

KAZIMIERZ BROWICZ

Quercus aucheri Jaub. et Spach and its range of occurrence

Abstract

Browicz, K. 1986. *Quercus aucheri* Jaub. et Spach and its range of occurrence. Arbor. Kórnickie 31: 3 - 11.

A detailed description is given of the history of our knowledge on the evergreen oak species *Quercus aucheri* Jaub. et Spach. Data on stands of the species are listed and a point map of distribution is given for the eastern Aegean region.

Additional key words: point map.

Address: K. Browicz, Institute of Dendrology, 62-035 Kórnik, Poland.

In the year 1843 Jaubert and Spach (1842 - 1857) have described a new species of an evergreen oak under the name *Quercus aucheri*. It has been found in the year 1830 by Aucher-Eloy on the Greek island Kos. The herbarium specimen is held in the Herbarium of the Museum d'Histoire Naturelle in Paris. On the basis of this specimen a drawing was made (Fig. 1) representing a leafy shoot several years old and a shoot with two fruits, as well as a separate acorn. For many years this was the only illustration of *Q. aucheri* and the next to appear was that of Camus made in 1934, however, this latter one was also based on the classical herbarium specimen of Aucher-Eloy. Almost 50 years later in the "Flora of Turkey" (Hedge, Yaltirik 1982) in fig. 20 a drawing is given of leaves of that oak (unfortunately not too well chosen) and of a cupule. Lately an illustration of a densely leaved shoot can be found in the monograph on trees and shrubs from Rodhos (Boratyńska et al. 1986).

The diagnosis made by Jaubert and Spach (l. c.) is a very accurate one and later descriptions have not added anything new to it. These authors have noted the fact that a part of the leaves is "... *integerrima* v. *subintegerrima*, *alia repandoserrata*, *aristo-acuminata*". As can be judged from the classical drawing serrate leaves occur on sterile long-shoots, while on short-shoots and on older shoots the leaves have entire margins. This is in fact so, as I was able to see for myself on Rodhos Is., where tree like forms of *Q. aucheri* are characterized by leaves with entire margins, all of an almost equal size and shape, densely located on short shoots, while serrate leaves appear only on one-year old strongly growing shoots (Fig. 2). Pro-



Fig. 1. Oldest herbarium specimens of *Quercus aucheri* (Jaubert et Spach, 1842 - 1857, Illustrationes Plantarum Orientalium)

bably such leaves occur also on damaged or grazed individuals. The second significant feature of *Q. aucheri* is its clear and permanent pubescence on the dorsal leaf surface ("*subtus recentes tomentosus*" according to the original diagnosis). Stems are similarly pubescent ("*ramuli recentes tomentosi*"). The cupule is also characteristic - "*turbinata, echinulata*". The acorns are consumed by the local people (Meyer 1969, Hedge, Yaltirik 1982).

From the moment of the first description, for many years, *Q. aucheri* was either completely forgotten, or treated as a synonym for *Quercus coccifera*, with which species it is closely related. The rank of an independent taxon was assigned to it by De Candolle (1864), Tchihatcheff (1866), Boissier (1879), Wenzig (1886), Gandoger (1890 - as *Coccigera aucheri*), Richier (1897), Camus (1934, 1936 - 1938) and Cifferi (1944). It is interesting, that all these authors refer to the same single herbarium specimen of Aucher-Eloy (No. 1879). De Candolle (l. c.)

mentions also a second specimen in the Firenze herbarium, also collected by Aucher-Eloy (no. 2879) in the vicinity of Constantinopol, however, he suspects that this is an error in numeration and in the place of collection,

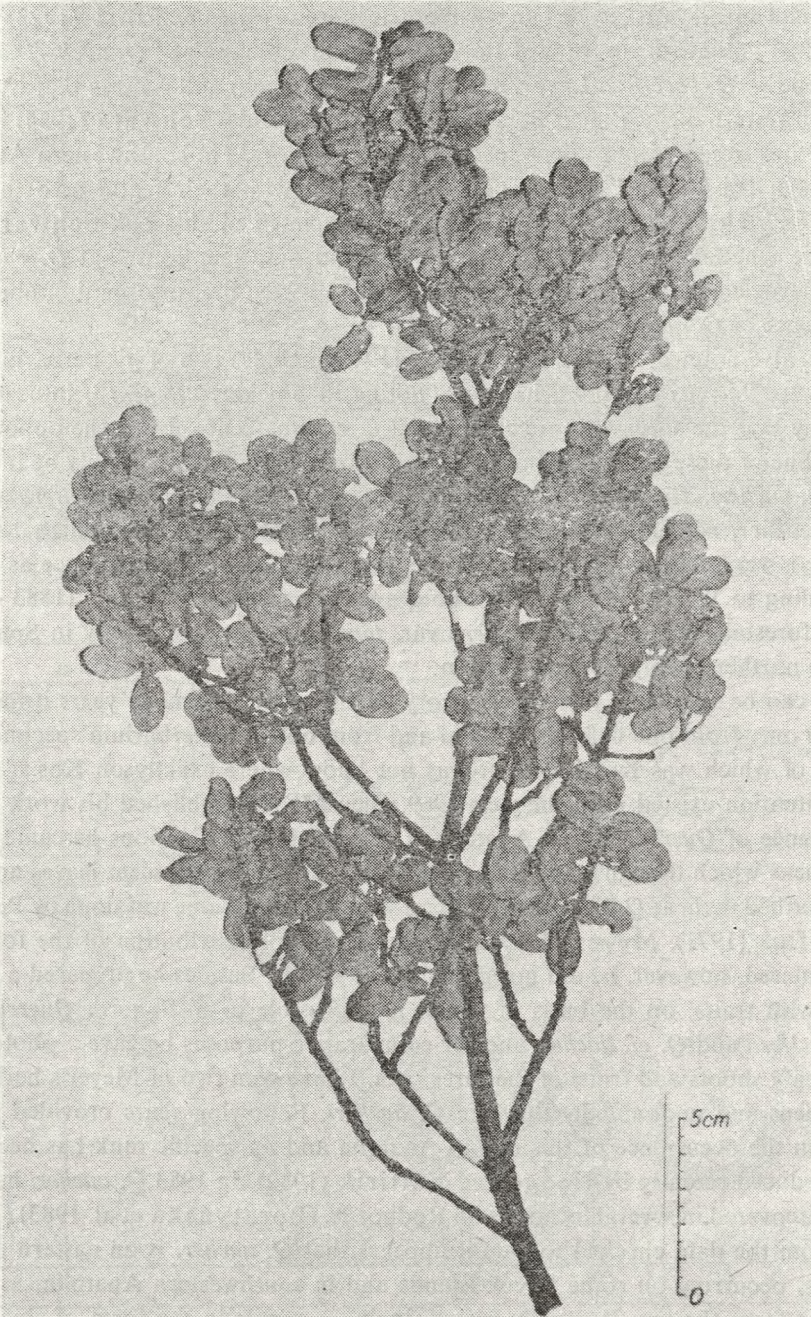


Fig. 2. A herbarium specimen of *Quercus aucheri* from Rodhos (near Lardos)

On the other hand, there are authors who consider *Q. aucheri* to be identical with *Quercus coccifera* (Rechinger 1943, Menitsky 1972 or Hansen 1980). Finally there are those who while dealing in detail with the oaks of the eastern Mediterranean, do not mention *Q. aucheri* at all (Kotschy 1862, Zoháry 1962).

Special mention is needed of two other literature items. Fiori (1923 - 1925) in the first volume of his flora of Italy alters the specific rank of *Q. aucheri* to a varietal one — *Q. coccifera* L. var. *aucheri* (Jaub. et Spach) and reports that it occurs in northwestern Sicily (“nelle Sciare di Marsala”). Besides Schwarz (1934) reports that he has observed pubescent specimens of *Q. coccifera* in southwestern Anatolia (“in Çayli bei Ödemiş”) which could correspond with their features to those of *Q. aucheri*. However, not knowing the type specimen of this oak Schwarz was not sure whether it was in fact that species and only mentions that *Q. coccifera* is a heterogeneous species. This would therefore be the first information about the occurrence of *Q. aucheri* in Anatolia.

It is also noteworthy that Rechinger (1943) includes two of his herbarium specimens to *Quercus coccifera*, however, noting in brackets “*toment*”, indicating in this way that the specimens are characterized by pubescence. I had the opportunity to see one of these specimens (no. 1055) and I believe that it can readily be included with *Q. aucheri*. The name “*tomentosa*” has been used for *Quercus coccifera* already much earlier, namely by De Candolle (1864). That author believed that such a variety is very close to *Q. aucheri* and he gave the site of its occurrence as Spain. According to Willkomm (1893), who quotes the work of Laguna (1883 - 1890, Flora forestal espanola), *Q. coccifera* var. *tomentosa* grows not only in Spain but also in northern Morocco near Tetuan.

As can be seen from this short history of the species for many years it has been known only from one definite location and from only one herbarium specimen, the origin of which was Kos island. It was not known where exactly on Kos it grows. This situation existed until the year 1969 when Meyer published his work on the occurrence of *Quercus ilex* in Anatolia. During field investigations he came across specimens which though resembling *Q. coccifera* have had pubescent leaves and thus he described them as *Q. cf. aucheri*. Several years later the same was done by Peşmen and Oflas (1971). Meyer (1969) published a map of distribution of the forms he encountered, however, he did not give a list of stands. Besides he prepared a special table with traits, on the basis of which it is possible to distinguish *Quercus ilex*, *Q. coccifera* and *Q. cf. aucheri* and for comparative purposes he gave a photograph with leafy shoots and fruits of the three taxa. I have seen two of Meyer's herbarium specimens and undoubtedly they are *Q. aucheri*. Following years provided further data on the occurrence of this oak in Anatolia and its specific rank has been fully reintroduced recently by Hedge and Yaltirik (1982). In 1983 *Q. aucheri* has been also discovered in several locations on Rodhos Is. (Boratyńska et al. 1983) (Fig. 2).

From the data checked to date it appears that *Q. aucheri* is an eastern Aegean species, occurring on some Greek islands and in southwestern Anatolia, as a rule not far from the sea. It usually grows singly, as a rule in the form of small trees about 10 m tall, on limestone rocks and limestone slopes, in exposed places, insolated



Fig. 3. The highest locality of *Quercus aucheri* on Rodhos Isl. — Mt. Messovouna between Archipolis and Archangelos. Phot. A. Boratyński

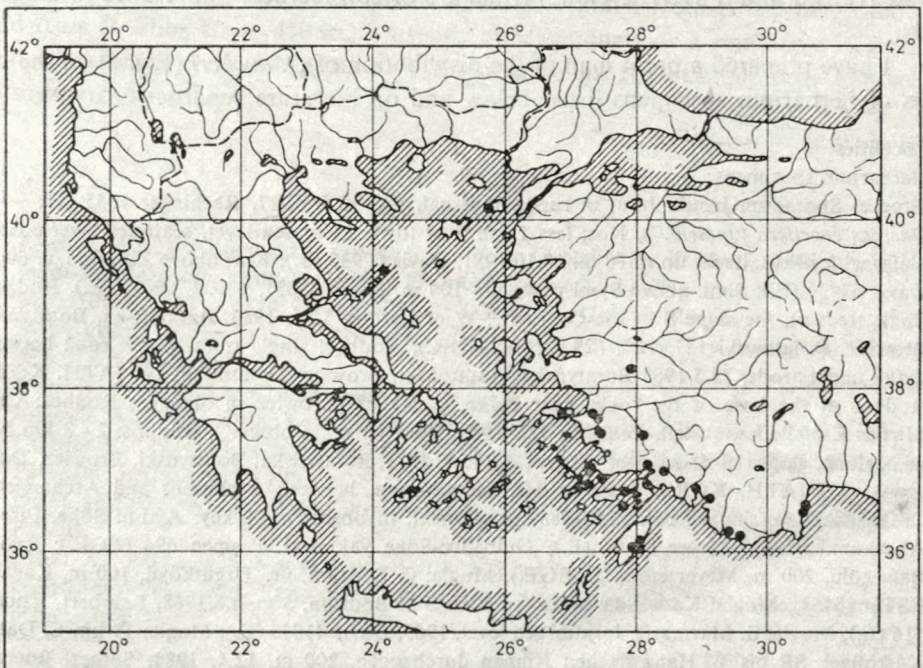


Fig. 4. Distribution of *Quercus aucheri*

and dry, in maquis or phrygana communities, from almost the sea shore to an elevation of more or less 200 - 300 m. In Anatolia it reaches even 400 m and on Rodhos 450 m (Fig. 3). In southern Anatolia, near the ruins of Phasaelis (Tekirova) it even forms an own characteristic community from the alliance *Ceratonio-Pistacia lentisci*, which Akman et al. (1978) have described as "Type à *Quercus aucheri*".

One could suspect that an accurate reevaluation of the herbarium collections of oaks from the Mediterranean region, and particularly specimens of *Q. coccifera* as well as a special field search are likely to lead to the "discovery" of further stands of this little known taxon. On the other hand if it turned out that the taxon can be identified with *Q. coccifera* var. *tomentosa* from Spain and Morocco and *Q. coccifera* var. *aucheri* from Sicily (Willkomm 1893, Fiori 1923 - 1925) then the range of this coastal species would be much wider, Mediterranean, though strongly disjointed, with remnant stands in the west and greatest concentration in the east.

Finally one should consider whether *Q. aucheri* deserves the rank of species, or whether it should be considered within the broad concept of *Q. coccifera* for example as a subspecies or a variety. In its distribution it resembles that of *Juniperus oxycedrus* subsp. *macrocarpa*, however, it is much less common. The final decision, however, has to be postponed till more herbarium materials are collected than those available so far, particularly materials collected in various seasons including fruiting time. According to Jaubert and Spach (1842 - 1857), Meyer (1969) and Hedge and Yaltirik (1982) fruits are of considerable importance in diagnosis.

I have prepared a point map of the distribution of *Q. aucheri* (Fig. 4) on the basis of herbarium specimens listed below and on literature reports.

Localities:

Herbarium specimens:

Greece: Sporadum Insula Jura, in rupestribus cal. 10 - 12.5. 1927, Reehinger 1055 (W. - as *Quercus coccifera* "toment."); Kos; less 1 km S of town. Near sea level, scattered over coastal plain, with olives. Trees up to 10 m. 18.10.1981, Davis 67938 (E.); Kos; above Ziparion, c. 60 m, Davis 67936 (E.); Simi: above Symi port, 50 - 100 m, Davis 68031, 68032, 68033 (E.). Rodhos: single trees on the slope S of the Orbi Mt., W of Lardos, 12.5. 1983, Boratyńska, Boratyński, Browicz, Dolatowski 127, 128, 129 (ATH. KOR.); Rodhos: single trees by the road between Pefka and Larods, 12.5.1983 Boratyńska, Boratyński, Browicz, Dolatowski 137 (ATH. KOR.); Rodhos at the base of the rocks near Pefka, 12.5.1983 (Browicz in observ.); Rodhos: Cape Mirtias E of Pefka, quite a frequent, 12.5.1983 (Boratyński, in observ.); Rodhos: 2 - 3 km NW of Malona, slopes of dried river valley, rare, 15.5. 1983, Boratyńska, Boratyński, Browicz, Dolatowski 147 (ATH. KOR.); Rodhos: Mt. Messovouna, between Archipolis and Archangelos, ca 300 - 450 m, single trees, 17.5.1983 (Boratyński, in observ.). Turkey: Aydin: Söke, Pirene, Akçakanak, 1968, Meyer et al. (E.); Gülbahçe-Söke yakınları, Peşmen 694 (EGE.); Aydin: Bafa gölü, 200 m, Meyer et al. (E. EGE.); Mugla: d. Bodrum, nr. Tirtutköyü, 100 m, Kayacik (ISTO 15468); Mugla: Kara Ada, an island 2 km S of Bodrum, 5 m. 4.8.1968, Lambert, Thorpe 516 (E.); Mugla: d. Marmaris: İnşidibi sea level, 1965, Davis 41033 (E.); Mugla: 19 km E. Datca. Kalkhügel, SE bis W Hang flachen Rinnen durchzogen, 200 m, 12.4. 1982, Sorger, Buchner 82-24-26 (Herb. Sorger); Mugla: d. Fethiye, Kalkan, 30 m. Rocky limestone slopes, Davis 25502 (E.).

Literature:

Greece: Samos: Kastro von Tigani, Rechinger 3596 (Rechinger 1943 – as *Q. coccifera* “*toment.*”). Turkey: Gökceada: Tepeköy yol ayirimindan Dereköy’e dogru 2 km, n. 1367 and Avrat t. dogusu 270 m, n. 1410 (Seçmen, Leblebici 1978); In Çayli bei Ödemiş (Schwarz 1934 – ?); Aydın: Çine valley S of Eskiçine, Fitz, Spitzenberger 372 (Hedge, Yaltirik 1982); Mugla-Fethiye: Gökceovacik köyünün, 250 m (Peşmen, Oflas 1971); Antalya: d. Kas. Muskar köyü, 400 m, Arikan, ISTO 6238 and Antalya: nr. Kemer, 50 m, Akman 7517 (Hedge, Yaltirik 1982); environs des ruines de Phasaelis 5 - 25 m (Akman and al. 1978)*.

SUMMARY

The evergreen species of oak described in 1843, *Quercus aucheri*, has been known from only one location on the Greek island Kos. For many years it was almost completely forgotten, and it was quoted on the basis of the single classical type specimen of Aucher-Eloy collected in 1830, or else it was identified with the closely related species *Quercus coccifera*. Only in the last 15 - 20 years new data appeared on the basis of which the author was able to prepare a point map of distribution of the species in south-western Anatolia and the Greek islands. It is not unlikely that *Q. aucheri* grows also in other parts of the Mediterranean (Spain, Sicily, Morocco), and the author presents literature information on the subject. However, this requires further studies, both in herbaria and in the field.

Quercus aucheri grows in similar situations as *Quercus coccifera*, on low locations, on limestone rocks and slopes, more or less from the sea shore to an elevation of 200 - 300 m. The most elevated stands have been noted from Anatolia – 400 m and from Rodhos Is. – 450 m. It usually appears singly as a small tree 10 m tall and occasionally it can form its own communities as for example near Phasaelis in southern Anatolia.

Accepted for publication 1986

LITERATURE

1. Akman Y., Barbéro M., Quézel P., 1978. Contribution à l'étude de la végétation forestière d'Anatolie méditerranéenne. *Phytocenologia* 5(1): 1 - 79.
2. Boissier E., 1875 - 1879. *Flora Orientalis* 4. Basileae, Genevae, Lugduni.
3. Boratyńska K. and al. – 1985. Trees and shrubs of Rodhos – a monographic study. *Arbor. Kórnickie* 30: 127 - 199.
4. Camus A., 1934. *Les Chenes*. Atlas I. Paris.
5. Camus A., 1936 - 1938. *Les Chenes*. Monographie du genre *Quercus* I. Paris.
6. Cifferi R., 1944. *Flora e vegetazione delle Isole italiana dell' Egeo*. *Atti Inst. Bot. Univ. Pavia ser. 5.A. suppl.* 1 - 193.
7. De Candolle A. P., 1864. *Prodromus Systematis naturalis Regni Vegetabilis* 16/2. Parisiis.
8. Fiori A., 1923 - 1925. *Nuova Flora Analitica d'Italica*, I. Firenze.
9. Gandoger M., 1890. *Flora Europae terrarumque adjacentium*, 21. Paris. (lithographed manuscript).

* A. Carlström (1987. A survey of the flora and phytogeography of Rodhos, Simi, Tilos and the Marmaris Peninsula, Lund) mentions this species also from Tilos island (Dodecanese, Greece).

10. Hansen A., 1980. Eine Liste der Flora der Inseln Kos, Kalymnos, Pserimos, Telendos und Nachbar-Inselchen (Ostägäis, Griechenland). Biol. Gal. Hel. 9(1): 3 - 105.
11. Hedge I. C., Yaltirik F. 1982. *Quercus* L. in P. H. Davis Flora of Turkey 7: 659 - 683. Edinburgh.
12. Jaubert H. F., Spach E., 1842 - 1857. Illustrationes Plantarum Orientalium 1 - 5. Paris.
13. Kotschy T., 1862. Die Eichen Europas und des Orients. Wien u. Olmüz.
14. Menitsky G., 1972. Duby (*Quercus* L.) jugo-zapadnoj Azii. Novosti Sist. Vysš. Rast. 9: 105 - 140.
15. Meyer F. H., 1969. *Quercus ilex* in Kleinasien. Ber. Dtsch. Bot. Ges. 82(7 - 8): 507 - 519.
16. Peşmen H., Oflas S., 1971. Ege Bölgesi Tabii Orman Yangin Alanlarında Beliren İlk Vejetasyon Üzerinde Fenolojik Arastirmalar. Ege Univ. Fen. Fakült. Ilmi Raporlar 112 (Biyoloji 71): 1 - 29.
17. Rechinger K. H., 1943. Flora aegaea. Akad. Wiss. Math.-Nat. Wien. Denkschr. 105(1).
18. Richter K., 1897. Plantae Europae 2 (by R. L. A. M. Gürke). Leipzig.
19. Schwarz O., 1934. Die in der Türkei vorkommenden Bäume und Sträucher. *Quercus* L. Feddes Report. 33: 321 - 338.
20. Seçmen Ö., Leblebici E., 1978. Gökceada ve Bozcaada adalarinin vejetasyon ve florasi. Bitki 5(3): 271 - 368.
21. Tchihatcheff P., 1866. Asie Mineure, III. Partie Botanique. Paris.
22. Wenzig T., 1886. Die Eichen Europas, Nordafrikas und des Orients. Jahrb. Königl. Bot. Garten Berlin 4: 179 - 213.
23. Willkomm M., 1893. Supplementum Prodromi Florae Hispanicae, Stuttgartiae.
24. Zohary M., 1961. On the oak species of the Middle East. Bull. Res. Council Israel, Sect. D. Bot. Suppl. to vol. 11.

Quercus aucheri Jaub. et Spach i jego zasięg

Streszczenie

Opisany w 1843 roku zimnozielony gatunek dębu, *Quercus aucheri*, znany był tylko z jednego miejsca odkrycia, z greckiej wyspy Kos. Przez wiele lat niemal zupełnie o nim zapomniano, cytowano go w oparciu o ten sam klasyczny okaz zielnikowy Aucher-Eloya z 1830 roku, względnie był utożsamiany z blisko spokrewnionym *Quercus coccifera*. Dopiero w ostatnich 15 - 20 latach pojawiły się nowe dane, na podstawie których autor opracował punktową mapę rozmieszczenia tego gatunku w południowo-zachodniej Anatolii i na greckich wyspach. Nie jest jednak wykluczone, że *Q. aucheri* rośnie jeszcze w innych rejonach Śródziemnomorza (Hiszpania, Sycylia, Maroko), toteż autor przytacza odpowiednie dane z literatury na ten temat. Wymaga to jednak dalszych studiów, zarówno zielnikowych, jak i terenowych.

Quercus aucheri rośnie w podobnych warunkach co i *Quercus coccifera*, na terenach nisko położonych, na wapiennych skałach i zboczach, mniej więcej od samych brzegów morza do wysokości 200 - 300 m; najwyższe stanowiska notowano w Anatolii — 400 m, oraz na wyspie Rodos — 450 m. Pojawia się zwykle w pojedynczej formie, jako małe drzewo o wysokości 10 m; niekiedy może tworzyć własne zbiorowisko jak np. koło Phasaelis w południowej Anatolii.

КАЗИМЕЖ БРОВИЧ

Quercus aucheri Jaub. et Spach

Резюме

Описанный в 1843 году зимнезеленый вид дуба — *Quercus aucheri* — известен был только в месте его открытия на греческом острове Кос. В течение многих лет его почти совсем забыли, цитируя его на основании одного и того же классического гербарного экземпляра

Аушер-Элоя с 1830 года или же его отождествляли с родственным *Quercus coccifera*. Лишь в последние 15 - 20 лет появились новые данные, на основании которых автором разработана точечная карта размещения этого вида в юго-западной Анатолии и на греческих островах. Не исключено однако, что *Q. aucheri* произрастает еще и в других районах Средиземноморья (Испания, Сицилия, Марокко), поэтому автор приводит соответствующие литературные данные на эту тему. Это требует однако дальнейших гербарных и полевых исследований. *Q. aucheri* растет в схожих условиях с *Quercus coccifera* на территориях низко расположенных, на известняковых скалах и откосах, примерно от самых берегов моря до высоты 200 - 300 м. Самое высокое местонахождение отмечено в Анатолии — 400 м и на острове Родос — 450 м. Он появляется обычно одиночно, в виде небольшого дерева высотой в 10 м; иногда он образует собственные ассоциации, как например около Фасаэлис в южной Анатолии.

