

A New Occurrence of *Phoenix theophrasti* in Kumluca-Karaöz, Turkey

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ABSTRACT

Until recently *Phoenix theophrasti* was known from only five coastal localities in Crete, Greece. Recently this species has been recorded in a rather large area in the Datça Peninsula of Turkey. Last year (1985) a new occurrence was also recorded in Kumluca-Karaöz, Turkey. These natural stands in Anatolia represent the first recorded occurrence in Asia, too. In this article the new occurrence in Kumluca-Karaöz (at the side of Fınike Bay) is described.

Phoenix theophrasti Greuter was known from only five coastal localities in Crete, Greece (Barclay 1974, Anon. 1983) and accepted as a species endemic to Crete (Strasburger 1978, Anon. 1983), until the recent record was made in the Datça Peninsula of Turkey (Boydak 1983, Boydak and Yaka 1983, Boydak 1985). In Crete the main occurrence is at Vai. There are some occasional specimens elsewhere on the island, too (Snogerup 1985). In addition to these occurrences, native stands of *Phoenix theophrasti* were recorded in Kumluca-Karaöz (at the side of the Fınike Bay), Turkey in 1985.

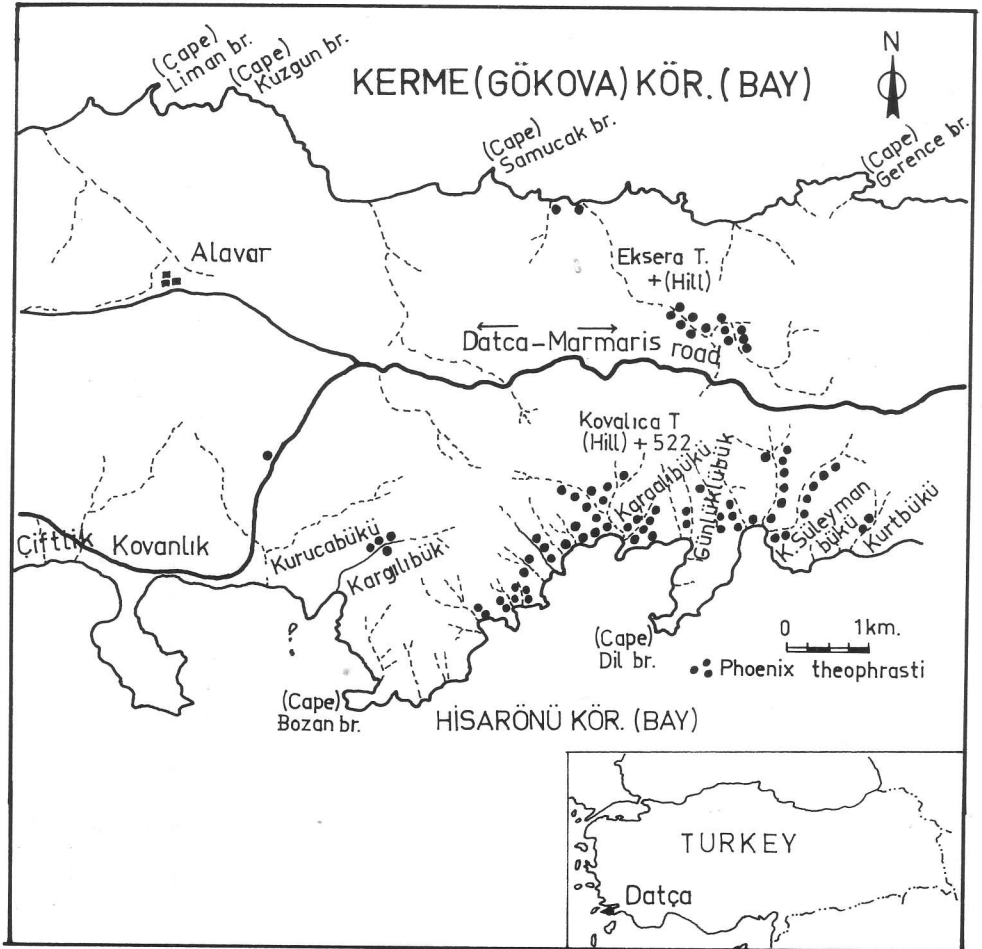
Although some species of the genus *Phoenix* and also other representatives of family Palmae are cultivated in Turkey (Oraman 1945, Baytop 1977, Kayacik 1982), the family was not known to occur naturally in Turkey until the first occurrence of *Phoenix theophrasti* was recorded in the Datça Peninsula. The occurrence of this species in Turkey has considerable scientific importance. According to our present knowledge, these

represent the only natural stands of *Phoenix theophrasti* in Asia.

Considering the scarcely accessible areas, rarely visited in Turkey, together with other evidences, I reached the opinion that some other groves of *Phoenix theophrasti* might occur in Turkey, and explained this idea in the above mentioned literature. It is very satisfying that the new record of *Phoenix theophrasti* in Kumluca-Karaöz supported my conjectures. There could be still more groves of this species waiting to be discovered in Turkey. Research on probable sites will be continued.

The occurrence, botanical characteristics, relationships, ecological and silvicultural features of *Phoenix theophrasti* have been described in previous literature (Greuter 1967, Zohary 1973, Barclay 1974, Strasburger 1978, Franco 1980, Anon. 1983, Boydak 1983, Boydak and Yaka 1983, Boydak 1985, Snogerup 1985), each writer considering one or more aspects.

Phoenix theophrasti was first discovered on the island of Crete (Greuter 1967). Greuter mentions that the "Cretan Date Palm" has been known since the beginnings of the science of botany, the first written information about it being given by Theophrastus. More records of this species were made by several former travellers, who have considered this tree to be an escape from formerly cultivated date groves (Zohary 1973). However, according to Greuter's investigation, it should be

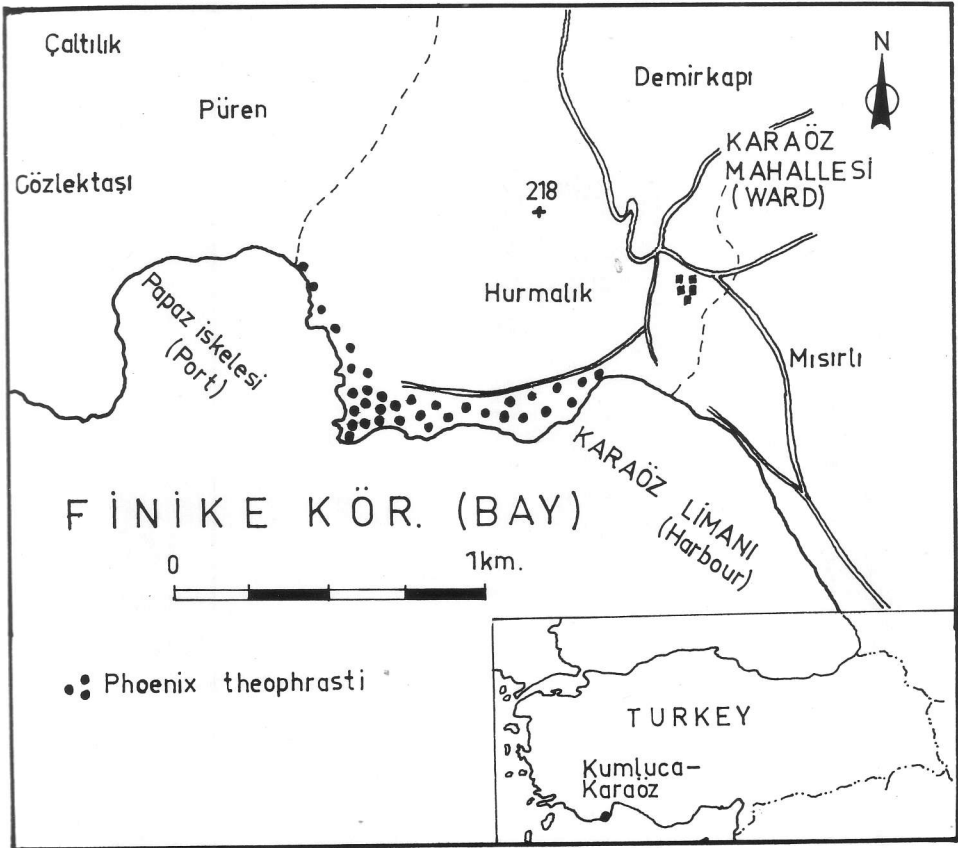


1. The occurrence of *Phoenix theophrasti* in the Datça Peninsula, Turkey (Boydak 1985).

regarded as a species distinct from the cultivated date palm as the differences are significant. Greuter (1967), quoting from Evreinoff (1956) writes that fossil investigations reveal that some representatives of the genus *Phoenix* were found in Miocene formations of central Europe. Around the Aegean coastal areas it also occurs in Pleistocene formations. The features of the fossil form *Phoenix dactylifera fossilis* Drude were found to be very similar to those of the date palm *Phoenix dactylifera* L. (Boydak 1985). Recent fossil investigations in Santorini (Greece) also

revealed some fossils resembling *Phoenix theophrasti* (Friedrich 1980).

The main differences from the cultivated date palm were described as the upright fruit clusters and small inedible fruits (Anon. 1983). On the other hand the taxon of *Phoenix* native to the coastal plains of southern Iran and Iraq at Sharqa, Bander Abbas and Basra is mentioned as a wild form of *Phoenix dactylifera* by Fischer (1881, in Greuter 1967). It is explained that further investigations are needed to understand whether the present information agrees with *Phoenix theo-*



2. The occurrence of *Phoenix theophrasti* in Kumluca-Karaöz (at the side of the Finike Bay), Turkey.

phrasti (Zohary 1973). In addition, Theophrastus (Greuter 1967) described two *Phoenix* species native to Cyprus, and considered that there could be relationships between *Phoenix theophrasti* and one of these two species.

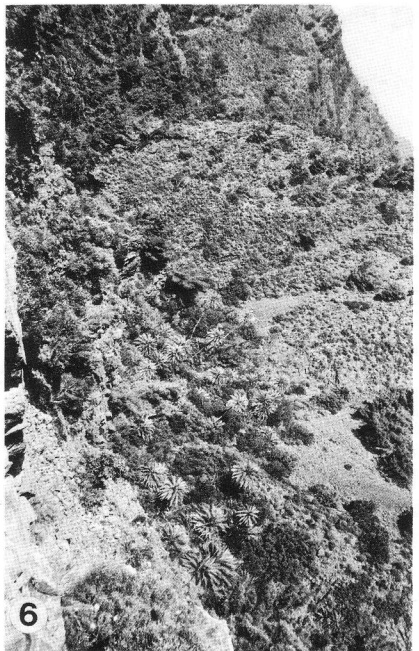
Greuter (1967) and Zohary (1973) accept that *Phoenix dactylifera* originated in the mid-eastern hot deserts. Zohary explains that these assumptions are in accordance with Fischer and Beccari (1890, in Zohary 1973). He also explains that this assumption of the Irano-Arabian origin of the date palm agrees very well with the fact that the earliest evidence on date cultivation comes to us from the Sumerians. He accepts, however, that this does not rule out the existence of an

ancestral relationship between the cultivated date palm and *Phoenix theophrasti* (Boydak 1985).

Natural Distribution in Kumluca-Karaöz

According to our present knowledge, there are two main natural areas of *Phoenix theophrasti* in Turkey: Datça Peninsula and Kumluca-Karaöz (Figs. 1, 2). The occurrence in the Datça Peninsula has been explained elsewhere (Boydak 1983, Boydak and Yaka 1983, Boydak 1985). Only the new occurrence recorded in 1985 in Kumluca-Karaöz (at the side of the Finike Bay) will be considered here.

The natural stand of *Phoenix theo-*



3. *Phoenix theophrasti* with *Pinus brutia* (left) and with the other mediterranean flora (above) in Kumluca-Karaöz. 4. *Phoenix theophrasti* at the seaside in Kumluca-Karaöz. 5. The severe conditions in Kumluca-Karaöz where *Phoenix theophrasti* occurs. 6. *Phoenix theophrasti* on soils derived from serpentine and serpentine-peridotite in the Datça Peninsula.



7. *Phoenix theophrasti* individuals growing on conglomerate and limestone (left), and on karst-limestone (above) in Kumluca-Karaöz.

phrasti in the Kumluca-Karaöz locality is very far from Datça Peninsula, but the trees are under similar climatic influences in the Mediterranean region. Here the occurrence is limited to between Karaöz Limani (Karaöz Harbor) and Papaz Iskelesi (Papaz Port). The grove consists of hundreds of young and old individuals of *Phoenix theophrasti*. It is associated with *Pinus brutia* and other typical mediterranean plants (Fig. 3). The occurrence is between sea level and about 50 m altitude (Fig. 4). The grove seems to be struggling to survive (Fig. 5). However many seedlings, young and old trees among the rocks show the biological vigor of the grove and explain its survival to the present day (Fig. 7). Here many trees are about 10 m height. The highest tree we observed was about 15 m.

The bays at the side of the Peninsula, Karaöz Limani and Papaz Iskelesi, are fantastically beautiful. As a matter of fact, this *Phoenix theophrasti* grove is inside

the Beydağları (Olimpos) National Park near Antalya which is also very famous from the historical and tourism point of view. There are many other marvelous bays far from inhabited areas, and other beauty spots in the Beydağları (Olimpos) National Park, too.

In the Datça Peninsula *Phoenix theophrasti* grows on soil derived from serpentine and serpentine-peridotite (Fig. 6), while it grows on soils derived from limestone in Kumluca-Karaöz (see Fig. 7). In the Kumluca-Karaöz occurrence we also observed conglomerate, siltstone and sandstone. Here the grove is generally on a shallow soil or rocky site which contains several deep crevices. These crevices are full of soil which permits the root development and provides conditions suitable for the tree growth; such rocky substrates are general features of the extensive karst lands of the Taurus Mountain Ranges in the Mediterranean region of Turkey.

Some investigations were made on the

literature of water relations of *Phoenix theophrasti*. Although writers have similar ideas in general, there are some differences among the details of their opinions. Ecological features of water relationships and moisture requirements of *Phoenix theophrasti*, taking into consideration the root system and air humidity should be investigated. In the Kumluca-Karaöz occurrence, this species has better water supply conditions, as its distribution is between the sea level and about 50 m altitude. However, we should not forget the complexity of water relations in karst areas, and also the long and hot drought period prevailing in the Mediterranean region.

It is worth comparing the natural distribution of *Phoenix theophrasti* with that of the endemic *Liquidambar orientalis* Mill. (Hamamelidaceae) in Anatolia. As far as is known, the natural distribution of *Liquidambar orientalis* is mostly concentrated around Muğla Province which also includes the Datça Peninsula where *Phoenix theophrasti* occurs. In addition, there is a remnant of *Liquidambar orientalis* in Antalya region, in the valley of the River Aksu. Similarly, *Phoenix theophrasti* also has a remnant in Antalya region, Kumluca-Karaöz. On the other hand, some species of both families have been found as fossils in the European Tertiary. Moreover, at present, species of both families are mostly confined to the tropics and subtropics.

Necessary Conservation Measures

Phoenix theophrasti in Kumluca-Karaöz is vulnerable because of the possibility of forest fire when compared with its occurrence in the Datça Peninsula. In the Datça Peninsula the stands are hardly accessible, and consist of populations on rather steep slopes, far from inhabited areas. In contrast, a big summer village has been built in Kumluca-Karaöz. This increases the fire danger. In fact, in

1985 a dangerous forest fire happened quite near the grove. Therefore, as a first measure, the local Forest Service decided on fencing the grove. A fire break should be also considered. As mentioned above, the grove is inside the Beydağları (Olimpos) National Park. Therefore other conservation measures could be easily effected. Some trees which are growing near the seaside among rocks, widely separated from the other flora may survive forest fire. However, as the palm is so rare and very important and the grove rather small, it deserves special great attention and should be adequately protected. As indicated in previous literature, in order to conserve the groves of *Phoenix theophrasti* in Crete some protection measures have been undertaken (Leon 1983), and similar measures are being applied in the Datça Peninsula (Boydak 1985). We also encourage the propagation and planting of this species in parks and gardens.

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Seeds will be distributed over a period of several months in the order in which requests are received. However, in the interest of achieving optimum distribution, the Society reserves the right to fill large orders last.

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