: Sierra de Sancho, 222 m, prope Lucentum.

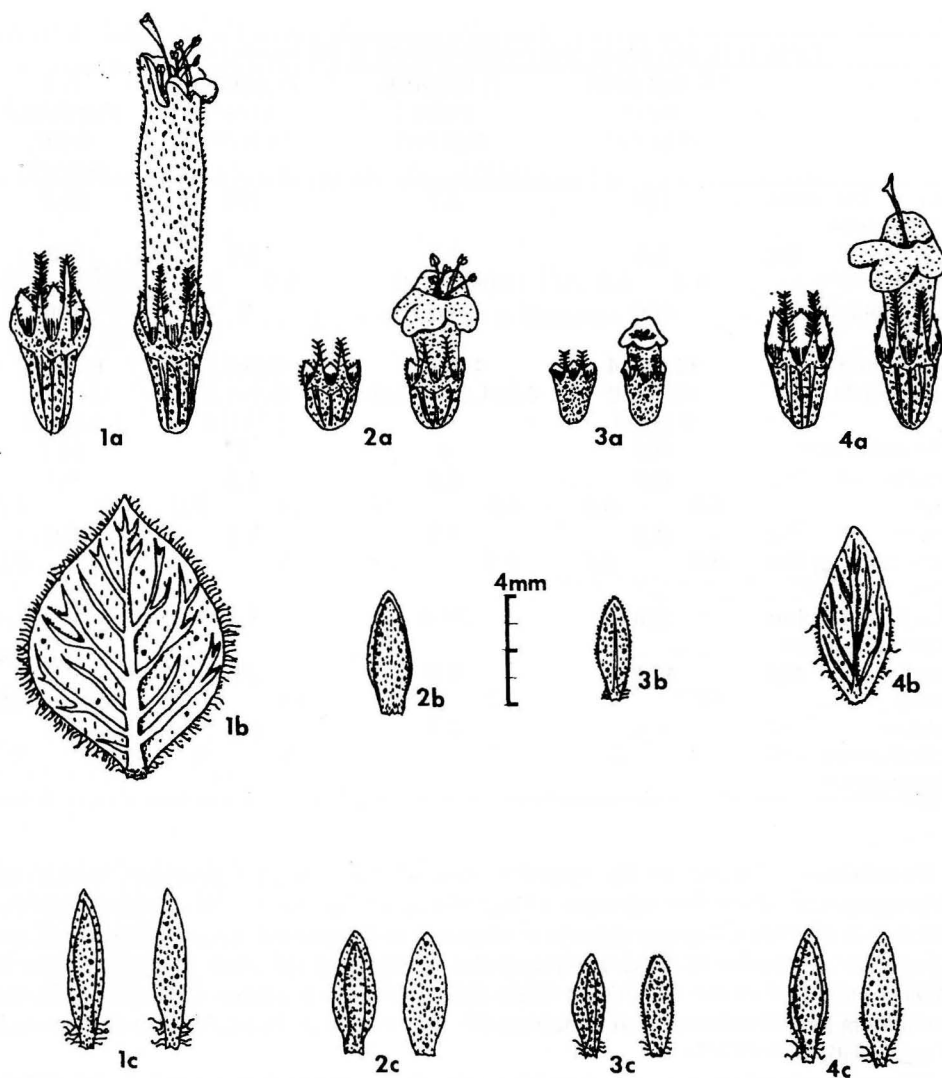


Fig. 1. a, calyx and corolla; b, bract; c, leaf. 1, *Thymus moroderi* Pau ex Martínez. 2, *Thymus vulgaris* L. 3, *Thymus zygis* Loebl. ex L. subsp. *gracilis* (Boiss) R. Morales. 4, *Thymus x martinezii* Pau ex Martínez

Typification: LECTOTYPUS: MA 105676, an example of the upper right-hand side, herein specified and labelled on the specimen by F. Alcaraz Ariza (21-7-85).

Thymus moroderi Pau ex Martínez x *Thymus vulgaris* L.

= *Thymus capitatus* Lag., *Gene. Sp. Nov.*: 18 (1816), *non* (L.) Hoffmanns & Link

= *Thymus x carrionii* Sáez & Sánchez Gómez in Sáez, Sánchez Gómez & Morales, *Anales Jard. Bot. Madrid*, 51 (1): 157 (1993).

Table 1. Observations and measurements of the revised material

	<i>T. moroderi</i> mean max min		<i>T. vulgaris</i> mean max min		<i>T. gracilis</i> mean max min		<i>T. x martinezii</i> mean max min	
Cilia in the base of the leaves	100		8.7		100		86.7	
Length of the leaves	5.8 9.0 4.0		4.3 6.0 2.0		3.9 5.0 3.0		4.6 7.0 3.0	
Differentiated bracts	100		0		0		100	
Length and width of the bracts	10.8x6.4 15.0x9.0 9.0x5.0		4.3x0.9 6.0x1.5 2.0x0.5		3.9x0.9 5.0x1.2 3.0x0.4		6.3x2.0 8.0x2.8 4.5x0.8	
Coloured bracts	100		0		0		86.7	
Length of the calyx	6.5 8.0 5.5		3.5 4.5 2.0		2.8 4.0 2.0		5.1 6.5 4.0	
Length of the lower teeth of the calyx	3.3 4.0 2.5		1.8 2.0 1.0		1.2 1.8 1.0		2.8 3.5 2.0	
Cilia in the upper teeth of the calyx	100		11.6		1.5		100	
Length of the corolla	13.8 17.0 9.0		4.9 7.0 2.5		2.2 3.0 1.5		6.0 9.0 4.0	
Number of verticillasters per inflorescence	2.4 2 3		3.1 2 5		5.9 3 9		3.0 2 5	

Distribution: endemic to the southern part of the Alicante province, within the biogeographical Alicantino subsector of the Murciano-Almeriense chorological province (Alcaraz & al. 1991). *Thymus vulgaris* is abundant in abandoned pre-cultivated areas, and appears as a colonist in these environments; nearby, not far from the populations of *Thymus moroderi* of the association *Stipo-Sideritidetum leucanthae* O. Bolòs 1957, the intermittent hybrid is found, also preferring this type of changed environment in the course of regeneration.

Observations: when checking through some of the material deposited in the Rigual Herbarium, under MA and ABH, specimens of this hybrid were found, labelled by Rigual himself as "*Thymus x martinezii*" with the indication: "*Thymus vulgaris* x *Thymus longiflorus* var. *ciliatus*" (*Thymus moroderi*).

References

- Alcaraz, F., Sánchez-Gómez, P. & De la Torre, A. 1991: Biogeografía de la provincia Murciano-Almeriense hasta el nivel de subsector. — *Rivasgodaya* **6**: 77-100.
- Blanca, G., Cueto, M., Gutiérrez, L. & Martínez, M. J. 1993: Two hybrids of *Thymus hyemalis* Lange (*Labiatae*) from Southeastern Spain. — *Folia. Geobot. Phytotaxon.* **28**: 135-140.
- Font Quer, P. 1920: Contribució al coneixement de la flora catalana occidental. — *Treb. Mus. Ciènc. Nat. Barcelona* 5, sèr. bot., **3**: 193-233.

- Mansanet, J., Aguilera, A. & Mateu, I. 1985: Dos especies híbridas nuevas: *Thymus x josephi-angeli* J. Mansanet & A. Aguilera y *Helianthemum x carmen-joanae* J. Mansanet & I. Mateu. — *Mediterranea Ser. Biol.* **8**: 83-88.
- Martínez, M. 1934. Aportaciones a la flora española. Plantas de Alicante. — *Mem. Real Soc. Esp. Hist. Nat.* **14**: 405-480.
- Mateo, G. & Crespo, M. B. 1992: Sobre los híbridos de *Thymus leptophyllus* Lange (*Lamiaceae*). — *Anales Jard. Bot. Madrid* **49**(2): 288-289.
- & — 1993a: Consideraciones sobre algunos tomillos ibéricos y sus híbridos. — *Rivasgodaya* **7**: 127-135.
- & — 1993b: New data on nothotaxa of *Thymus* L. in northeastern Spain. — *Thaiszia, Kosice* **3**: 3-11.
- , — & Laguna, E. 1991: Dos nuevos tomillos híbridos valencianos. — *Anales Jard. Bot. Madrid* **49**(1): 140-143.
- Morales, R. 1984: Novedades taxonómicas y nomenclaturales en especies ibéricas del género *Thymus* L. — *Anales Jard. Bot. Madrid* **41**(1): 91-95.
- 1986. Taxonomía de los géneros *Thymus* (excluida la sección *Serpyllum*) y *Thymbra* en la Península Ibérica. — *Ruizia* **3**: 1-324.
- Sáez, F., Sánchez-Gómez, P. & Morales, R.. 1993: Precisiones corológicas y nuevos híbridos interespecíficos del género *Thymus* L. (*Labiatae*) en el sudeste ibérico. — *Anales Jard. Bot. Madrid* **51**(1): 157-159.
- Sánchez-Gómez, P., Alcaraz, F. & Sáez, F. 1992: *Thymus x monrealensis* Pau ex R. Morales nothosubsp. *garcia-vallejoi* Sánchez Gómez, Alcaraz & Sáez, nothosubsp. nov. — *Anales Jard. Bot. Madrid* **49**(2): 289-290.
- Vicioso, C. 1974. Contribución al conocimiento de los tomillos españoles, ed. por J. Ruiz del Castillo. — *Anales Inst. Nac. Invest. Agrar. ser. Recursos Nat.* **1**: 11-63.

Appendix: studied specimens

Thymus vulgaris L., *Sp. Pl.*: 591 (1753)

SPAIN:

- ALBACETE: Almansa, XJ6295, 4 May 1980, M. Honrubia & F. Alcaraz, MUB 3303. Tabaqueros, 13 May 1990, M. D. Sánchez López, MUB 36713. Tabaqueros, 17 Mar 1990, M. D. Sánchez López, MUB 36690.
- ALICANTE: Muchamiel, YH1651, 250 m, 19 Jun 1991, M. B. Crespo, ABH 373. Alicante, 20 Oct 1992, E. Camuñas, ABH 6733. Torremanzanas, YH2377, 850 m, 27 Oct 1991, L. Serra, ABH 2542. Benissa, YH5783, 350 m, 26 May 1990, E. Calvo, L. Lledó & L. Santamans, ABH 464. San Isidro de Albatera, XH8826, 20 m, 15 Feb 1992, A. de la Torre & M. A. Alonso, ABH 1904. Benidorm, YH4772, 350 m, 2 Oct 1991, J. L. Solanas, ABH 4573. Alfaz del Pi, YH5571, 370 m, 29 Mar 1992, J. L. Solanas, ABH 4902. Denia, BC5499, 200 m, 15 Apr 1992, A. Barber, ABH 1999. Benidorm, 20 Mar 1992, E. Guijarro, ABH 4320. Callosa de Segura, XH8420, 80 m, 26 Jun 1992, J. Baeza, A. de la Torre & J. C. Cristóbal, ABH 1393. Villajoyosa, YH3664, 50 m, J. L. Solanas, ABH 5462. Tibi, 14 Apr 1991, P. Antón, ABH 4299. Ibi, 23 May 1993, C. Calabuig, ABH 7263. Alcoy, 24 Jul 1992, C. Calabuig, ABH 7262. Petrer, XH9761, 690 m, 4 Apr 1993, A. Juan, ABH 5804. Petrer, XH9760, 800 m, 1 Jun 1992, A. Juan, ABH 5774. Petrer, XH9760, 750 m, 16 May 1993, A. Juan, ABH 5828. Alcoy, YH28, 670 m, 18 Jan 1992, L. Serra, ABH 2521. Petrer, XH9859, 880 m, 6 Feb 1992, A. Juan, ABH 5798. Finestrat, YH4476, 1380 m, 21 Feb 1992, J. C. Cristóbal, ABH 3971. Xabia, Granadella, BC5591, 150 m, 15 Jun 1992, A. Barber, ABH 4196. Benitatxell, BC5388, 150 m, 15 Jul 1992, A. Barber, ABH 2198. Xabia, BC5599, 150 m, 15 Jun 1992, A. Barber, ABH 2197. Callosa de Ensarria, YH5583, 800 m, 1 Nov 1991, J. L. Solanas, ABH 4551. Pinoso, 15 Apr 1992, V. Serrato, ABH 1652. Alcoy, 1000 m, 25 Dec 1990, S. Maciá Bonet, ABH 4314. Maigmo, YH0263, 900 m, 21 Jul 1985, A. de la Torre, MUB 20024.

Villajoyosa, YH37, 6 Jul 1985, F. Alcaraz, MUB 14322. Crevillente, 28 Nov 1986, F. Alcaraz & A. de la Torre, MUB 20735. Sierra de Aitana, 1300 m, 22 Jul 1989, F. Alcaraz & A. de la Torre, MUB 29854. Albaterra, XH8335, 270 m, 14 May 1982, F. Alcaraz, MUB 8251.

CASTELLON: Benafíg, YK3663, 975 m, 24 May 1987, C. Fabregat, ABH 3089.

MURCIA: Jumilla, 13 Apr 1991, A. I. Jiménez, MUB 39579. Moratalla, WH9734, 1000 m, 7 Feb 1984, C. Selma, MUB 6729. Bullas, XH1202, 900 m, 8 May 1981, F. Alcaraz, MUB 9302. Fortuna, XH5737, 1100 m, 18 Jul 1979, F. Alcaraz, MUB 1420. Bullas, XH1509, 660 m, 8 May 1981, F. Alcaraz, MUB 9301. Ojós, XH4421, 2 Apr 1985, Ríos & Alcaraz, MUB 20734. Sierra del Cantón, XH73, 23 May 1985, F. Alcaraz, MUB 19016. Bullas, Fuente del Mulo, XH1409, 700 m, 18 Apr 1981, J. M. Egea, MUB 9154. El Reventón, WH9421, 1300 m, 15 May 1982, C. Selma, MUB 11418. Llanos de la Carrasca, XH0933, 400 m, 19 May 1984, C. Selma, MUB 11419. Sierra de la Puerta, XH0829, 500 m, 1 May 1982, C. Selma, MUB 11420. Sierra de El Buitre, WH9524, 1150 m, 7 May 1983, C. Selma, MUB 11421. Carretera de la Murta, XH0236, 550 m, 5 May 1984, C. Selma, MUB 12375. Campo de San Juan, WH7926, 110 m, 28 May 1983, C. Selma, MUB 12376. Sierra de Moratalla, WH6511, 1500 m, 22 May 1982, C. Selma, MUB 12377. Sierra de Ricote, XH4324, 3 Apr 1983, P. del Olmo, MUB 13452. Abanilla, S^a del Cantón, XH7539, 700 m, 24 Jun 1982, F. Alcaraz, MUB 8253. Jumilla, Cerro de la Rosa, XH5654, 540 m, 16 Apr 1981, F. Alcaraz, MUB 4839. Cieza, Puerto de la Mala Mujer, XH3046, 440 m, 22 May 1982, F. Alcaraz, MUB 8252. Abarán, XH4331, 3 May 1982, F. Alcaraz, MUB 8255. Abanilla, XH7734, 620 m, 9 May 1982, F. Alcaraz, MUB 8279. Yecla, Montes del Portillo, XH7080, 720 m, 22 May 1982, F. Alcaraz, MUB 8278. Yecla, 2 Mar 1991, Ana, Flora & M^a José, MUB 39837. Jumilla, 7 May 1991, A. I. Jiménez Piqueras, MUB 39580. Caravaca, WH8517, 100 m, 24 Apr 1982, C. Selma, MUB 22252. Caravaca, WH9817, 660 m, 15 May 1982, C. Selma, MUB 22254. Caravaca, Mojantes, WH8308, 1000 m, 22 May 1982, C. Selma, MUB 22255. Proximidades de Moratalla, WH9426, 1000 m, 14 May 1983, C. Selma, MUB 22256. Moratalla, WH8831, 1000 m, 21 May 1983, C. Selma, MUB 22257. Caravaca, WH7506, 21 Apr 1984, C. Selma, MUB 22258. Calasparras, 5 May 1984, C. Selma, MUB 22259.

VALENCIA: Náquera, YJ2386, 80 m, 4 Mar 1987, M. B. Crespo, ABH 2907. Játiva, 22 Mar 1988, 22 Mar 1988, F. Alcaraz & A. de la Torre, MUB 23834.

Thymus moroderi Pau ex Martínez, *Mem. Real Soc. Esp. Hist. Nat.* 14(5): 465 (1934)

SPAIN:

ALICANTE: Alicante, YH26, 200 m, 13 May 1993, L. Serra, ABH 5275. Elche, XH0041, 100 m, 27 May 1991, M. D. Lledó & M. B. Crespo, ABH 3878. Petrer, XH9962, 740 m, 16 May 1992, A. Juan, ABH 1671. Novelda, XH95, 360 m, 13 Jun 1993, L. Serra, ABH 5299. Alicante, 1 May 1991, R. Leal, ABH 4305. Alicante, 18 May 1991, B. León & D. Cartagena, ABH 1632. Orxeta, YH3973, 350 m 6 Jun 1992, F. Lozano, ABH 2411. Alicante, 25 May 1992 F. Lozano ABH 1488. Petrer, XH9961, 960 m, 30 Jun 1993, A. Juan, ABH 5733. Albaterra, XH8236, 460 m, 30 May 1993, L. Serra, ABH 5284. San Miguel de Salinas, 15 May 1992, J. L. Solanas, A. de la Torre & M. B. Crespo, ABH 1330.

Thymus zygis Loefl. ex L. subsp. *gracilis* (Boiss) R. Morales, *Anales Jard. Bot. Madrid*, 41(1): 93 (1984).

SPAIN:

ALBACETE: Férez, WH9752, 460 m, 3 Jul 1988, P. Sánchez, MUB 26152.

ALMERIA: Rambla del Saliente, WG7254, 21 Jul 1986, A. García Gea, MUB 19662. S^a Saliente, WG7154, 21 Jul 1986, A. García Gea, MUB 19663. S^a Saliente, WG7154, 21 Jul 1986, A. García Gea, MUB 19664. Velez Rubio, WG8365, 8 Aug 1986, A. García Gea, MUB 19665. S^a de las Estancias, WG8261, 8 Aug 1986, A. García Gea, MUB 19666. S^a de las Estancias,

WG8261, 8 Aug 1986, A. García Gea, MUB 19667. S^a Saliente, WG7154, 21 Jul 1986, A. García Gea, MUB 19668.

MURCIA: Santomera, XH6716, 460 m, 27 Jun 1980, F. Alcaraz, MUB 2307. Santomera, XH6718, 80 m, 14 Apr 1979, F. Alcaraz, MUB 2664. Murcia, XG6395, 300 m, 30 Apr 1979, F. Alcaraz, MUB 2711. Lorca, XH07, 450 m, 19 Apr 1981, Miñano & Periago, MUB 4853. Ricote, XH3523, 400 m. P. del Olmo & M. Hurtado, MUB 5325. Lorca, XG26, 20 May 1985, A. Robledo & M. Garre, MUB 12746. Cresta del Gallo, XH64, 5 Mar 1985, M. Garre, MUB 12852. Ricote, XH3925, 22 May 1983, P. del Olmo, MUB 13339. Ulea, XH49, 18 May 1985, S. Rios, MUB 13819. S^a Almenara, XG25, 23 Apr 1983, F. Alcaraz, MUB 14281. Espinardo, XH60, 22 Apr 1985, D. Ferrer, MUB 16009. Topares, 14 Jun 1987, F. Alcaraz, MUB 22519. Sin datos, MUB 25482. S^a de Almenara, 16 Jul 1991, C. Obón & D. Rivera, MUB 35482.

Thymus x martinezii Pau ex Martínez, *Mem. Real Soc. Esp. Hist. Nat.* 14: 467 (1934), *pro species* SPAIN:

ALICANTE: Elche, 17-III-73, Fernández Casas, MA 421152. San Vicente del Raspeig, 15 Jun 1970, A. Rigual, MA 375623. Alicante, 30 May 1976, A. Rigual, MA 375668. Relleu, 17 May 1957, A. Rigual, MA 375684. Crevillente, 7 May 1963, A. Rigual, MA 375679. Campello, 17 May 1956, A. Rigual, MA 375705. Agost, 17 May 1959, A. Rigual, MA 375702. Monforte, 11 May 1959, A. Rigual, MA 375678. San Vicente del Raspeig, 17 Jun 1962, A. Rigual, MA 375703. Elche, YH0544, 200 m, 9 May 1993, A. de la Torre & S. de la Torre, ABH 10005. Sierra de Sancho, prope Lucentum, 222 m, 5 May 1933, M. Martínez, MA 158823 (*Isotypus*). Sierra de Sancho, prope Lucentum, 222 m, 5 May 1933, M. Martínez, MA 105676 (*Lectotypus*).

Address of the authors:

A. de la Torre, M. Vicedo & M. A. Alonso, Departamento de Ciencias Ambientales y Recursos Naturales (Botánica), Universidad de Alicante, Apdo. 99, E-03080 Alicante, Spain.