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THE RESURRECTION OF *ANCISTROCLADUS PACHYRRHACHIS* (ANCISTROCLADACEAE) FROM LIBERIA

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Ancistrocladus pachyrrhachis (Ancistrocladaceae), described in 1950, is resurrected and compared with *A. barteri*, the species with which it was synonymised in 2005. The fruits of *Ancistrocladus barteri* and *A. pachyrrhachis* are described and illustrated here for the first time, and a full description of the species is provided, as is a key to the three West African species. *Ancistrocladus pachyrrhachis* is assessed as Critically Endangered.

Keywords. Ancistrocladaceae, coastal forest, liana, Liberia, West Africa.
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Introduction

Ancistrocladus Wall. (Ancistrocladaceae) is a genus of c.16 species of lianas found in tropical Africa and Asia; it is also the only genus in its family (Gereau & Walters, 2022). Before 1950, only two species were known from West Africa, from Senegal to Ghana: *Ancistrocladus abbreviatus* Airy Shaw and *A. barteri* Scott-Elliot. In that year, *Ancistrocladus pachyrrhachis* Airy Shaw was described from two specimens collected near Monrovia in Liberia (Airy Shaw, 1950). The two specimens were collected from the same plant by J. T. Baldwin in 1947 (*Baldwin* 5839) and 1948 (*Baldwin* 10984). In the protologue, Airy Shaw (1950) separated the new species from *Ancistrocladus barteri*. Later publications confirmed that *Ancistrocladus pachyrrhachis* and *A. barteri* are different species (Keay, 1954; Cheek, 2000). However, in the revision of the genus in 2005, *Ancistrocladus pachyrrhachis* was made a synonym of *A. barteri* (Taylor *et al.*, 2005). In May 2023, the first author discovered in low coastal forest near Bassa Point in Liberia a flowering and fruiting specimen of *Ancistrocladus* (*Jongkind* 14904) that prompted a reconsideration of the status of *A. pachyrrhachis*.

Materials and methods

Herbarium specimens from BR, K and WAG (herbarium codes from Thiers, continuously updated) were studied, and field observations were made in Liberia and Guinea. The conservation assessment was made following the *IUCN Red List Categories and Criteria* (IUCN, 2012).

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Taxonomic treatment

New material (*Jongkind* 14904) with flowers and fruit match the type of *Ancistrocladus pachyrrhachis* (a full description of which is given below) but show that it is clearly different from *A. barteri*, the species with which it was synonymised in 2005. The three West African species of *Ancistrocladus* can be separated based on several characters (see **Table**, **Figures** 1, 2).

Ancistrocladus pachyrrhachis Airy Shaw, Kew Bull. 5(1): 149 (1950); Novon 7(3): 244 (1997). – Type: Liberia, Montserrado County, near Monrovia, fl., 30 v 1947, *Baldwin* 5839 (lectotype K [K000044667], isolectotypes K [K000044668, K000044669, K000044670]).
Ancistrocladus barteri Scott-Elliot, pro. parte, Ann. Missouri Bot. Gard. 92(3): 375 (2005).

Large glabrous liana climbing with hooks. *Leaves* alternate, with a few conspicuous glands (0.2–0.4 mm in diameter) below and many inconspicuous small glands on both surfaces; larger leaves on slow-growing stems oblanceolate, up to 53 × 8.5 cm, gradually narrowing to the base and ending in a short pseudo-petiole, with up to 30 pairs of secondary veins and with a conspicuous, almost straight, intramarginal vein for most of its length; leaves on the faster-growing climbing shoots (much) smaller, especially so near the top of these shoots, and sessile with a rounded to cordate base; leaves on the, sterile or flowering, spur shoots also smaller than the first but narrowing into a very short pseudo-petiole, not rounded or cordate at base. *Inflorescences* usually between the leaves on spur shoots, rarely on leafless spur shoots, paniculate, lax, branches up to 35 cm long, already flowering when the inflorescence is still small and expanding. *Flowers*, sepals unequal, suborbicular to oblong, 5–9 × 4.5–5.5 mm, green, rounded at top, recumbent in open flower, imbricate in bud, external sepals with several conspicuous glands on the outside; petals 5, obovate-oblong, 9–11 × 3.5–5 mm, pinkish to red, connected at the base, convolute in bud, corolla dropping in one piece and with the stamens attached; stamens 10, 5–7 mm long, the ones between the petals slightly longer and more bending out than the ones opposite the petals, anthers c.1 mm long; pistil with a smooth ovary with 3 free styles on top, style c.7 mm long. *Fruit* brown, with 5 accrescent, wing-like, thin woody sepals, conspicuously different in length, shortest wing 0.6–2 × 0.5–0.9 cm, largest wing 3–4 × 1.5–2 cm. **Figures** 1, 2.

Distribution. Liberia, coastal area of Messerado County and Grand Bassa County.

Habitat and ecology. Endemic to low coastal forest on deep sandy soil. This coastal vegetation type contains several endemic species and stretches from Buchanan in the east to Sherbro Island in Sierra Leone in the west (Jongkind & Breteler, 2020; Jongkind, 2023).

Proposed IUCN conservation category. *Ancistrocladus pachyrrhachis* is known from two locations, of which only one survives today. The location “near Monrovia” where the species was collected by J. T. Baldwin in 1947 and 1948 is now part of the city of Monrovia. The first author has visited the coastal vegetation between Monrovia and Buchanan on several

Table. Differences between *Ancistrocladus abbreviatus*, *A. barteri* and *A. pachyrrhachis*

Characteristic	*A. abbreviatus*	*A. barteri*	*A. pachyrrhachis*
Larger leaves	Intramarginal nerve clearly looping or absent	Intramarginal nerve clearly looping or absent	Intramarginal nerve almost straight
Inflorescence	Congested, to 5 cm long	15–27 cm long, with elongate branches	8–40 cm long, with elongate branches
Sepals in open flower	Bending shortly outwards	Almost straight, concave	Bending outwards like a spring
Stamen, length	Dimorphic: the shorter, 0.8–1.2 mm; the longer, 1.2–2 mm	Dimorphic: the shorter, 1.2–2 mm; the longer, 2–4 mm	All about the same length, 5–7 mm
Fruit, largest wing	c.0.8 × 0.5 cm (shorter than nut), woody	4.5–5.3 × 1–1.4 cm, coriaceous	3–4 × 1.5–2 cm, thin woody

locations in recent years, but this species was seen in only one, relatively small, area near Bassa Point. The exact number of individuals in this area is substantially fewer than 50. With a very small population size, *Ancistrocladus pachyrrhachis* is proposed as Critically Endangered, CR D (IUCN, 2012).

Notes. Gereau (1997) effectively lectotypified the four sheets of Baldwin 5839 in the herbarium at K: sheet 1 lectotype and sheets 2–4 isolectotypes (ICN Article 7.11, Turland *et al.*, 2018).

This new collection (*Jongkind* 14904) was made c.50 km to the southeast from the type locality of *Ancistrocladus pachyrrhachis*, and like the two type collections, also on sandy soil not far from the coast. At the new location, *Ancistrocladus pachyrrhachis* was seen several times scrambling and climbing in low coastal forest in an area of about 100 m in diameter. It is not clear if this was one single old plant or a small population. No seedlings were found.

Additional specimens examined. Liberia. **Montserrado County**: near Monrovia, fl., 17 i 1948, *Baldwin* 10984 (K). Grand Bassa County: near Bassa Point, 6°06.44'N, 10°21.43'W, 20 m, fl., fr., 12 v 2023, *Jongkind* 14904 (BR).

Key to West African species of *Ancistrocladus*

1a. Sepals in open flower straight; longest fruit wing > 3 times as long as wide. __ *A. barteri*

1b. Sepals in open flower bending outwards; longest fruit wing < 3 times as long as wide. _____ 2

2a. Stamens up to 2 mm long; wings of fruit shorter than nut. _____ *A. abbreviatus*

2b. Stamens 5 mm or longer; wings of fruit clearly longer than nut. _____ *A. pachyrrhachis*

Figure 1. *Ancistrocladus pachyrrhachis*: A, fast-growing climbing shoot with small adult leaves; B, close-up of growing climbing shoot; C, slow-growing shoot (arising from a creeping branch) with adult and immature leaves; D, large leaf of slow-growing shoot. Photographs of *Jongkind* 14904 (BR), taken by Carel Jongkind.

Figure 2. *Ancistrocladus abbreviatus* subsp. *abbreviatus*: A, flower; B, fruit. *Ancistrocladus barteri*: C, flower; D, fruit. *Ancistrocladus pachyrrhachis*: E, flower; F, fruit. Photographs of: A, *Kanu* 61; B, *Burgt* 2094; C, *Haba* 1096; E and F, *Jongkind* 14904. D, Field photograph from Forécariah Prefecture, Guinea (no voucher). Photographs: A–D, Xander van der Burgt; E and F, Carel Jongkind.

Discussion

In earlier publications on the three West African species of *Ancistrocladus* (Airy Shaw, 1950; Keay, 1954; Cheek, 2000; Taylor *et al.*, 2005), two characters were used to separate these species that are not always very reliable for the identification: the length of the inflorescence, and the shape and size of the leaves. In several *Ancistrocladus* species, the first flowers already open while the inflorescence is still small and expanding; this often makes the length of the inflorescence of a specimen an unreliable character for identification. The leaf shape and size are also difficult to use because the leaves of a single fully grown plant of *Ancistrocladus* can be very different depending on the kind of shoot they are on (see **Figure 1**). The leaves of slow-growing branches (see **Figure 1C,D**) are usually much larger and differ in shape from the leaves on the short shoots with the inflorescences, and again from the leaves on the fast-growing climbing branches (see **Figure 1A,B**). Often in herbarium specimens, not all the different leaf shapes and sizes are included; this makes it hard to compare specimens and identify them based on the leaves. This does not mean that these characters are not taxonomical important; we too are using leaf characters here. The almost straight intramarginal vein in the larger leaves of *Ancistrocladus pachyrrhachis* (see **Figure 1D**), a character used by Airy Shaw (1950) and included in the *Ancistrocladus* key in the Flora of West Tropical Africa (Keay, 1954), is not seen in any of the larger leaves of herbarium specimens of the other, more common, *Ancistrocladus* species in West Africa.

In earlier studies of the three West African species of *Ancistrocladus* (Airy Shaw, 1950; Keay, 1954; Cheek, 2000; Taylor *et al.*, 2005), only the fruits of *A. abbreviatus* were available for examination. In the present study, we have also seen the fruits of *Ancistrocladus barteri*, collected in Guinea-Bissau by Malaisse (*Malaisse* 14718; BR0000017379991), and the fruits of *A. pachyrrhachis*; and all three are clearly different.

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