***Quercus kubinyii* (Kováts ex Ettingshausen) Czeczott 1951 (Fagaceae)**

Leaf description

- **morphology:**
  organisation: simple; **petiole:** leaves long-petiolate; **shape:** lamina narrow ovate to narrow elliptic, up to about 100 mm long; **leaf base:** base angle acute to somewhat obtuse, base shape straight to somewhat convex, may be somewhat asymmetric; **leaf apex:** apex angle narrow acute, apex shape mainly straight to somewhat acuminate; **margin:** toothed, simple serrate, teeth widely spaced one tooth above the secondary veins, teeth asymmetric, apex acute to spiny, sinus rounded; **1°-vein framework:** venation pinnate, midvein moderately thick; **2°-vein framework:** secondaries more delicate, regularly, moderately widely spaced, craspedodromous, originating at about 40–60°, running straight towards the margin, terminating in the tooth apices; **3°-vein framework:** percurrent, higher order veins polygonal reticulate, areoles well developed, veinlets dichotomous to dendritic branched.
- **cuticle:**
  amphistomatic; cuticle of both sides delicate; **adaxial cuticle:** anticlines delicate, straight, cell outlines polygonal, simple trichome bases rare or cuticle glabrous; **abaxial cuticle:** anticlines straight to curved to somewhat undulate, stomatal complexes anomocytic to incompletely cyclocytic, dense but irregularely distributed, stomata broadly oval to almost circular, front cavity narrow and short, T-shaped polar thickenings may be preserved; simple, small trichome bases may occur, sometimes with the basal parts of a glandular trichome.

Palecology

- **habitat:** mesophytic forests
- **vegetation type:** broad-leaved deciduous forests, mixed forests
- **life form:** tree
- **foliage persistence:** deciduous leaves
- **flower ecology (pollination):** wind-pollinated (anemophilous)
- **fruit ecology (dispersal):** animal-dispersed (zoochorous)

Stratigraphy / Distribution

- **stratigraphy:** Middle to Upper Miocene
- **distribution:** Europe

Miscellaneous

- **synonyms:** *Castanea kubinyii* KOVATS ex ETTINGSHAUSEN 1852
- **modern relationship:** Several species have been proposed such as *Q. libani* G. OLIVIER, *Q. variabilis* BLUME, *Q. acutissima* CARRUTH.
- **remarks:** Generally the leaves of *Q. kubinyii* are more slender than those of *Q. gigas*. The petiole is long but often preserved incompletely only. When single leaves are available only, it may, be difficult to differentiate Q. kubinyii from Q. gigas based on gross morphology only. Regarding the cuticle, *Q. kubinyii* lacks pluricellular bases of stellate trichomes and single, inconspicuous bases of probable glandulous trichomes may occur but usually are not dense. There is a still ongoing discussion regarding

the generic assignment of such leaves to *Quercus* or *Castanea* especially when based on grossmorphology only. Hummel (1983) and Kvaček & Walther (1989) argue that in *Castanea*, trichome bases of glandular trichomes are more asymmetric.

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26 macroscopic leaf traits are stored in *Digiphyll*

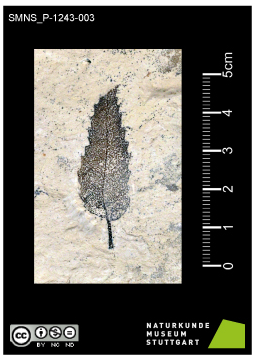
#	trait code	trait: charcters state
1	A-1.2	petiole: present
2	A-1.2.2	petiole, present: long
3	A-2.1	leaf organisation: simple
4	A-3.1	leaf shape: elliptic
5	A-3.3	leaf shape: ovate
6	A-4.1	leaf base angle: acute
7	A-4.2	leaf base angle: obtuse
8	A-5.1	leaf base shape: without basal extension
9	A-5.1.1	leaf base shape, without basal extension: cuneate (straight)
10	A-5.1.4	leaf base shape, without basal extension: concavo-convex
11	A-6.1	leaf apex angle: acute
12	A-7.1	leaf apex shape: attenuate (straight)
13	A-7.2	leaf apex shape: acuminate
14	A-8.2	leaf margin: toothed
15	A-8.2.2	leaf margin, toothed: dentate
16	A-9.1.1	leaf teeth, order number of teeth: simple order (first order)
17	A-9.2.2	leaf teeth, tooth density: not dense
18	A-9.3.1	leaf teeth, tooth size: small
19	A-9.4.4	leaf teeth, tooth apex shape: spinose
20	A-9.5.2	leaf teeth, tooth sinus shape: rounded
21	B-1.1	primary vein framework: pinnate
22	B-2.1	secondary vein framework: 2°-veins reach margin
23	B-2.1.1	secondary vein framework, 2°-veins reach margin: craspedodromous
24	B-3.2	intramarginal vein: absent
25	B-4.2	intersecondaries: absent
26	B-5.1	tertiary vein framework: percurrent

For a detailed description of the leaf traits see menu *Manuals*.

? microscopic leaf traits are stored in *Digiphyll*

comming soon

Fossil images



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- **Kvaček Z., Velitzelos D. & Velitzelos E. (2002):** Late Miocene flora of Vegora, Macedonia, N-Greece. – *Korali Athens*: 175 p.
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