

*Acer tricuspdatum* Bronn 1838 (Sapindaceae)

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**Leaf description**

- **morphology:**  
**organisation:** simple; **petiole:** long petiolate; **shape:** palmately usually three-lobed to weakly five-lobed in which the basal lobes are more or less distinctly developed, central lobe longer and often wider than lateral ones, the lateral ones may even be extremely short; **leaf base:** base angle obtuse, base shape mainly rounded or somewhat cordate or almost truncate; **leaf apex:** apex angle odd-lobed (narrow) acute, shape straight (acute) to acuminate; **margin:** dentate; tooth density variable, teeth irregularly spaced and differently sized, small to large within one leaf; tooth apex acute, tooth sinus mainly acute; **1°-vein framework:** basal actinodromous, each lobe with one main vein running into the lobe apex; **2°-vein framework:** mainly craspedodromous to semicraspedodromous; secondary veins sometimes forking, branches may fuse with the adjacent one; intersecondaries sometimes present; **3°-vein framework:** tertiaries sinuous percurrent, almost perpendicularly arising from the secondaries.
- **cuticle:**  
cuticle thickness on either side delicate to medium, hypostomatic; anticlines slender, straight to somewhat bent, outline of normal epidermal cells usually irregular quadrangular to hexagonal; **adaxial cuticle:** normal epidermal cells about 16–35 µm across, surface occasionally faintly striate, glabrous (no trichomes); **abaxial cuticle:** normal epidermal cells somewhat smaller than on the adaxial side; stomatal complexes anomocytic, densely spaced, elliptic to a bit butterfly-like in shape, stoma shape elliptic, guard cells often rather small, up to 20 µm long, rarely longer, stomatal ledges distinctly thickened, front cavity elliptic reaching almost to the poles; trichome bases dense especially over veins, simple, trichome base cells rather unmodified, trichome pore roundish; single, one-celled, elongated trichomes reaching considerable length of more than 150 µm, surface finely striate.

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**Paleecology**

- **habitat:** mainly in wetlands, probably also in mesophytic forests
- **vegetation type:** mixed mesophytic to warm-temperate deciduous forests
- **life form:** tree
- **foliage persistence:** deciduous
- **flower ecology (pollination):** probably insect-pollinated
- **fruit ecology (dispersal):** wind-dispersed (anemochorous)

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**Stratigraphy / Distribution**

- **stratigraphy:** Lower Oligocene to Pliocene
  - **distribution:** Europe
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**Miscellaneous**

- **synonyms:** *Acer trilobatum* (STERNBERG) A. BRAUN
- **modern relationship:** This fossil-species is compared to the North American maples *Acer rubrum* L. and *Acer saccharinum* L.

- **remarks:** This is the most common maple in the European late Paleogene and Neogene. The leaves are rather variable in size as well as in number and length of the lateral lobes. Especially in the late Miocene to Pliocene small three-lobed leaves with short lateral lobes are more common. They are treated as *Acer tricuspidatum* forma *productum* (Kvaček et al. 2008).

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### 32 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-4.3	leaf base angle: reflex
8	A-5.1	leaf base shape: without basal extension
9	A-5.1.2	leaf base shape, without basal extension: rounded
10	A-5.2	leaf base shape: with basal extension
11	A-5.2.1	leaf base shape, with basal extension: cordate
12	A-6.1	leaf apex angle: acute
13	A-7.1	leaf apex shape: attenuate (straight)
14	A-8.2	leaf margin: toothed
15	A-8.2.1	leaf margin, toothed: crenate
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-9.2.2	leaf teeth, tooth density: not dense
19	A-9.3.2	leaf teeth, tooth size: big
20	A-9.4.1	leaf teeth, tooth apex shape: acute
21	A-9.5.2	leaf teeth, tooth sinus shape: rounded
22	B-1.2	primary vein framework: palmate
23	B-1.2.1	primary vein framework, palmate: actinodromous
24	B-1.2.1.1	primary vein framework, palmate, actinodromous: basal actinodromous
25	B-2.1	secondary vein framework: 2° veins reach margin
26	B-2.1.1	secondary vein framework, 2° veins reach margin: craspedodromous
27	B-3.2	intramarginal vein: absent
28	B-4.1	intersecondaries: present
29	B-4.2	intersecondaries: absent
30	B-5.1	tertiary vein framework: percurrent
31	B-5.1.1	tertiary vein framework, percurrent: opposite
32	B-5.1.2	tertiary vein framework, percurrent: alternate

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

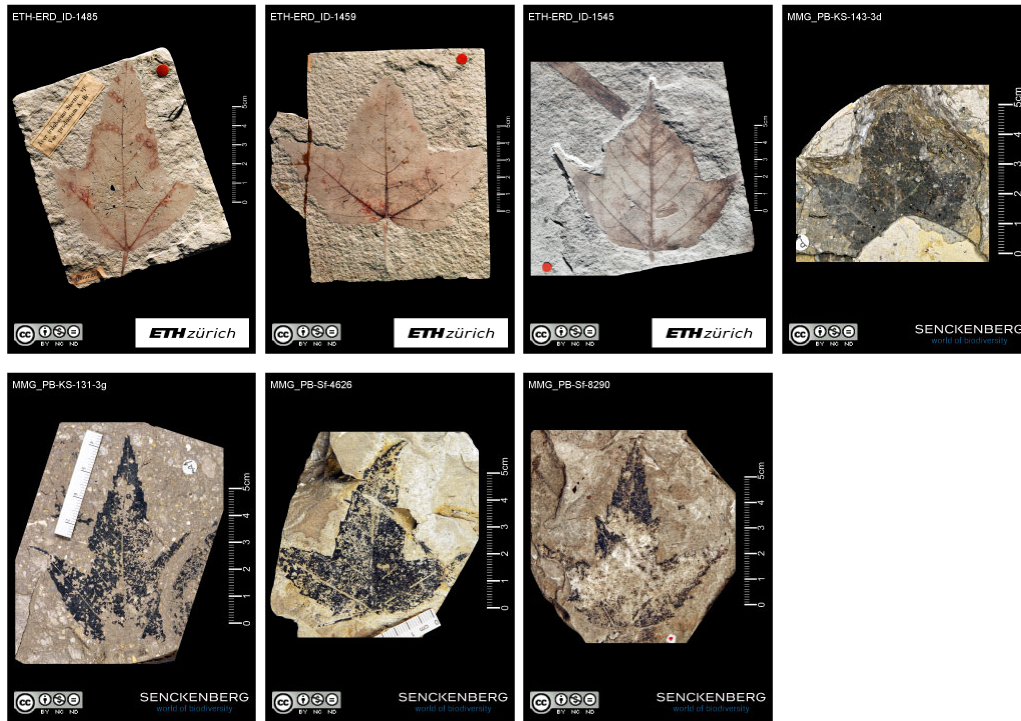
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### ? microscopic leaf traits are stored in *Digiphyll*

coming soon

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## Fossil images



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## References

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