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Quercus trojana subsp. *yaltirikii (Fagaceae),* a new subspecies from southern Turkey

Abstract

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Geographic distribution and infraspecific variation of the E Mediterranean *Quercus trojana* is discussed. *Q. trojana* subsp. *yaltirikii* is described from the region of Içel and Antalya at the southeastern margin of the species' range as a subspecies new to science, characterized by densely stellate-hairy leaves and twigs.

Key words: Macedonian oak, infraspecific variation, indumentum, Mediterranean region.

Quercus trojana Webb is one of the most characteristic oak species of the E Mediterranean region. It is typically a small tree and easily identified by its semi-evergreen, small, subcoriaceous, elongated and regularly sinuate-dentate leaves. Its disjunct geographic range extends from S Italy through the Balkan Peninsula to W and S Anatolia (Browicz 1982, Jalas & Suominen 1976) (Fig. 1). Its nearest relative, *Q. libani* G. Olivier, occurs in the Near East and differs from *Q. trojana* by its longer petioles, greater numbers of aristate teeth and bigger fruits. Both oaks belong to the subgenus *Cerris,* which is represented in the Mediterranean region also by *Q. cerris* L., *Q. ithaburensis* Decne., *Q. brantii* Lindl. and *Q. suber* L. Fruits of all the above-mentioned species have a glabrous endocarp and usually ripen in the second year.

Quercus trojana is rather variable, especially in leaf size and shape, the number of teeth on the leaf margins and in the indumentum. Leaf hairs, if present, are stellate with (2-)3-8(-14) rays. In addition, there are few to very numerous mace-like, 3-5-celled secretory glands on the abaxial side or on both sides of the leaf blade (Fig. 2B). In the most common widely distributed form, the hairs on the underside of the leaves are either absent or loosely arranged, so that the leaf surface is usually clearly visible (Fig. 2A, 2B). However, in some regions of the species' range, populations with densely stellate-hairy leaves are found. Such populations occur in the western part of the Greek island of Evvoia, the leaves of which are densely stellate-hairy on the abaxial surface. This local form, described as *Q. euboica* Papaioannou, was recently formally included in *Q. trojana* as *Q. trojana* subsp. *euboica* (Papaioannou) K. I. Chr. (Christensen 1997).

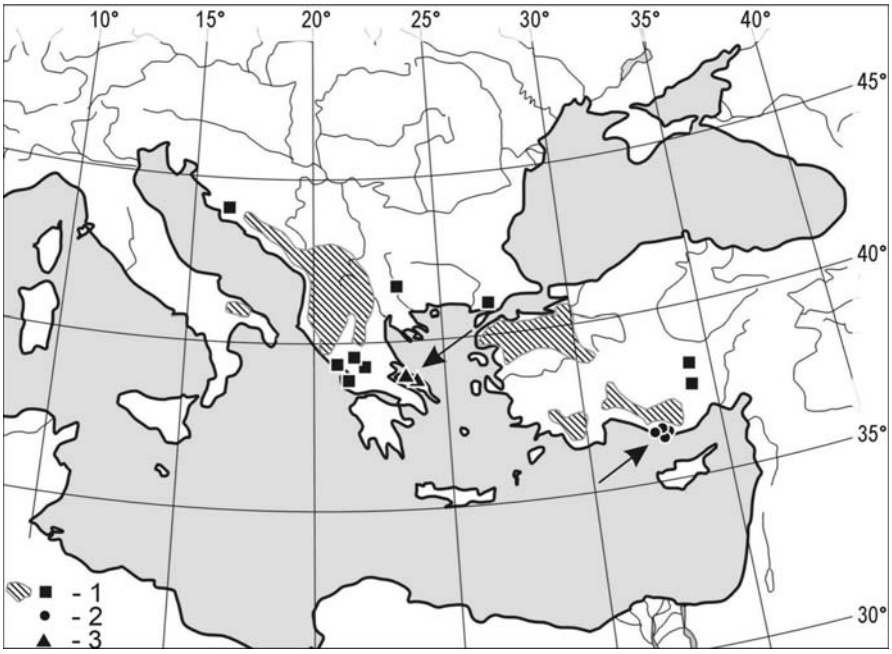

Fig. 1. General geographic distribution of *Quercus trojana* – 1 = subsp. *trojana;* 2 = subsp. *yaltirikii;* 3 = subsp. *euboica*. – Distribution data according to Jovančevič (1965), Jalas & Suominen (1976), Browicz (1982), Hedge & Yaltirik (1982), Yaltirik (1984), Boratyński & al. (1992), Christensen (1997), Mucina & Dimopoulos (2000) and Gussev & al. (2005).

Another distinctly hairy variant of *Quercus trojana* occurs at the southeastern margin of the species' range, in the region of Içel and Antalya in central S Turkey (Fig. 3). In contrast to subsp. *euboica,* these populations consist of small trees with densely hairy branchlets and leaves with hairs present on both sides of the blade. (Fig 2D). These forms, previously discussed by Hedge & Yaltirik (1982) in Flora of Turkey, were also collected in 1991 in the same region by a group of dendrologists from the Institute of Dendrology in Kórnik, Poland. Hedge & Yaltirik (1982) suggest that the dense indumentum may be a result of introgression with *Q. ithaburensis* subsp. *macrolepis* (Kotschy) Hedge & Yalt. However, apart from the densely hairy leaves, the above-mentioned specimens do not differ from *Q. trojana*. In our opinion they represent a peculiar extreme variant of this oak that merits treatment as a separate subspecies. We propose the epithet *yaltirikii,* in honour of Faik Yaltirik, Professor of Botany at the Istanbul University and leading expert of the Turkish woody flora.

Quercus trojana subsp. ***yaltirikii*** Ziel., Petrova & D. Tomaszewski, **subsp. nov.**
Holotype: S Turkey, distr. Içel, between Haci Ahmetli and Çukurbağ, just near Çukurbağ, 18-20 km NNE of Mut, 1200 m, stony-clayey slope, edge of *Pinus brutia* forest, 31.5.1991, *Boratyński, Browicz & Zieliński 6863* (KOR 25094) – Fig. 2D, 3.

Arbor humilis. Rami juveniles sat dense stellulato-pubescentes. Folia supra laxe stellulato-pubescentia, subtus dense pilis stellulatis tecta, cinerea.

Small tree; annual branchlets distinctly stellate-hairy; buds brown, ciliate. *Leaves* up to 7(-8) cm long, to 2.5 cm wide, ovate-lanceolate to oblong-lanceolate, rounded or shallowly cordate at base, acute at apex, loosely to densely stellate-hairy above, with up to 11(-13) mucronate teeth, densely stellate-hairy beneath, grey. *Stipules* narrow, early caducous. *Petioles* 3-5 mm long, hairy. *Cupule scales* appressed or patent.

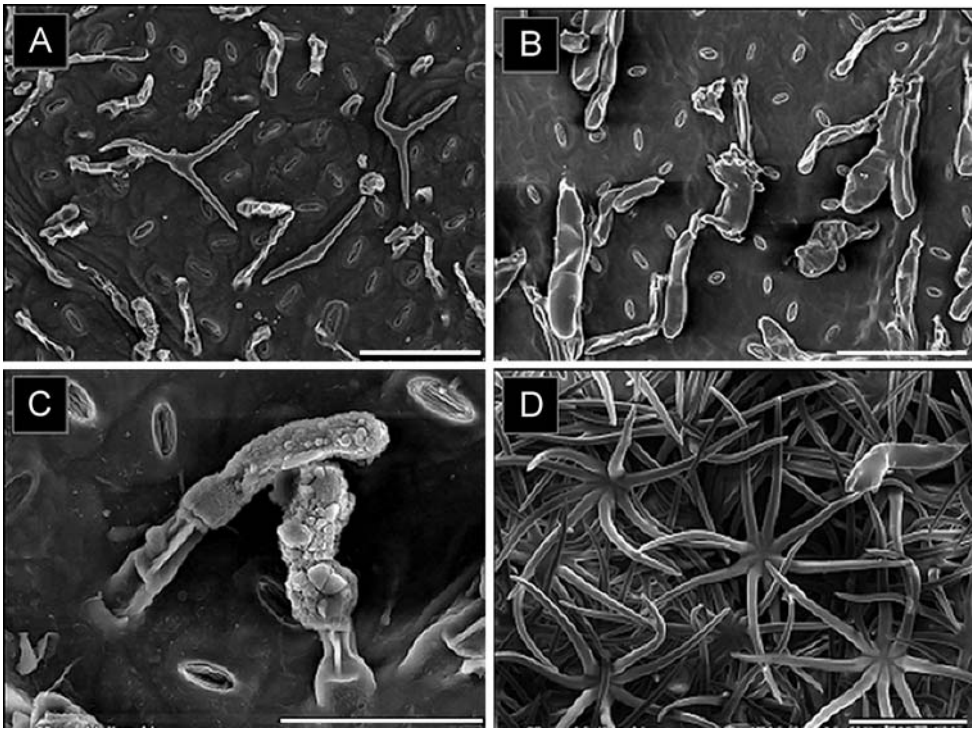

Fig. 2. *Quercus trojana*, SEM photographs of the abaxial leaf surface – A: subsp. *trojana* (from KOR 26542); B: subsp. *trojana,* a form with numerous secretory glands (from KOR 26545); C: subsp. *trojana,* glands secretion visible (from KOR 12068); D: subsp. *yaltirikii* (from the holotype, KOR 25094). – Scale bars: A-B, D = 100 µm, C = 50 µm; photographs by M. Gawlak.

Additional specimens seen (paratypes). – S Turkey, distr. Içel, near Abanoz, by the road to Ermenek, small meadow among rocks, 29.5.1991, *Boratyński, Browicz & Zieliński 6780* (KOR 31026); *Boratyński, Browicz & Zieliński 6886* (KOR 25063); distr. Antalya, Geyik Dağlari, 1500 m, *Abies cilicica-Pinus nigra* forest on calcareous rocks, frequently, 5.8.2005, *Boratyński & Boratyńska TU-05/32* (B, KOR 44631). – See also Hedge & Yaltirik (1982: 680).

The taxonomy of *Quercus trojana* is as follows:

Quercus trojana Webb in Gard. Mag. & Reg. Rural Domest. Improv. 15: 590. 1839

a. subsp. *trojana*
= *Quercus macedonica* A. DC., Prodr. 16(2): 50. 1864

b. subsp. *euboica* (Papaioannou) K. I. Chr. in Strid & Tan, Fl. Hellen. 1: 45. 1997 ≡ *Quercus euboica* Papaioannou in Compt. Rend. Acad. Athènes 23: 336. 1949

c. subsp. *yaltirikii* Ziel., Petrova & D. Tomaszewski

Key to the subspecies of *Quercus trojana*

1. Leaves glabrous on both sides or sparsely stellate-hairy beneath . . . . . subsp. *trojana*
– At least the abaxial leaf surface densely covered with stellate hairs. 2
2. Leaves stellate-hairy on both sides; adult annual branchlets distinctly stellate-hairy; small tree (central S Turkey) . . . . . subsp. *yaltirikii*
– Leaves glabrous above; adult branchlets glabrous or sparsely hairy; shrub (Greece, Evvoia) . . . . . subsp. *euboica*

Fig. 3. *Quercus trojana* subsp. *yaltirikii* – holotype specimen *Boratyński, Browicz & Zieliński 6863* (KOR 25094). – Scale bar = 5 cm; photograph by M. Dziurla.

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