

Ulmus pyramidalis (Goeppert) emend. Iljinskaja in Takhtajan 1982 (Ulmaceae)

Leaf description

- **morphology:**
organisation: simple; **petiole:** leaves shortly petiolate, petiole often bent; **shape:** leaf shape variable, mainly slender, oblong to somewhat ovate, elliptic or obovate, base asymmetrical; **leaf base:** base angle acute to obtuse, base shape convex to slightly asymmetrical cordate; **leaf apex:** apex angle acute, apex shape somewhat acuminate or straight; **margin:** toothed, sharply double serrate, teeth densely spaced, first order teeth with one or two smaller teeth on the basal side, tooth apices and sinuses acute; **1°-vein framework:** pinnate, midvein straight; **2°-vein framework:** secondaries rather dense and numerous, more or less parallel, steeply ascending, not or rarely forking only, running straight towards the margin curving often somewhat upwards before they terminate in the apices of first order teeth; veinlets arising at the basal side of the secondaries near the margin run towards the second order teeth where they may terminate in the tooth apex or sinus; **3°-vein framework:** tertiaries percurrent, higher order veins reticulate.
 - **cuticle:**
cuticles are hardly preserved
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Paleecology

- **habitat:** mainly alluvial forests
 - **vegetation type:** deciduous broad-leaved and mixed mesophytic forests
 - **life form:** tree
 - **foliage persistence:** deciduous leaves
 - **flower ecology (pollination):** wind-pollinated (anemophilous)
 - **fruit ecology (dispersal):** wind-dispersed (anemochorous)
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Stratigraphy / Distribution

- **stratigraphy:** Late Oligocene to Miocene
 - **distribution:** Wide-spread in the European record.
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Miscellaneous

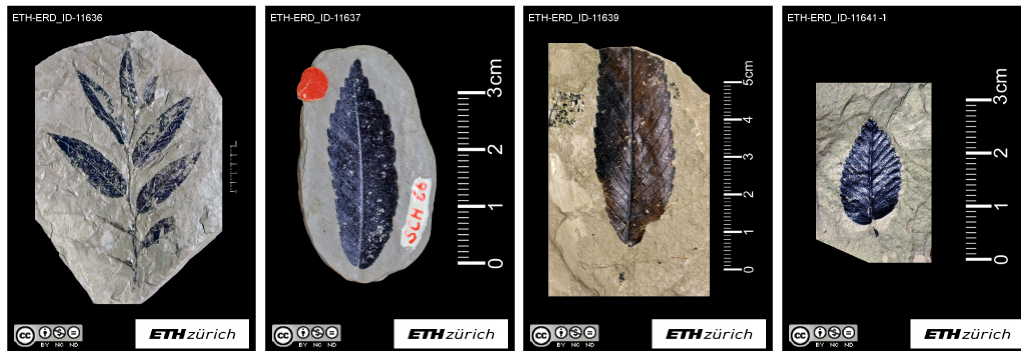
- **synonyms:** *Ulmus longifolia* UNGER, *U. carpinoides* GOEPP., *U. minuta* GOEPP.
- **modern relationship:** Two species are often mentioned: *Ulmus alata* MICHX. which prefers dry uplands but also moist valleys and *Ulmus americana* L. thriving in moist valleys and flood plains. Both are North American species.
- **remarks:** At individual sites, such elm leaves are sometimes very abundant. Aside the main leaf type small leaves which are (broad) elliptic or ovate in shape may also occur (type *U. minuta* GOEPP.) as well as broader leaf forms which have been assigned to *U. carpinoides* GOEPP. Since all these leaf types cooccur not only at the type locality Sośnica (Poland) but for example also at Öhningen and Schrotzburg (Germany), it is plausible, that they may represent a single species. Based on leaf morphology, modern elms are very difficult to differentiate properly. Therefore the true number of the fossil species within this morphological complex remains disputable.

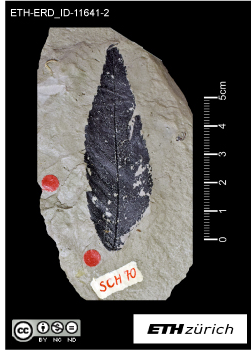
28 macroscopic leaf traits are stored in *Digiphyll*

#	trait code	trait: charcters state
1	A-1.2	petiole: present
2	A-1.2.1	petiole, present: short
3	A-2.1	leaf organisation: simple
4	A-3.1	leaf shape: elliptic
5	A-3.3	leaf shape: ovate
6	A-3.4	leaf shape: oblong
7	A-4.1	leaf base angle: acute
8	A-4.2	leaf base angle: obtuse
9	A-5.1	leaf base shape: without basal extension
10	A-5.1.1	leaf base shape, without basal extension: cuneate (straight)
11	A-5.1.2	leaf base shape, without basal extension: rounded
12	A-6.1	leaf apex angle: acute
13	A-7.1	leaf apex shape: attenuate (straight)
14	A-7.2	leaf apex shape: acuminate
15	A-8.2	leaf margin: toothed
16	A-8.2.2	leaf margin, toothed: dentate
17	A-9.1.2	leaf teeth, order number of teeth: double (second order) or higher orders
18	A-9.2.1	leaf teeth, tooth density: dense
19	A-9.3.1	leaf teeth, tooth size: small
20	A-9.4.1	leaf teeth, tooth apex shape: acute
21	A-9.5.1	leaf teeth, tooth sinus shape: acute
22	B-1.1	primary vein framework: pinnate
23	B-2.1	secondary vein framework: 2°-veins reach margin
24	B-2.1.1	secondary vein framework, 2°-veins reach margin: craspedodromous
25	B-3.2	intramarginal vein: absent
26	B-4.2	intersecondaries: absent
27	B-5.1	tertiary vein framework: percurrent
28	B-5.1.1	tertiary vein framework, percurrent: opposite

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

Fossil images





References

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