

Acer integrilobum Weber emend. Walther 1972 (Sapindaceae)

Leaf description

- **morphology:**
organisation: simple; **petiole:** long; **shape:** palmately three-lobed, central lobe up to at least 70 mm long; laminar shape broad ovate to elliptic; the central lobe differs by its rather long, tapering apex from the lateral lobes; sinus between central and lateral lobes mainly widely rounded forming an angle of almost 90°; **leaf base:** base angle obtuse, base shape rounded, obtuse to somewhat cordate; **leaf apex:** apex shape somewhat acuminate to attenuate; **margin:** untoothed but a single tooth/reduced lobe may be developed near the base as well as lateral on both sides of the central lobe; **1°-vein framework:** palmate, actinodromous; **2°-vein framework:** secondaries weak brochidodromous to semicraspedodromous (where a tooth/reduced lobe is developed); intersecondaries present; **3°-vein framework:** tertiaries random reticulate.
 - **cuticle:**
very delicate, only rarely preserved, in tiny fragments only; hypostomatic; **adaxial cuticle:** anticlines straight to bent, delicate, cell shape polygonal, trichome bases at least above veins, single, shape rounded to elliptic, poral rim thick; **abaxial cuticle:** anticlines hardly visible; stomata, 13-29 µm long, 11-21 µm wide, cuticular ledges thickened, front cavity narrow spindle-shaped; trichome bases as on the adaxial cuticle.
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Paleocology

- **habitat:** mesic soils
 - **vegetation type:** mixed mesophytic forests, broad-leaved temperate forests
 - **life form:** (small) tree
 - **foliage persistence:** deciduous leaves
 - **flower ecology (pollination):** ?
 - **fruit ecology (dispersal):** wind-dispersed (anemochorous)
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Stratigraphy / Distribution

- **stratigraphy:** Oligocene to Pliocene
 - **distribution:** Rather rare in the Oligocene, more common but usually not abundant in the Central European Miocene unto the Pliocene; more common in Upper Miocene to Pliocene plant assemblages of southern Europe.
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Miscellaneous

- **synonyms:** –
- **modern relationship:** *Acer campbellii* ssp. *wilsonii* (REHD.) DE JONG which thrives in China (provinces Hupeh, Chekiang, Yunnan, Kwangtung) resembles both in gross morphology and cuticular features (Ströbitzer-Hermann 2002). Walther (1972) recognises similarities also to *A. cappadocicum* GLED. (Caucasian maple). Grossmorphological similarity exists also to the East-Asian *A. longipes* FRANCH. ex REHD.

- **remarks:** *A. integrilobum* was often misidentified as, e.g. *Acer monspessulanum* L. (Grangeon 1958). It differs from *A. pseudomonspessulanum* and *A. integerrimum* by the long tapering and a bit offset apex of the central lobe. Leaves of *A. pseudomonspessulanum* are usually smaller and leaves of *A. integerrimum* are usually five-lobed. Despite these differences an assignment may be difficult especially when only single, fragmentarily preserved fossils are at hand. Tiny cuticle fragments have been described only exceptionally (Ferguson 1971, Ströbitzer-Hermann 2002). *A. integrilobum* mostly is not abundant; it is regarded as an accessory element.

24 macroscopic leaf traits are stored in *Digiphyll*

#	trait code	trait: characters state
1	A-1.2	petiole: present
2	A-1.2.2	petiole, present: long
3	A-2.1	leaf organisation: simple
4	A-3.6	leaf shape: lobed
5	A-3.6.2	leaf shape, lobed: palmately lobed
6	A-4.2	leaf base angle: obtuse
7	A-5-1	leaf base shape: without basal extension
8	A-5.1.2	leaf base shape, without basal extension: rounded
9	A-5.2	leaf base shape: with basal extension
10	A-5.2.1	leaf base shape, with basal extension: cordate
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-8.1	leaf margin: untoothed
15	B-1.2	primary vein framework: palmate
16	B-1.2.1	primary vein framework, palmate: actinodromous
17	B-1.2.1.1	primary vein framework, palmate, actinodromous: basal actinodromous
18	B-2.1	secondary vein framework: 2° veins reach margin
19	B-2.1.2	secondary vein framework, 2° veins reach margin: semicraspedodromous
20	B-2.3	secondary vein framework: 2° veins form loops and do not reach margin
21	B-2.3.2	secondary vein framework, 2° veins form loops and do not reach margin: weak brochidodromous
22	B-3.2	intramarginal vein: absent
23	B-4.1	intersecondaries: present
24	B-5.2	tertiary vein framework: reticulate

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

? microscopic leaf traits are stored in *Digiphyll*

coming soon

Fossil images

images not yet available!

References

- **Ferguson D.K. (1971):** The Miocene flora of Kreuzau, Western Germany. – *Verhandelingen der Koninklijke Nederlandse Akademie van Wetenschappen*, Afd. Natuurkunde, 60(1): 1-297.
- **Grangeon P. (1958):** Contribution a l'étude de la paléontologie végétale du Massif du Coiron (Ardèche) (sud-est du Massif Central Français). – *Mémoires de la Société d'histoire naturelle d'Auvergne*, 6: 1-302.
- **Ströbitzer-Hermann (2002):** Systematik, Variabilität, regionale und stratigraphische Verbreitung sowie Ökologie der Gattung *Acer* L. in Mitteleuropa vom Oligozän bis ins Pliozän. – *Dissertation, Formal- und Naturwissenschaftliche Fakultät*, Universität Wien: 149 p.
- **Walther H. (1972):** Studien über tertiäre *Acer* Mitteleuropas. – *Abhandlungen des Staatlichen Museums für Mineralogie und Geologie zu Dresden*, 19: 1-309.

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