Ourania Georgiou

Taxonomic notes on *Anthemis peregrina (Asteraceae)*

Abstract

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Some notes are presented on the taxonomy and distribution of *A. peregrina* L. This taxon, which had been united with *A. tomentosa* L., is a separate species with two distinct subspecies, subsp. *peregrina* and subsp. *heracleotica*. The earlier lectotype designation for *A. peregrina* is explained.

Introduction

Anthemis peregrina L. belongs to *Anthemis* sect. *Anthemis* and within that section to the *Anthemis tomentosa* group (Yavin 1972), which was the object of the author's Ph. D. Thesis (Georgiou 1990). This species had been so far identified with its related species *A. tomentosa* L. Thus, specimens belonging to *A. peregrina* L. have been reported as *A. tomentosa* L. (Arcangeli 1882, Ostermeyer 1887, Halácsy 1902, Hayek 1931 etc.) or inversely (Boissier 1875, Halácsy, op. cit., Stojanoff 1939, Rechinger 1943, 1961 etc.). Recent authors (Grierson & Javin 1975, Fernandes 1976, 1983, Halsam & al. 1977, Pignatti 1982 etc.) referred *A. peregrina* L. as a synonym of *A. tomentosa* L., with a geographical distribution stretching from the coast of W. Turkey up to S. Italy, Sicily and Malta. After the study of abundant herbarium material collected from all the above mentioned areas, and after cultivation of living material we concluded that *A. peregrina* L. is a separate species, which comprises two morphologically and geographically distinct subspecies: subsp. *peregrina* and subsp. *heracleotica*. After this clarification, the distribution of *A. tomentosa* L. is restricted mainly to the coastline of W. Turkey, the Aegean area and the coast of E. Greece (Fig. 1).

Anthemis peregrina L. Syst. Nat. ed 10: 1233 May-Jun 1759 — **Lectotype** (Georgiou 1990: 89): Kaehler s.n., Herb. Linn. No 1016.11 (LINN microfiche!).

Anthemis peregrina was described by Linnaeus in Systema Naturae (1759) with the following protologue: *«ANTHEMIS [peregrina] fol. pinnatis: foliolis subtrifidis caule*

erectiusculo subincano, receptaculis subconvexis». The locality of the origin of the plant is not referred. At the Linnaean Herbarium, (observations on microfiche), four different specimens are referred to *A. peregrina,* all having been identified by Linnaeus himself. From these specimens only two agree with the Linnaean description. The first is specimen No 1016-10, which has the abbreviation HU and is a plant cultivated at the Uppsala Botanical Garden. It cannot be considered suitable for «lectotypus», because the collection locality is unknown. The second specimen is No 1016-11, which has the abbreviation Kh (=Kaehler) and belongs to Kaehler's collection from Italy. According to the author's opinion, and that of Fernandes (1983), this specimen agrees with the Linnaean description, as well as to descriptions of *A. peregrina* given by several other authors (De Candolle 1837, Sibthorp & Smith 1837, Gussone 1842 etc.). For this reason we considered this specimen as «lectotype» of *A. peregrina* L. Concerning the other specimens of the Linnaean Herbarium, with the name «*A. peregrina*», we note the following: Specimen No 1016-7 is a plant which does not agree to the description given by Linnaeus. Furthermore, according to Fernandes (op. cit.), this plant should have originated from C. Asia, but according to Dr. Jarvis (pers. commun.) it must have been collected by Hasselquist from the Near East. In any case *A. peregrina* L. is not distributed in C. Asia or the Near East. Specimen No 1016-9, does not agree with the Linnaean description and had been collected from the Verona area, where *A. peregrina* does not occur. The specimen No 1016-8, which is pinned with the above mentioned sheets, had been sent to Linnaeus by Loefling (Fernandes, op.cit.) and belongs to the species *Chamaemelum mixtum* L.

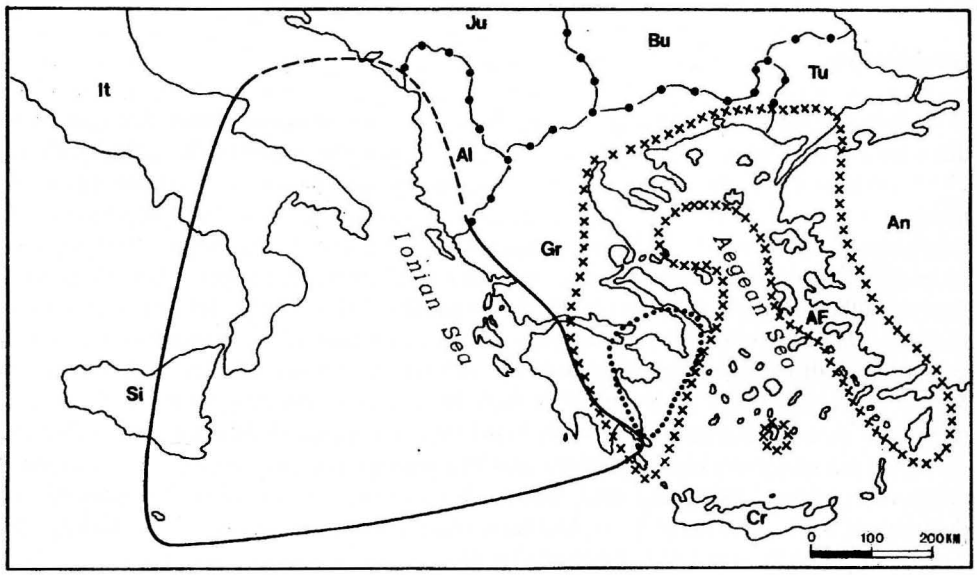

Fig. 1. Geographical distribution of *Anthemis peregrina* L. subsp. *peregrina* (___), *A. peregrina* L. subsp. *heracleotica* (Boiss. & Heldr.) Georgiou (.....) and *A. tomentosa* L. (xxx).

A. peregrina L. and especially its typical subspecies is very closely related to *A. tomentosa* L. Plants belonging to *A. peregrina* grown in sandy soil present similarities in

their «habitus» with *A. tomentosa* L., in that they have a denser indumentum and more succulent leaves. For this reason there was the above mentioned confusion by many authors between these two taxa. This strong variability, which is observed in *A. peregrina*, is due to ecological adaptation and disappears in cultivation under similar conditions. On the contrary, this variability is not shown by *A. tomentosa*.

The morphological differences between *A. peregrina* L. and *A. tomentosa* L. are given in Table 1., and the morphological differences between the two subspecies of *A. peregrina* are given in Table 2.

Table 1. Morphological differences between *A. peregrina* and *A. tomentosa*.

A. peregrina	***A. tomentosa***
Indumentum silky adpressed.	Indumentum lanate-tomentose.
Leaves longly petiolate; petioles usually without lobes; segments deeply divided into 3-5 (or more) oblong, acute lobes.	Leaves with shorter, lobed petioles; segments entire to shallowly divided into few obovate, obtuse lobes.
Peduncles usually strongly incurved when in fruit.	Peduncles erect or slightly arcuate when in fruit.
Involucral bracts compact with wide connecting surface.	Involucral bracts loosely arranged.
Outer receptacular scales short, hyaline, with irregular margins; inner curved to ascending, without brown midvein or with obscure brown midvein.	Outer receptacular scales long, acute, with brown midvein; inner radially arranged on the receptacle with prominent brown midvein.

A. peregrina L. subsp. ***peregrina*** ≡ *A. peregrina* var. *typica* Fiori, in Fiori & Paol., Fl. Anal. Ital. 3: 254. 1903. ≡ *A. tomentosa* L. subsp. *peregrina* (L.) Hayek, Prodr. Fl. Penins. Balc. 2: 630. 1931, p.p. ≡ *A. tomentosa* subsp. *tomentosa* sensu Fernandes, Bot. Jour. Linn. Soc. 70:12. 1975, p.p. — **Lectotype** (see *A. peregrina*).

A. peregrina subsp. *peregrina* is an amphi-Adriatic taxon, which is distributed on the coast of W. Greece, S. Peloponnisos and the Ionian Islands and extends up to S. Italy, Sicily and Malta and probably to the coast of former Yugoslavia (Fig. 1). This distribution demostrates the known phytogeographical relationships between W. Greece, S. Italy and Sicily. This taxon always grows on sandy, pebbly or rocky coastal places.

A. peregrina subsp. ***heracleotica*** (Boiss. & Heldr.) Georgiou **comb. nov.** ≡ *A. peregrina* var. *heracleotica* Boiss. & Heldr., Diagn. Pl. Or. Nov. 3: 21. 1856 ≡ *A. tomentosa* f. *heracleotica* (Boiss. & Heldr.) Hayek, Repert. Spec. Nov. Regni Veg. Beih. 30 (2): 630. 1931 ≡ *A. tomentosa* subsp. *heracleotica* (Boiss. & Heldr.) R. Fernandes, Bot.

Linn. J. Soc. 70:12. 1975. — **Type:** «In arvis pr. Heracleon Atticae» 6 May 1856, *Heldreich* Herb. Graec. Norm. No. 502 (G!; iso- M!, W!)

= *A. guicciardii* Heldr. & Sartori in Heldr. Herb. Graec. Norm. No. 406. 1854 ≡ *A. peregrina* var. *guicciardii* (Heldr. & Sartori) Boiss., Fl. Or. 3: 308. 1875. ≡ *A. peregrina* subsp. *guicciardii* (Heldr. & Sartori) Zangheri [Fl. Ital.: 709. 1976, comb. inval.] ex Georgiou, Biosust. Mel. Omadas *Anthemis tomentosa*: 104. 1990. — **Syntypi:** «In campis planitiei Atticae superioris pr. Heracleon», 30 Apr. 1854, *Heldreich* Herb. Graec. Norm. No. 406 (G!, M!, W!). «In campis Atticae prope Eumorphoklissa», 30 Apr. 1854, *Heldreich* Pl. Exs. No. 2238 (G!)

The name «*A. guicciardii* Heldr. & Sartori» was given for the first time to the specimens of Heldreich, Herb. Graec. Norm.: No. 406, which were collected from Iraklio (Heracleo) in Attiki, and also to the specimens of Heldreich Pl. Exs.: No. 2238, which were collected from Eumorphoklissa (Attiki). On the labels of both these specimens, produced by lithographic duplication of the handwritten original (i.e., by «indelible autograph» in the sense of the *International code of botanical nomenclature*, Art. 30. 1-2), the following brief description appears: «*A. peregrina var. foliis tenuius dissectis*». Two years later Boissier (1856) independetly described *A. peregrina* var. *heracleotica* Boiss. & Heldr., based on the specimen of Heldreich Herb. Graec. Norm.: No. 502, which had also been collected from Iraklio. It is a mature plant, which belongs to the same taxon as the two above-mentioned specimens. Although the name *A. guicciardii* has priority at the rank of species, at infraspecific ranks (varietas, forma, subspecies) the epithet *heracleotica* must prevail for reasons of priority.

Table 2. Morphological differences between *A. peregrina* subsp. *peregrina* and subsp. *heracleotica*.

subsp. *peregrina*	**subsp. *heracleotica***
Involucral bracts with pale membranous margins.	Involucral bracts with brown, membranous margins.
Tubes of tubular florets broad to swollen.	Tubes of tubular florets narrow.
Teeth of tubular florets with short appendages.	Teeth of tubular florets with long appendages.
Achenes with obscure to almost smooth ribs; auricle relatively short.	Achenes with prominent ribs; auricle relatively longer and wider.

A. peregrina subsp. *heracleotica* is an endemic taxon of Greece, which is distributed in S.W. Evvia, Attiki, the Argosaronic Islands and E. Peloponnisos. It grows mainly on coastal or continental calcareous rocks. Specimens from Puglia (Italy) reported as *A. peregrina* var. *guicciardii* (Fiori 1927) or as *A. peregrina* subsp. *guicciardii* (Zangheri 1976) belong to *A. peregrina* subsp. *peregrina*.

A. peregrina subsp. *heracleotica* had been confused with *A. werneri*. Stoj. & Acht. (=*A. flexicaulis* Rech. fil.), which is distributed in the Aegean region (Georgiou 1991), and with *A. rigida* Heldr. subsp. *liguliflora* (Halácsy) Greuter.

Specimens from the islands of Skiros (Tuntas s. n. ATH!, Rech. fil. 772, LD!), and Limnos (Rech. fil. 1341, LD!), which were reported as «*A. heracleotica* (Boiss. & Heldr.) Stoj. & Acht.» (Rechinger 1943), as well as specimens from Santorini Island, reported as «*A. guicciardii* Heldr. & Sartori» (Rechinger 1943, Hansen 1971), belong to *A. werneri.* This taxon resembles subsp. *heracleotica* by its small, compact, ovoid heads, its involucral bracts, having brown scarius margins and by its sparse indumentum. However it differs by its fertile ligulate florets and its spongy, swollen tubes of the tubular florets.

Specimens from Karpathos Island (Pichler 372, W!, G!), reported as «*A. heracleotica* (Boiss. & Heldr.) Stoj. & Acht.» (Rechinger 1943) belong to *A. rigida* subsp. *liguliflora* (= *A. pusilla* Greuter subsp. *liguliflora* (Halácsy) Greuter & Rech. fil.) (Greuter & al. 1983). This taxon resembles subsp. *heracleotica* in that it has small, compact heads, curved peduncles and sterile ligulate florets. It differs by its achenes that are obscurely ribbed to smooth with a short auricle, its short receptacle, its short peduncles, and the different shape of the leaves.

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References

Arcangeli, G. 1882: Compendio della Flora italiana. ed. **1**: 677-681. — Torino.

Boissier, E. 1856: Diagnoses Plantarum Orientalium Novarum Ser. **2**. **3**: 21-22. — Lipsiae & Parisiis.

— 1875: Flora Orientalis **3**: 308-309. — Genevae & Basiliae, Lugduni.

Candolle, A.-P., de 1837: Prodromus systematis naturalis regni vegetabilis, **6**. — Paris.

Fernandes, R. B. 1976: *Anthemis* L. — In: Tutin, T. G., Heywood, V. H., Burges, N. A., Moore, D. M., Valentine, D. H., Walters, S. M. & Webb, D. A. (ed.), Flora Europaea **4:** 145-159, Cambridge University Press.

— 1983: Identification, typification, affinités et distibution géographique de quelques taxa européens du genre *Anthemis*. — Revista Biol. **12**: 385-424.

Fiori, A. 1927: Nuova flora analitica d'Italia **2**: 639-649. — Firenze.

Georgiou, O. 1990: Biosystematic study of *Anthemis tomentosa* group *(Asteraceae)* in Greece. — PhD. Thesis 1-299. Patras.

— 1991: *Anthemis werneri (Asteraceae),* an endemic species of the Aegean islands (Greece). — Bot. Chron. **10**: 741-747.

Greuter, W., Pleger, R. & Raus, T. 1983: The vascular flora of Karpathos island group (Dodecanesos, Greece). A preliminary checklist. — Willdenowia **13(1):** 43-78.

Grierson, A. J. C. & Yavin, Z. 1975: *Anthemis.* — In: Davis, P. H. (ed.), Flora of Turkey and the East Aegean Islands. **5**: 174-221. — Edinburgh.

Gussone, G. 1842: Florae Siculae Synopsis: 492. — Neapoli.

Halácsy, E. von 1902: Conspectus florae graecae **2:** 51-64. — Lipsiae.

Halsam, S. M., Sell, P. D. & Wolseley, P. A. 1977: A flora of the Maltese Islands: 327-329. — Malta.

Hansen, A. 1971: Flora der Inselgruppe Santorin. — Candollea **26(1):** 109-163.

Hayek, A. von 1931: Prodromus florae peninsulae Balcanicae. *Anthemis* L. — Repert. Spec. Nov. Regni Veg. Beih. **30(2):** 618-630.
Linnaeus, C. 1759: Systema Naturae ed. **10**, **2:** 1223. — Stockholm.
Ostermeyer, F. 1887: Beitrag zur Flora der Jonischen Inseln Corfu, Sta. Maura, Zante und Cerigo. — Verhandl. Zool. Bot. Ges. Wien **37:** 651-672.
Pignatti, S. 1982: Flora d'Italia **3:** 66-75. — Bologna.
Rechinger, K. H. 1943: Flora Aegaea. — Akad. Wiss. Wien, Math. - Naturwiss. Kl., Denkschr. **105(1):** 622-628.
— 1961: Die Flora von Euboea. — Bot. Jahrb. Syst. **80(4):** 383-465.
Sibthorp, J. & Smith, J. E. 1837: Flora Graeca. **9:** tab. 883. — London.
Stojanoff, N. 1939: *Anthemis*. — In: Rechinger, K. H., Zur Flora von Ostmazedonien und Westthrazien. — Bot. Jahrb. Syst. **69(4):** 520.
Yavin, Z. 1972: New taxa of *Anthemis* from the Mediterranean and SW Asia. — Israel J. Bot. **21**: 168-178.
Zangheri, P. 1976: Flora Italica **1**: 706-709. — Padova.

Address of the author:
Dr. O. Georgiou, Botanical Institute, University of Patras, GR-260 10, Patras, Greece.