

Leaf description

- **morphology:**
organisation: simple; **petiole:** long petiolate, up to 25 mm long; **shape:** broad elliptic to slightly obovate, 45–100 mm long, 45–60 mm wide; **leaf base:** base angle obtuse, base shape almost straight to slightly rounded; **leaf apex:** apex angle obtuse, apex shape rounded to straight; **margin:** finely toothed, teeth tiny, teeth above secondary veins and inbetween secondaries, slightly oriented towards the leaf apex; tooth apex acute or rounded; sinus acute; **1°-vein framework:** venation pinnate, primary vein stout (2.2 to 1.5 mm broad); **2°-vein framework:** secondaries eucamptodromous, up to 7 pairs of secondaries, usually nearly opposite in the basal while alternate in the apical part of the lamina; basal pair of secondaries forming angles of about 55°–65° with the primary vein, secondary vein angles considerably narrowing towards apically; secondaries running slightly curved across the lamina; **3°-vein framework:** distinct, tertiaries mainly opposite percurrent, occasionally forked percurrent, almost perpendicular to secondaries (3–5 secondaries per cm), course straight to curved, occasionally forking.
 - **cuticle:**
hypostomatic, cuticles very delicate; **adaxial cuticle:** anticlines straight, slender, forming polygonal cells; **abaxial cuticle:** anticlines rather straight to coarsely undulate forming polygonal cells, 10–31 µm across; stomatal complexes anomocytic, irregularly scattered, oval to broadly oval in shape, rather variable in size, 15–36 µm long, 12–23 µm wide, stomatal ledges thickened, front cavity spindle-shaped to narrow elliptic, not reaching the poles; big-sized stomata present, surrounded by concentric epicuticular striation; trichome bases four- to six-celled, 14–25 µm in diameter, scattered on veins and in intercostal areas; trichomes peltate, 42–60 µm across, often not preserved.
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Paleocology

- **habitat:** ?
 - **vegetation type:** mixed mesophytic forest
 - **life form:** tree or shrub
 - **foliage persistence:** ?
 - **flower ecology (pollination):** wind-pollinated (anemophilous)
 - **fruit ecology (dispersal):** wind-dispersed (anemochorous)
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Stratigraphy / Distribution

- **stratigraphy:** Lower Oligocene to Middle Miocene
 - **distribution:** Europe
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Miscellaneous

- **synonyms:** –
- **modern relationship:** Section *Clethroopsis* SPACH. (*A. nitida* (SPACH.) ENDL., *A. nepalensis* D. DON) all of those with pronounced camptodromous venation; *A. cremastogyne* BURKILL.
- **remarks:** Gross-morphologically this alder is well distinct. In Europe alder species with camptodromous secondary venation mainly occur in the Oligocene (Mai 1963).

31 macroscopic leaf traits are stored in *Digiphyll*

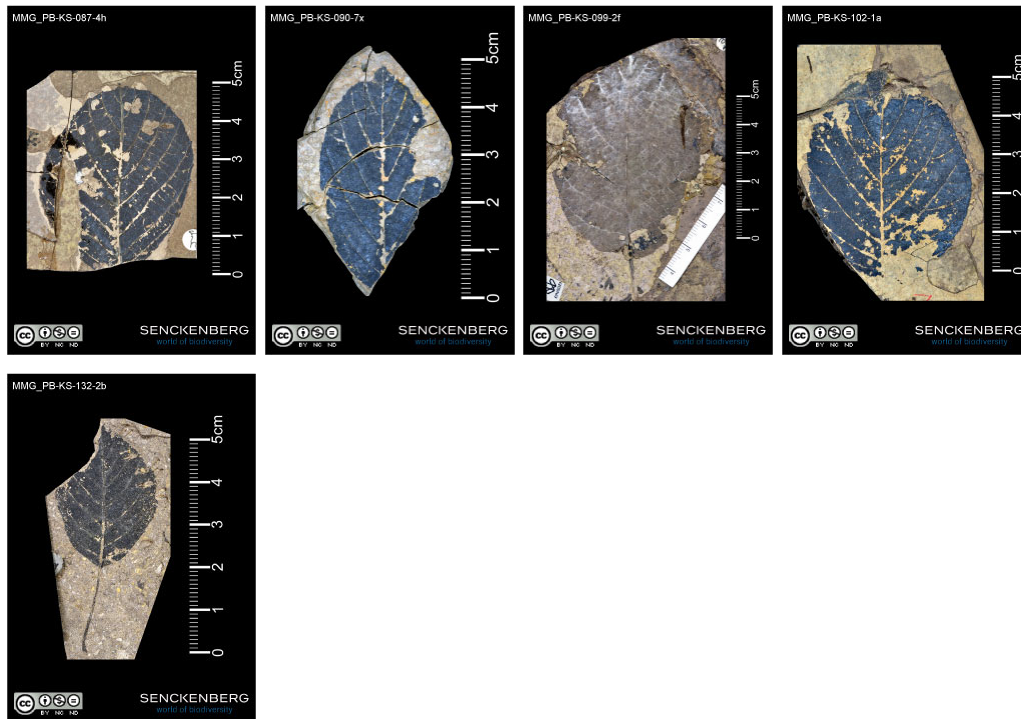
#	trait code	trait: charcters state
1	A-1.2	petiole: present
2	A-1.2.2	petiole, present: long
3	A-2.1	leaf organisation: simple
4	A-3.1	leaf shape: elliptic
5	A-3.2	leaf shape: obovate
6	A-4.2	leaf base angle: obtuse
7	A-5.1	leaf base shape: without basal extension
8	A-5.1.1	leaf base shape, without basal extension: cuneate (straight)
9	A-5.1.2	leaf base shape, without basal extension: rounded
10	A-6.1	leaf apex angle: acute
11	A-6.2	leaf apex angle: obtuse
12	A-7.1	leaf apex shape: attenuate (straight)
13	A-7.3	leaf apex shape: rounded
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-9.2.1	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-9.4.2	leaf teeth, tooth apex shape: rounded
22	A-9.5.1	leaf teeth, tooth sinus shape: acute
23	B-1.1	primary vein framework: pinnate
24	B-2.1	secondary vein framework: 2°-veins reach margin
25	B-2.1.1	secondary vein framework, 2°-veins reach margin: craspedodromous
26	B-2.2	secondary vein framework: 2° veins do not reach margin
27	B-2.2.1	secondary vein framework, 2° veins do not reach margin: eucamptodromous
28	B-3.2	intramarginal vein: absent
29	B-4.2	intersecondaries: absent
30	B-5.1	tertiary vein framework: percurrent
31	B-5.1.1	tertiary vein framework, percurrent: opposite

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

? microscopic leaf traits are stored in *Digiphyll*

comming soon

Fossil images



References

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- **Mai D.H. (1963):** Beiträge zur Kenntnis der Tertiärflora von Seifhennersdorf (Sachsen). – *Jahrbuch Staatliches Museum für Mineralogie und Geologie, Dresden*: 39-114.
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