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REGULAR PAPER

New taxa in *Crossandrella*, *Dischistocalyx* and *Ascotheca* (Acanthaceae) from Equatorial Guinea

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Background and aims – Recent collecting in Equatorial Guinea, a country with incompletely documented biodiversity, resulted in an ample collection of the plant family Acanthaceae. Identifications resulted in the discovery of novelties, presented here.
Methods – Specimens from BRLU, BR, BM, P and K were investigated. Critical point-dried pollen was observed in the SEM.
Results – Three new taxa are described from Equatorial Guinea, two new species in the genera *Crossandrella* and *Dischistocalyx* and one new variety in *Ascotheca*. Distribution maps and illustrations for the two new species are provided. Pollen morphology adds evidence to distinguish between the three species of *Crossandrella*.

Key words – Cristal Mountains, *Crossandrella cristalensis*, *Dischistocalyx minimus*, *Ascotheca paucinervia* var. *minor*, Equatorial Guinea.

INTRODUCTION

An ample collection of Acanthaceae, gathered in Equatorial Guinea, in the northern Cristal Mountains, by the second author and his field collaborators has been studied at BR. The biodiversity of Equatorial Guinea is incompletely documented. It is not surprising therefore that, among that collection, three new taxa have been discovered in the genera *Crossandrella*, *Dischistocalyx* and *Ascotheca.*

The novelties are formally described and illustrated here, and their distinguishing features are discussed. A key to the three existing *Crossandrella* species is provided with a SEM study of pollen for *C. cristalensis*, the equatoguinean novelty, and *C. adamii* Heine from West Africa, including a comparison to a pollen study of *C. dusenii* by Furness (1990). A key to the two new varieties of *Ascotheca paucinervia* is also given.

MATERIAL AND METHODS

The collections from Equatorial Guinea at BRLU as well as material from BR, BM, P, and K were studied, including the available types. The vegetative characters of the specimens were measured on the herbarium sheets; the floral parts were boiled in water and measured under a binocular lens Wild M5A microscope.

The anthers of the equatoguinean *Crossandrella* and of *Crossandrella adamii* Heine from West Africa were critical-point dried and five pollen grains were examined under a SEM Jeol 5800 LV and compared to this of *C. dusenii* (Lindau) C.B.Clarke studied by Furness (1990); the results of the palynological study of *C. adamii* by Van Campo (1978) under optical microscope were also considered.

Phytogeographical distributions are mentioned following White (1983).

Environmental factors in the collecting area

Most of the specimens cited in this paper were collected in the Equatoguinean part of the Cristal Mountains.

Climate – The area explored by Senterre and co-workers is located in the Catena of Niefang, i.e. the northern part of the Cristal Range, lying approximately N-S in the middle of Equatorial Guinea. Two drought periods occur, one from June to mid-September (“grande saison sèche”) and the other from December to mid-January (“petite saison sèche”). The mean rainfall amounts to 2000 mm/year at the ECOFAC station of Monte Alen in the centre of the Catena at an altitude of 700 m (Moca, data collected from 1995 to 1999 by ECOFAC, the ‘Conservation and Sustainable use of Forest Ecosystems of Central Africa’ project). The mean monthly temperature varies between 19.6°C and 21°C during the whole year while the daily variation is more important. Those values vary enor-

mously depending on continentality and altitude, the latter ranging between 300 and 1300 m. From West to East, the Catena of Niefang is composed of a lowland zone at an altitude of 300 m, at the level of the Rio Uolo river, further East by a range of hills of 450–500 m altitude; then the relief rises up to 900–1300 m before decreasing to 500–700 m in the inner lowlands. These variations in the altitude possibly play an important role in the richness of that region in rare species (Senterre 2005). The region falls within one of the glacial rainforest refuges identified by Sosef (1994) and its vegetation shows strong relationships with that of similar elevated regions from southern Cameroon, i.e. Bipindi, and northern Gabon, i.e. the Gabonese part of the Cristal Mountains. These two regions should be furthermore investigated, for some of the new species presented in this study have already been found there.

Vegetation – The lowlands forests (valleys bottoms) in the western part of the region are characterised by numerous Scytopetalaceae and Irvingiaceae (*Oubanguia laurifolia*, *Scytopetalum klaineanum*, *Irvingia gabonensis*, *Desbordesia glaucescens*), whereas in the eastern part they shelter mainly Caesalpiniaceae and *Engomegoma gordonii* (Olacaceae) (Senterre et al. 2004).

The submontane forests, above an altitude of 700 m, are characterised by the presence of numerous Clusiaceae (*Garcinia conrauana*, *Pentadesma grandifolia*, *Allanblackia gabonensis*) and dominated by large Burseraceae (*Dacryodes klaineana*, *Santiria trimera*) (Senterre 2005).

DESCRIPTION AND DISCUSSION OF THE NEW TAXA

1. *Crossandrella*

When the Flora of Gabon – the most recent treatment of Acanthaceae for Central Africa (Heine 1966) – was published, *Crossandrella* was still a monotypic genus, its unique species, *C. dusenii*, being distributed from Nigeria to Uganda and Tanzania (with the largest amount of collections from D.R.Congo). In 1971, Heine described a new species from the Nimba mountains in Liberia, *C. adamii* (*Adam* 24993, holotype P), considering it as a vicariant taxon of *C. dusenii*. That new species was a further illustration of the occurrence, in West Africa, of a number of vicariant taxa of the species growing East of the Dahomey interval. *C. adamii* is still known only from the holotype.

Table 1 – Comparative features of pollen in the three species of *Crossandrella*.

		C. cristalensis	***C. dusenii*** (Furness 1990)	***C. adamii***
grains	Length/width (µm)	57–72.9 × 56–58.8	Length (95–)109.5(–120)	46.6–55.7 × 34–35.6 [Van Campo 1978: c. 80 × 37]
	P/E	1.17–1.24 (subprolate)	1.7–2.73 (prolate to perprolate)	1.37–1.5 (prolate) [Van Campo 1978: 2.11 (perprolate)]
aperture	shape	fusiform to linear (harmomegathic changes)	a simple slit	linear
	size (µm)	47–57 × 15–27	as long as the grain	43.4–47.3 × 2.57– 3.84
	floor membrane	transversely folded or crumpled	granulate	transversely weakly folded [Van Campo 1978: linear-fusiform, c. 66 × 5 µm, with three additional alternate pseudocolpi as long as the length of the grain.]
exine ornamentation	angles	tectate foveolate (lumina > 1 µm), with elliptic lumina	tectate perforate everywhere on the grain (circular perforations < 1 µm)	not perforate, smooth, except some perforations on the edges [imperforate band obviously confused with pseudocolpi under light microscope by Van Campo]
	apertural faces	tectate perforate (perforations: up to 1 µm) with circular perforations		tectate-perforate, showing circular perforations (< 1µm) everywhere with an irregular row of larger perforations at the margins
pole ornamentation	central depression	baculate (baculae fusing in fascicles or free)	granulate or perforate	baculate (baculae fusing in fascicles), shallower and smaller than in *C. cristalensis*; fascicles of baculae separated by larger spaces than in *C. cristalensis*
	margin	smooth, imperforate, raised	sparsely and randomly perforate, less conspicuous than in *C. cristalensis*.	smooth with very scattered perforations, raised, broader than in *C. cristalensis*.

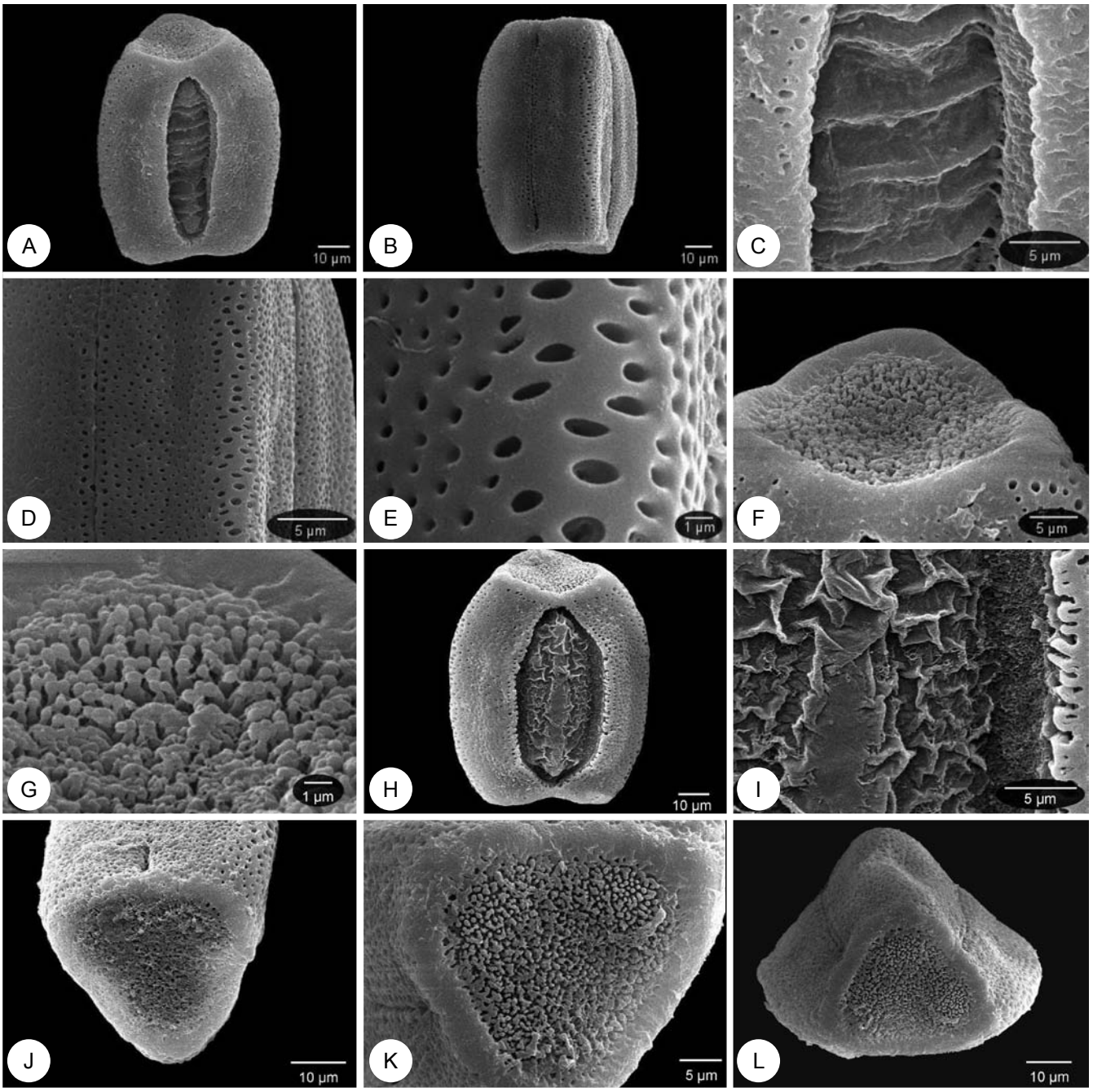

Figure 1 – *Crossandrella cristalensis*, pollen grain: A, apertural view (opened colpus); B, mesocolpial view and two (closed) colpi (other grain); C, detail of the aperture showing the transversely wrinkled floor-membrane; D, detail of the mesocolpium showing the ornamentation of the tectum, transversely elliptic lumina (more than 1 µm, foveolate tectum) on the angles and circular perforations (up to 1 µm, perforate tectum) on the apertural faces; E, detail of the angle of the grain, showing the lumina; F, polar view showing the smooth protruding imperforate margin and the central baculate depression; G, detail of F, showing the mixture of fairly free baculae and fascicles of fused baculae; H, apertural view of another grain with a wider colpus; I, detail of the aperture showing the crumpled floor-membrane; J, K, L, polar views showing the triangular amb of the grain (*Senterre & Obiang* 4139).

The specimens of *Crossandrella* from Equatorial Guinea are in many respects quite distinct from *C. dusenii* and *C. adamii*: they differ from *Crossandrella adamii* by the characters of the bracts, bracteoles, corolla and pollen, as confirmedwhen examining the holotype of the latter in Paris (P); from *C. dusenii* by the largest dimensions of all their parts, by the shape of the bracteoles, a different position of the bracts, by other characters of the inflorescence and by the pollen.

Distinguishing features and description in *Crossandrella*

Morphology – *C. cristalensis* differs from *C. adamii* mainly by its longer corolla (18 mm vs. 15 mm), by its corolla tube

Key to *Crossandrella* species

1. Bracteoles oblanceolate, rounded at the apex, 9–12 × 3–4 mm; plant reaching 60 cm high; stem pubescent on two opposed rows; lamina of the leaves 8–26 × 4–6 cm, ratio (2.5–)3–5:1.....*Crossandrella dusenii*
1. Bracteoles elliptic to obovate, rounded to subobtuse or acute-acuminate at the apex, broader than 5 mm; plants 1–1.5 m high; stem glabrous; lamina of the leaves larger, ratio 2–3:1 2
2. Bracteoles elliptic to obovate, 11 × 7 mm, rounded to subobtuse and not mucronate at the tip, slightly puberulent at the base and at the margin, with minute scattered sessile glands outside; bracts reflexed downwards; corolla 15 mm long, dirty dark mauve; tube glabrous, except a few glandular hairs at the constriction point; lip retuse-emarginate; lamina of the leaves 18–20 × 6–8 cm; plant endemic to the Nimba mountains of Liberia.....*Crossandrella adamii*
2. Bracteoles elliptic, 16 × 9.5 mm, acute to shortly acuminate and usually mucronate at the tip, puberulent all over and provided with numerous minute sessile glands outside; bracts spreading horizontally; corolla 18 mm long, whitish with throat and base of lip brilliant deep blue-violet with a central white spot; tube entirely provided with short glandular hairs; lip truncate; lamina of the leaves 16–28.5 × 4.5–9.5 cm; plant endemic to the Cristal mountains of Equatorial Guinea..*Crossandrella cristalensis*

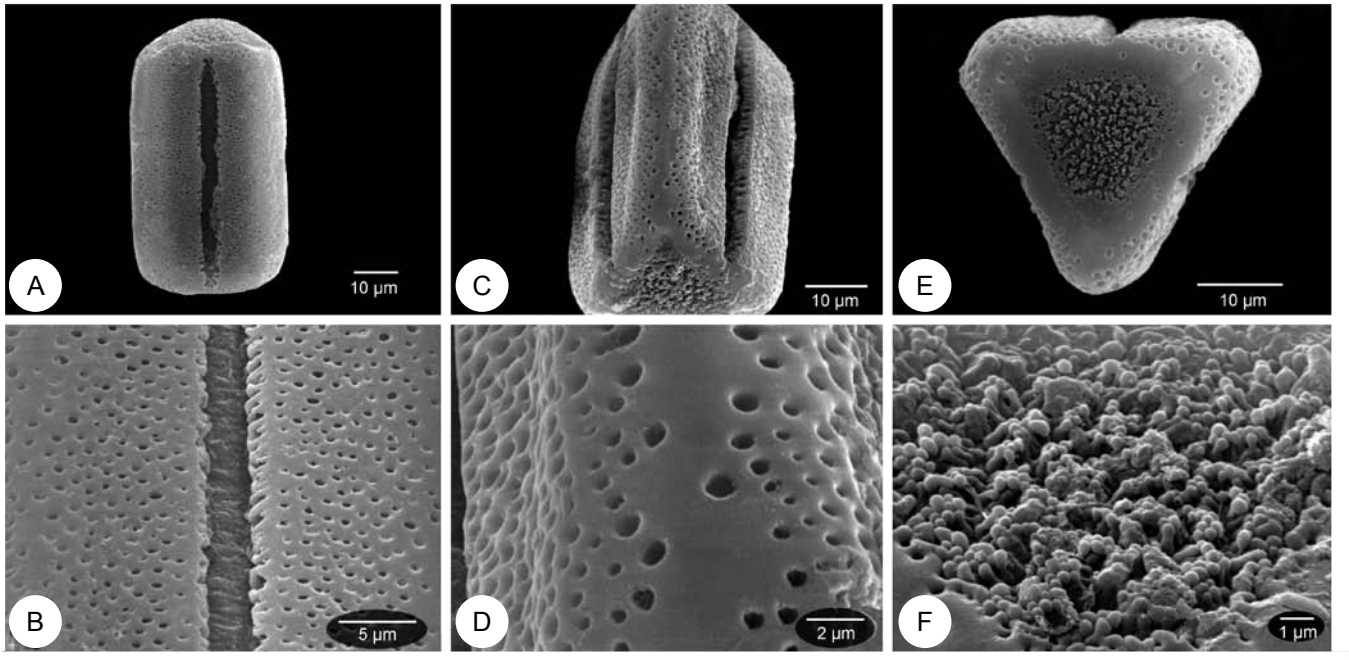

Figure 2 – *Crossandrella adamii*, pollen grain: A, apertural view showing the narrow colpus; B, detail of the colpus showing the transversely weakly wrinkled floor-membrane; C, mesocolpial view showing the smooth, almost imperforate band marking the angle of the grain; D, detail of the angle of the grain showing the few circular perforations, larger than those of the apertural faces; E, polar view showing the triangular amb of the grain, with a slightly raised smooth margin provided with scattered perforations and a central baculate depression; F, detail showing the fascicles of fused baculae (*Adam* 24993).

which is glandular and not glabrous outside (except some short glandular hairs at the narrower point of the tube) as in *C. adamii.* The corolla ends in a truncate, not retuse-emarginate lip, by the bracts spreading and by the bracteoles which are larger (16 × 9.5 mm against 9–11 × 7 mm) and more puberulent, not only glandular and scarcely puberulent (very minute sessile glands are found in both species, but are very scarce in the second taxon) and acute to acuminate, not rounded or obtuse at the apex. The other differences are described in the Latin diagnosis; apart from this, the two species are rather similar in robustness.

Crossandrella dusenii is less robust than *C. cristalensis*; it differs from the latter by its smaller leaves, bracts and flowers; by its stem provided with two opposite rows of short hairs, not glabrous; by its narrower bracts, always pointed downwards and pressed against the stem; by its smaller and narrower bracteoles rounded or widely obtuse at the tip and not mucronate, and by the retuse lip of the corolla.

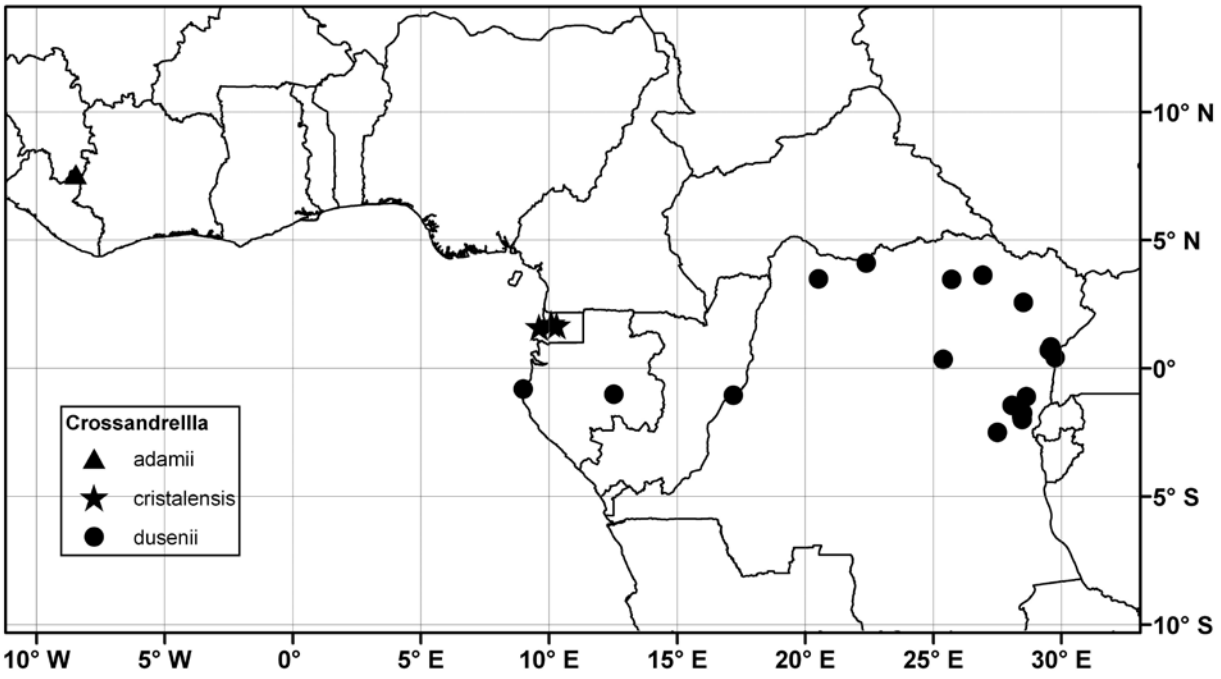

Figure 3 – *Crossandrella adamii*, *C. cristalensis* and *C. dusenii*. Distribution map (for *C. dusenii*, map complete only for D.R.Congo, see text).

In addition, at the end of the flowering period, there is one pair of sterile bracts between the fertile pairs in *C. cristalensis*, while in the two other species all the nodes of the spike are flower-bearing, there are no sterile bracts.

Pollen – In the general outline, the pollen of *Crossandrella cristalensis* (fig. 1) matches the one of *Crossandrella dusenii*, studied by Furness (1990), as well as the one of *Crossandrella adamii*, studied here under the SEM (fig. 2) and formerly by Van Campo under optical microscope (1978), but is, however, quite distinct in several details.

The differences between the pollen of *C. cristalensis*, *C. dusenii* and *C. adamii* are summarised in table 1.

Chorology – The distribution of the three species is mapped in figure 3. Heine's map of the two existing *Crossandrella* species (Heine 1971: 648) overlooked all the specimens of *C. dusenii* at BR, except two from eastern Congo and one from the north of the "District Forestier central". Our map (fig. 3) corrects that omission; however, for *C. dusenii*, it is incomplete outside D.R.Congo.

One specimen of *C. dusenii* from Rio Muni (*Tessmann* 967, checked at K) unfortunately without locality, cited in 1971 by Heine, is the only collection of that species in Equatorial Guinea**.**

Crossandrella cristalensis Champl. & Senterre **sp. nov.**

A *Crossandrella adamii* propter folia majora, bracteas patulas nec deflexas, bracteolas maiores breve puberulentes apice acutas ad breve acuminatas et mucronatas nec rotundatas vel obtusas, denique propter internodia medio sterilium bractearum pare munita et corollam paullo maiorem tubo extus omnino glanduloso nec fere omnino glabro labioque truncato nec retuso bene differt; a *Crossandrella dusenii* propter habitum robustiorem, caulem glabram nec pilis in duo seriebus oppositis munitam, folia maiora, bracteas largiores patulas nec deflexas, bracteolas maiores apice acutas ad breve acuminatas nec rotundatas et corollam maiorem distinguitur; a duabus speciebus propter externorum staminum filamentarum liberam partem glabram et externas antheras solum ad fissuram pubescentes, deinde propter pollinis grana valde distincta bene differt. – Type: Equatorial Guinea, Monte Alen National Parc, 8.5 km E of "Cabana de Mosumo", alt. 820 m, Jul. 2003, *Senterre & Obiang* 4139, fl (holo-: BRLU; iso-: BR, K).

Suffrutescent unbranched plant about 1.4 m high, growing in patches of about ten individuals. Stem glabrous, green, purple-spotted at the nodes and in the lower part of the internodes; leaves glabrous, elliptic, 16–28.5 × 4.5–9.5 cm, attenuate at the base, acuminate at the apex, medium green above, light green below, often more or less purple tinged; 17–21 lateral nerves, depressed on the upper face, prominent on the lower face, inserted almost at right angle of the midrib; petiole 3–11 cm long, glabrous, purple-spotted at the base . Inflorescence a spike, 11–24 × 3 cm, with spreading flowers, axis retrorsely and densely puberulent, with usually one pair of sterile bracts between each of the flowering pairs at the end of the flowering period; bracts ovate-elliptic, acute and mucronate at the tip, 8 × 6 mm, minutely puberulent outside, spreading horizontally; bracteoles elliptic, acute to shortly acuminate and usually mucronate at the tip, 16 × 9.5 mm, pale green, violet in the upper half, minutely puberulent and with numerous minute sessile glands outside, 7–8-parallelinerved. Calyx chartaceous at the base, posticous and anticous lobes 14 × 4 mm, 7–8-parallelinerved, the anticous bifid for 4 mm long, both larger than the trinerved lateral lobes 9 × 1 mm, all shortly ciliate at margin and otherwise glabrous.

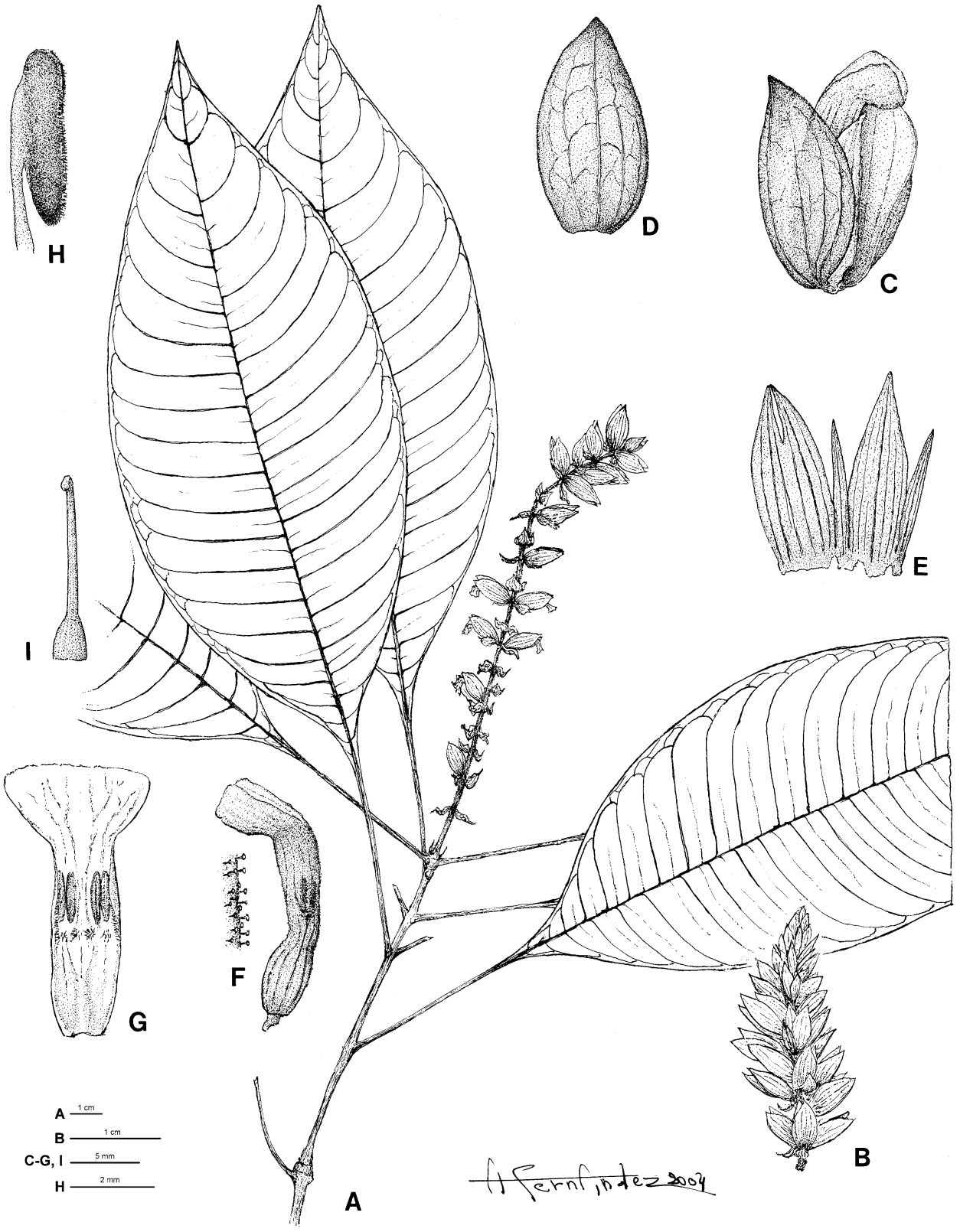

Figure 4 – *Crossandrella cristalensis*: A, habit, spike at the end of anthesis; B, young spike; C, flower enclosed by the bracteoles; D, bracteole, dorsal view; E, opened calyx showing the very unequal lobes, the anterior one bifid at the tip; F, corolla, lateral view, with enlarged detail showing the glandular hairs covering the outside of the tube; G, opened corolla showing the subsessile stamens and the truncate lip; H, detail of the monothecous anther; I, pistil (A & C–I, *Senterre & Obiang* 4139; B, *Senterre, Obiang & Ngomo* 1755). Drawn by A. Fernandez.

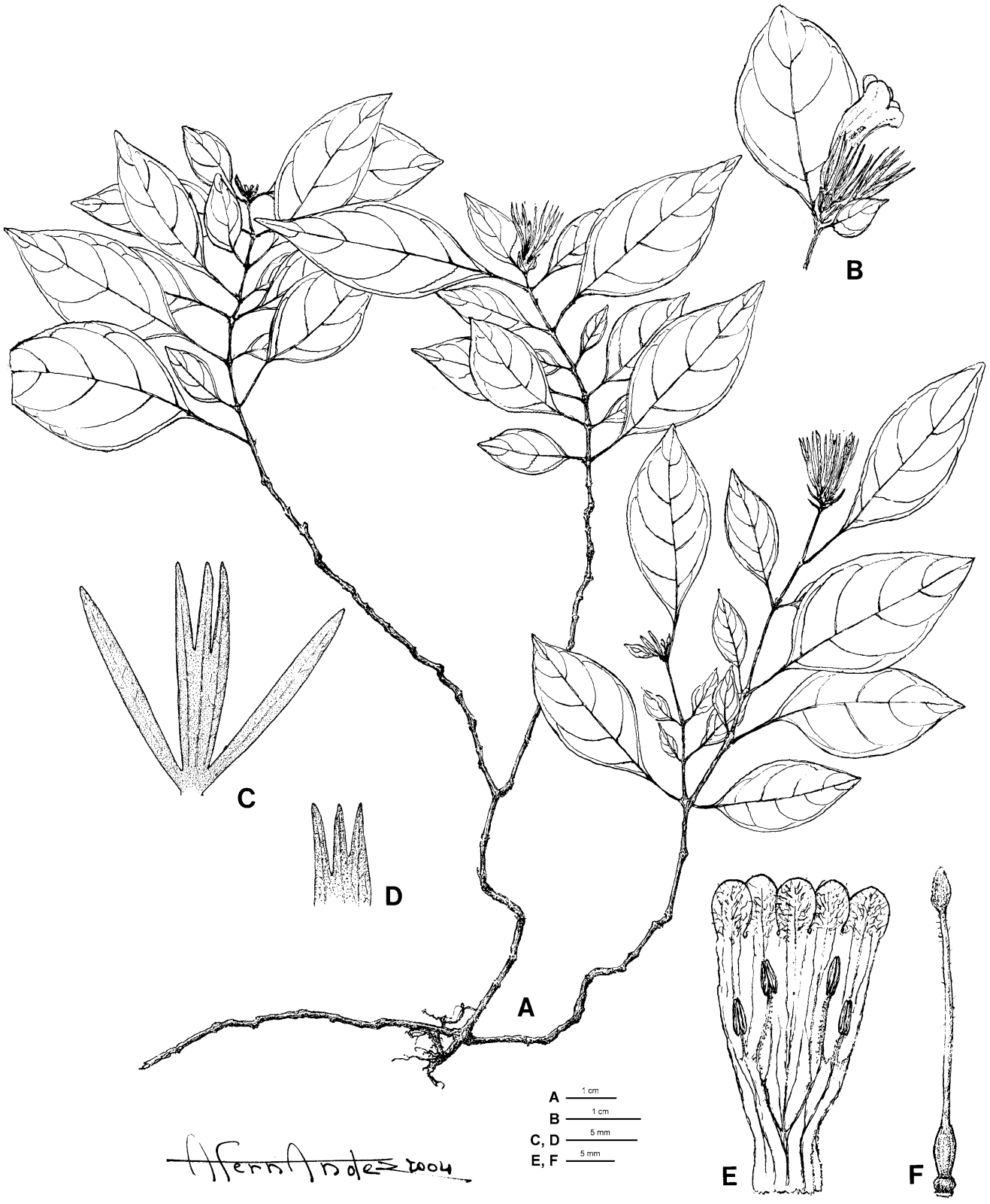

Figure 5 – *Dischistocalyx minimus*: A, habit (× 2/3), B, inflorescence (× 1); C, opened calyx (× 2); D, tip of the posterior (adaxial) lobe (× 2); E, opened corolla (× 1 1/2), F, pistil, showing the elliptic-spathulate stigma (× 1 1/2) (A & C–F, *Senterre & Obiang* 4040; B, *Senterre & Ngomo* 19). Drawn by A. Fernandez.

Corolla 18 mm long, pale yellow green at the base, dark blue mauve at the throat, the lip whitish except at the base which dark blue-mauve with a central white spot; tube 13 mm long, provided with very short glandular hairs outside, inflated and 4 mm wide below the insertion point of stamens, inside with a club-shaped patch of papillae surrounded by a line of short stiff hairs from between to above the anthers and a row of hairs on the connate part of each filament of stamens; lip 5 × 6.5–7 mm, trapezoidal, truncate and somewhat erose at the tip. Stamens filament with a free part 1 mm long, glabrous in the outer stamens, ciliate at the tip in the inner ones, and a connate part provided with a 2.5 mm long row of rather long straight hairs; anthers 4 mm long, the outer ones glabrous but shortly ciliate along the opening line, the inner ones similar except an additional row of hairs along the innermost side of the connective; style glabrous, 6 mm long, stigma inconspicuous; ovary glabrous, 2 mm long; disk cupuliform, irregular, 0.5–0.7 mm high. Capsules and seeds only seen immature. Fig. 4.

Distribution – Species endemic of the Guineo-Congolian centre of endemism, only recorded from Monte Alen National Park in Equatorial Guinea. Fig. 3.

Other collections examined – **Equatorial Guinea**: Parc National de Monte Alen, Mosumo, confluence du Rio Laña et du Rio Mbini, Jan. 1998, *Obama & Lejoly* 686, fl (BRLU); SW du Parc National de Monte Alen, 2 km NE du site de traversée du Rio Uolo sur le chemin des cataractes, alt. 270 m, Jan. 2002, *Senterre, Obiang & Ngomo* 1755, buds (BRLU).

Habitat – Rainforest and submontane rainforest on rocky wet soil and steep slopes, alt. 270–820 m.

2. *Dischistocalyx*

Dischistocalyx is an ill-known genus: the interpretation of the variability of characters and the assessment of valuable diagnostic features gets complicated by the scarcity of the material for several taxa and the destruction of type-material during World War II in Berlin (some isotypes or isosyntypes have although been seen in BM, K and P). As Heine (1966) pointed out, the taxonomy of *Dischistocalyx* remains unclear and needs a monographic revision.

Taking Heine's work into account, eleven species were remaining in *Dischistocalyx* at the time of the Flora of Gabon (1966), half of them being poorly known. The three most recently described species, *D. champluvieranus*, *D. lithicola* and *D. alternifolius* (which could be only a form or variety of *D. champluvieranus*) are native to Equatorial Guinea (Lejoly & Lisowski 1999, Champluvier et al. 2003). One of the *Dischistocalyx* species collected by Senterre et al. in Equatorial Guinea does not match any of the fourteen previously recognised species. A new species has to be described.

Dischistocalyx minimus Champl. & Senterre **sp. nov.**

Dischistocalycis lithicolae et *D. champluvierani* proximus sed propter folia minora, caules tortuosas nodiis crassis valde approximatis, bracteas carentes verosimiliter caducas, corollam albam minorem cum lobis omnino pubescentis denique propter stylum sparsim hispidum bene differt; a *D. strobilino* propter habitum foliaque valde parviores, bracteas carentes, calycis lobos pilorum glandulosum carentes, staminorum internorum filamenta glandulosa nec glabra stylumque pilosum nec glabrum distinguitur. – Type: Guinée équatoriale, SE du Parc National de Monte Alen, sur le transect Ecofac de Nkumékié, alt. 600 m, Feb. 2001, *Senterre & Ngomo* 19, fl (holo-: BRLU).

Small suffrutex 10–20 cm high, stoloniferous, mainly epiphytic on branchlets of small shrubs; old parts of the stems leafless, knotty, tortuous, woody, maximum diameter 2 mm, with very short internodes, bark light grey; young parts of the stems green, puberulous in two opposite rows, rather conspicuously anisophyllous; plant drying grey-blue or whitish green. Leaves elliptic or ovate-elliptic to slightly obovate, 1.5–8.5 × 0.8–3.2 cm, attenuate at the base, acuminate at the tip, glabrous above, slightly puberulent on the midrib, sometimes also on the lateral nerve(s) below; petiole puberulent below. Inflorescence a short spike 1.5–1.8 × 1.3–2 cm without the corollas, (1–)5-flowered; bracts not seen, probably early caducous. Calyx 13–15(–17) mm long, posterior lobe 3–4.5 mm wide, prominently trinerved, ending in three acuminate teeth 4 mm long, anterior lobes acuminate, 1–1.5 mm wide, with one prominent nerve, all the lobes shortly ciliate at the margin near the tip (short non-glandular hairs). Corolla white, 2 cm long, infundibuliform, tube glabrous, 5–6 mm wide at the throat (measurements on dry material), lobes pubescent outside, the median lobe lanceolate, 1.5 mm long, curved backwards, the lateral basal ones 0.5–0.6 mm long, (measurements on boiled, otherwise partly destroyed corolla). Stamens: filament of the longer stamens 4.5 mm long, of the shorter ones 2–2.5 mm, all shortly glandular-hairy; anthers 1.5 mm long, glabrous or those of the longer stamens with 1–2 glandular hairs at the tip. Pistil: style sparsely and antrorsely hairy, 16 mm long; stigma tripartite, 2 mm long. Capsule 12 mm long, glabrous, valves unequally seeded, one 8-seeded valve and one 16-seeded valve (*Senterre & Obiang* 4040; *Senterre et al.* 2146), or subequally seeded, with one 12- and one 13-seeded valve (*Hallé & Villiers* 4863). Fig. 5.

Distribution – Species of the Lower Guinean subcentre of the Guineo-Congolian centre of endemism, endemic to the Cristal Mountains, recorded only from six areas in Equatorial Guinea and Gabon. Fig. 6.

Other collections examined – **Equatorial Guinea**: Sendje-Ongamnsok, alt. 400 m, Feb. 2001, *Lejoly* 01/61, fr (BRLU); Parc National de Monte Alen, 12,5 km E de la « Cabana de Mosumo », alt. 840 m, Jul. 2003, *Senterre & Obiang* 4040, buds (BRLU); centre du Parc National de Monte Alen, sur la piste Esamalan–Lago Atoc, alt. 800 m, Jan. 2002, *Senterre, Obiang & Esono* 2146, fr (BRLU, BR); Parc National de Monte Alen, près de la piste longeant par le N le transect dit de Monte Alen, alt. 1200 m, Mar. 2002, *Senterre, Obiang & Esono* 2754, fr (BRLU).

Gabon: Km 23 Tchimbélé–Kinguélé, alt. 450–475 m, Jan. 1991, *J.J. de Wilde, Sosef & van Nek* 10239, fr (WAG); Km 23 Tchimbélé–Kinguélé, alt. c. 500 m, Feb. 2008, *Dessein et al.* 1778, fl (BR, LBV) ; Monts de Cristal, Rivière Essia, 10 km S de Méla, Feb. 1968, *N. Hallé & J.F. Villiers* 4863 (P).

Habitat – Rainforest on bad or well-drained to superficial soils, in small valley bottoms, on high plateaus or gentle

Key to the varieties of *Ascotheca paucinervia*

Stem (30–)50–100 cm; leaves 8–22 × 3–8 cm; petiole 0.8–12.5 cm; lateral nerves 6–9; bracts 9–12 × 6.5–8 mm ..... *Ascotheca paucinervia* var. *paucinervia*

Stem 15–40 cm; leaves 2.5–6 × 1.5–3 cm; petiole 0.5–2.5 cm long; lateral nerves 3–5 (–7); bracts 4–6 × 3–5 mm. ……..... *Ascotheca paucinervia* Heine var. *minor*

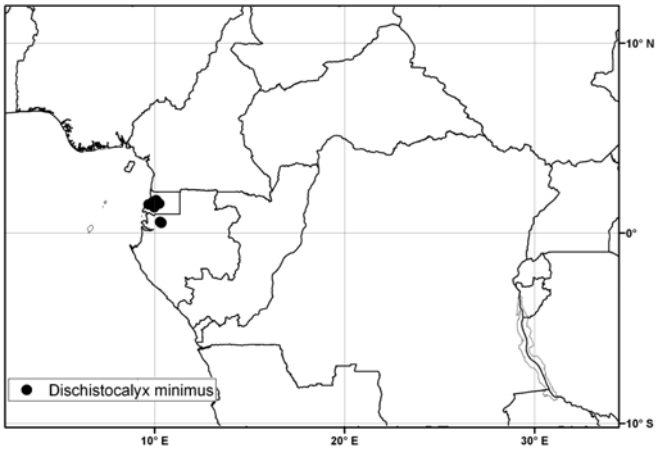

Figure 6 – *Dischistocalyx minimus*. Distribution map.

slopes with morning mist at highest altitudes; rocky bed of creeks on moss-covered blocks, 400–1200 m.

This species is epiphytic on branchlets of small shrubs or on fallen trunks 1–1.5 m above the forest floor, in mature rainforests with a high hygrometric degree due to the altitude or to the soil hydromorphy, with large trees covered with bryophytes.

3. *Ascotheca*

Ascotheca is a monotypic genus distributed in Nigeria, Cameroon and Gabon. Its sole species was first described by Anderson (1863) and validly published by Clarke (1899) as *Justicia paucinervia*, then transferred in *Rungia* by Heine (1962) and had meanwhile been described as *Rungia obcordata* by Lindau (1905), due to the dehiscing walls of the capsule. The quite unusual basal poricidal dehiscence of the anthers, the bracts with an inconspicuous hyaline margin and the shape and size of the pollen grains led Heine (1966) to describe a new genus, *Ascotheca*. The specimen of Equatorial Guinea, along with one BR collection and a few P collections from Cameroon and Gabon, differs from the type specimen and other material of *A. paucinervia* by their smaller leaves, bracts and spindlier habit. As they are sympatric, they only deserve a varietal rank. The floral dimensions are similar in the two varieties.

Ascotheca paucinervia (T.Anders. ex C.B.Clarke) Heine var. ***minor*** Champl. & Senterre **var. nov.**

Ab *Ascotheca paucinervia* propter habitum graciliorem et folia, petiolos bracteasque parviores differt. – Type: Equatorial Guinea, Monte Alen, alt. 1000 m, Jan. 2003, *Desmet, R. Nguema & N. Nguema* 219, fl (holo-: BRLU; iso-: BR, K, P).

Distribution – Lower Guinean subcentre of endemism.

Other collections examined – **Cameroon**: Ndoknabao, 30 km SW Ndikinimeki, Dec. 1971, *Letouzey* 10835, fl (K, P); Bipinde, Mar. 1913, *Zenker* 310 (BR, P).

Gabon: Koumouloundou, chantier Mittner, (fainted), Jun. 1970, *Farron* 7395 A (P).

Habitat – On moss-covered rocks and stones near waterfalls; springs; in lowland rainforest and submontane rainforest, up to 1000 m.

Ascotheca paucinervia (T.Anders. ex C.B.Clarke) Heine var. ***paucinervia***

Distribution – Lower Guinean subcentre of endemism.

Specimens examined (BR collections compared with the novelty) – **Cameroon**: Nyong River, 50 km S of Badjob, Jan. 1964, *de Wilde* 1744, fl (BR); Bipindi, 1904, *Zenker* 2747, fr; Bipindi, Dec. 1913, *Zenker* 464, fr; Bipindi, 1913, *Zenker* 4773, fl (all BR).

Gabon: Bélinga, Nov. 1964, *N. Hallé* 2978, fl (BR).

Habitat – On muddy banks along creeks and rivers in rainforest; forest fallows; coastal forest with *Sacoglottis gabonensis* on sands, from sea level up to 950 m.

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