Acacia fumosa sp. nov. (Fabaceae) from eastern Ethiopia

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The new species *Acacia fumosa* is described and illustrated. It is confined to the Somali National Regional State (Ogaden) in eastern Ethiopia, where it is dominant and widespread on limestone hills in an area of at least 8000 km². *Acacia fumosa* is closely related to *A. ochracea* in south-western Somalia, but differs, for example, in its ash grey, smooth and non-flaking bark, densely pubescent leaves, and pink flowers.

During field work in the Somali National Regional State (Ogaden) in eastern Ethiopia in 2006 and 2007, a distinctive and previously unknown species of *Acacia* was encountered. It belongs to *Acacia* subgen. *Aculeiferum* Vassal, a group of which the majority is today often segregated as a distinct genus, *Senegalia* Raf. (Pedley 1986, Seigler et al. 2006). In the Horn of Africa region there are well over 20 species belonging to this group, but as combinations in *Senegalia* have hardly been made for any of them, I prefer for the time being to treat this new species as an *Acacia*.

Acacia fumosa Thulin sp. nov. (Fig. 1)

Species nova ab A. ochracea Thulin & A. S. Hassan cortice fumoso, laevi, non papyraceo, foliis pari pinnarum persaepe 1, foliolis 2–3.2 mm latis pilis appressis dense pubescentibus, floribus roseis, leguminibus obtuse acutis, nec non seminibus areola minori differt.

Type: Ethiopia, Somali National Regional State, Harerge, 22 km from Qarsonney along road to Kebri Dehar, 6°34'N, 44°36'E, 14 May 2006, Thulin, Kaariye & Wilhelmi 11136, fruiting (ETH holotype, K, UPS isotypes).

Tree, up to 6 m tall, umbrella-shaped, with a large flattened to ± rounded crown; bark ash grey, smooth, not peeling; young branchlets puberulous with short spreading hairs, terete, lenticellate, ± purplish brown, soon becoming greyish; internodes 1–3 cm long. Stipules not spinescent caducous. Prickles solitary or rarely in threes, up to 5 mm long, hooked downwards. Leaves: petioles, rhachides and rhachillae ± densely clothed with spreading hairs; petiole 1–10 mm long, eglandular; pinnae 1 or rarely 2 pairs, the rhachis with a ± round raised apically depressed gland ca

0.4–0.8 mm in diameter between the pinnae of the lowermost pair; rhachillae 15–45 mm long, practically always with a gland between the topmost pair of leaflets or sometimes between the 2 uppermost pairs; leaflets 8–15 pairs per pinna, oblong, 4–10 × 2.0–3.2 mm, densely puberulous with short appressed hairs on both surfaces, oblique at the base, rounded to truncate and sometimes with a minute mucro at the apex, asymmetrical with the midvein closer to the anterior margin and usually with a lateral vein on the posterior side running from the base to above the middle of the blade, lateral veins otherwise ± prominent to obscure; petiolules ca 0.3–0.5 mm long. Inflorescences spicate, 2.5–5.5 × ca 1 cm; axis straw-coloured, glabrous; peduncle 0.4–0.6 cm long, straw-coloured or reddish, glabrous or sparsely puberulous, eglandular. Flowers pink, fading to whitish, sessile or almost so. Calyx ca 2 mm long, ± irregularly 5-lobed, straw-coloured, glabrous. Corolla 3.0–3.5 mm long, 5-lobed, lobes pink, glabrous, except for ciliolate tips. Stamens ca 200; filaments pink, ca 5.0–5.5 mm long, free practically to the base; anthers ca 0.15 × 0.1 mm, mostly with a stipitate gland. Pistil ca 5.5 mm long; ovary shortly stipitate, glabrous. Pods straight, oblong, compressed, dehiscent, ± purplish brown, (40–)70–105 × 14–18 mm, bluntly acute at the apex, gradually narrowed into an up to 10 mm long stipe at the base, minutely pubescent, particularly along margins, sometimes glabrous or almost so towards the apex, with a fairly prominent transverse/reticulate venation, 2–5-seeded. Seeds compressed, subcircular, 8–10 mm in diameter; areole central, 1.5–3 × 1–2 mm, elliptic, open (Fig. 1).

Distribution and habitat

Acacia fumosa is known only from the eastern part of the Somali National Regional State (previously Harerge) in Ethiopia, where it is widespread on limestone hills, roughly within the area 5°39'–6°34'N and 43°34'–44°36'E. Apart

Fig. 1. *Acacia fumosa*. (A) habit (from photograph), (B) leafy twig, $2/3 \times$, (C) pair of leaflets, $7 \times$, (D) portion of leaf showing gland between pinnae, $7 \times$, (E) flowering twig, $2/3 \times$, (F) bud, $10 \times$, (G) flower, $7 \times$, (H), (I) pods, $2/3 \times$, (J) seed, $5 \times$. (B)–(D), (H) from Thulin et al. 11256; (E)–(G), (I), (J) from Thulin et al. 11568. Illustration drawn by Margaret Tebbs.

from the localities near Kebri Dehar and Dhanan, where the material was collected, trees were also studied near Karinga-egy at 5°46'N, 43°51'E and northeast of Kelafo at 5°39'N, 44°09'E. Hundreds of trees were actually inspected on the ground, but with the aid of binoculars tens or probably hundreds of thousands of trees could be seen in the area, where the species is found on practically every hill slope. Almost all these hills are difficult to access, which may explain why the species has remained unnoticed and undescribed until now. It is highly likely that the distribution of the species extends further to the south, where limestone hills at similar altitudes are found also in the Bale Region. However, it was searched for in vain on the limestone hills north of Kebri Dehar, for example at 6°53'N, 44°15'E (630 m a.s.l.).

The species is dominant in *Acacia-Commiphora* bushland on limestone hills at elevations between 280 and 600 m a.s.l. in an area of at least 8000 km². It was also sometimes seen on gypsum hills and plains, but then usually only as scattered trees.

Vernacular name

Cali-ku-yaal (Somali). This name is not unique for the species, but was also recorded for *A. condyloclada* Chiov. northeast of Kebri Dehar, in an area devoid of *A. fumosa*. The same vernacular name has also been recorded for both *A. condyloclada* and *A. caraniana* Chiov. in Somalia (Thulin et al. 1993).

Conservation status

Acacia fumosa has a relatively small known area of distribution, but the vast number of trees present and the lack of any particular threat make it a species of Least Concern.

Taxonomic remarks

Acacia fumosa is closely related to *A. ochracea* Thulin & A. S. Hassan in southwestern Somalia, the two species agreeing well in habit, armature and foliage. Particularly the eglandular petiole and the presence of a prominent gland between the pinnae of the lowermost pair is a rare character, except in *A. fumosa* and *A. ochracea* previously reported only in *A. petrensis* Thulin in northern Somalia and *A. mabrana* Thulin & Al-Gifri in Yemen. The presence of a gland on the rachillae between the topmost leaflets is another unusual character shared between *A. fumosa*, where such glands are almost always present, and *A. ochracea*, where they are often present. *Acacia fumosa* and *A. ochracea* also agree in phenology, in that they do not flower in the rainy season as do other species in the *A. senegal* complex found in Ogaden, such as *A. senegal* (L.) Willd. and *A. circummarginata* Chiov.

The most obvious difference between *A. fumosa* and *A. ochracea* in the field is in the bark, which is ash grey, smooth and not flaking in *A. fumosa*, and yellowish and peeling in flakes in *A. ochracea*. The specific epithet of the new species refers to the colour of the bark. Furthermore, *A. fumosa* differs from *A. ochracea* in the leaves with almost invariably 1 pair of pinnae (not 1–3 pairs), in the 2–3.2 (not 1–2) mm wide leaflets that are densely puberulous with short appressed hairs on both surfaces (not sparsely pubescent to glabrous above), and in the (40–)70–105 (not 40–60) mm long pods that are bluntly acute (not rounded) at the apex. The small (1.5–3 × 1–2 mm), open areoles on the seeds in *A. fumosa* also seem to differ from the larger (ca 10 × 6 mm), almost closed ones in *A. ochracea*, but a single seed only has been seen in the latter, why this needs confirmation. *Acacia fumosa* also differs markedly from *A. ochracea* in the pink (not creamy white) flowers with straw-coloured (not reddish) calyces.

In the pink flowers *A. fumosa* resembles *A. moggii* Thulin & Tardelli, a species only known from central Somalia, and the only other species in the Horn of Africa with distinctly pink flowers. However, *A. moggii* differs radically from *A. fumosa* in its glandular petiole (leaves otherwise eglandular), leaflets only 3–5 pairs per pinna, spikes only up to 18 mm long, and in its entirely glabrous, 1–2-seeded pods. It is therefore not likely to be closely related.

Additional specimens examined

Ethiopia: Somali National Regional State, Harerge: 22 km from Qarsonney along road to Kebri Dehar, 6°34'N, 44°36'E, 18 May 2006, Thulin, Kaariye & Wilhelmi 11256, fruiting (ETH, K, UPS), 3 Feb 2007, Thulin, Kaariye & Wilhelmi 11568, flowering and fruiting (ETH, K, UPS); 15 km southeast of Dhanan, 6°23'N, 43°34'E, 21 May 2006, Thulin, Kaariye & Wilhelmi 11286, fruiting (ETH, K, UPS).

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