CTENOPTERELLA GABONENSIS, A NEW SPECIES OF GRAMMITID FERN (POLYPODIACEAE) FROM GABON, AFRICA

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ABSTRACT

A new species of grammitid fern, *Ctenopterella gabonensis* (Polypodiaceae), is described from Gabon. The only grammitid ferns previously reported from Gabon are *Cochlidium serrulatum* (Sw.) L.E.Bishop (syn. *Xiphopteris serrulata* (Sw.) Kaulf.) and *Zygophlebia villosissima* (Hook.) L.E.Bishop (syn. *Ctenopteris villosissima* (Hook.) W.J.Harley).

INTRODUCTION

During the preparation of the account of Grammitidaceae for the Flora of Tropical East Africa (FTEA) (Parris, 2005) loans were made of material from countries beyond the FTEA area to ascertain the wider distribution of FTEA species. Amongst material sent from WAG was a specimen of an unknown species of *Ctenopterella* from Gabon, described below as *C. gabonensis*. Only two species of grammitid fern have been reported from Gabon (Tardieu, 1964): *Xiphopteris serrulata* (Sw.) Kaulf.) and *Ctenopteris villosissima* (Hook.) W.J.Harley, now known as *Cochlidium serrulatum* (Sw.) L.E.Bishop and *Zygophlebia villosissima* (Hook.) L.E.Bishop respectively. *Cochlidium serrulatum* has laminae differentiated into a fertile ± entire apical portion and a sterile lobed basal portion with one vein per lobe. *Ctenopterella gabonensis* and *Zygophlebia villosissima* have deeply pinnately divided laminae, with several pairs of veins in the pinnae; the former has glabrous rhizome scales, pale yellow-brown to pale red-brown non-catenate simple eglandular hairs and hydathodes on the vein endings on the abaxial surface of the lamina while the latter has marginal and apical hairs on the rhizome scales, medium to dark red-brown non-catenate simple eglandular hairs and vein endings lacking hydathodes.

Three species of *Ctenopterella* have been described from the Africa-Madagascar-Mascarene region: *C. macrorhyncha* (Baker) Parris, *C. parvula* (Bory ex Willd.) Parris and *C. zenkeri* (Hieron.) Parris. *Ctenopterella gabonensis* differs from these species by the presence of short pale non-catenate simple eglandular hairs on the stipes and laminae. Table 1 summarises the hair types on the stipes and lamina of *C. gabonensis, C. macrorhyncha, C. parvula* and *C. zenkeri*. The very short veins of *C. gabonensis*, extending only half way between the margin and the costa, are similar to those of *C. parvula*, which lacks the simple eglandular hairs and branched hairs with simple eglandular branches found in *C. gabonensis*, however, and sometimes has branched hairs with catenate branches, a hair type not found in *C. gabonensis*.

TYPIFICATION AND DESCRIPTION

Ctenopterella gabonensis *Parris,* **sp. nov.**

Holotype

Gabon, Chantier CEB, Monts Doudou, c. 20 km WSW of Doussala, 2º25’S 10º30’E, c.

Table 1. Stipe and lamina hairs of *Ctenopterella gabonensis, C. macrorhyncha, C. parvula* and *C. zenkeri*.

	C. gabonensis	*C. macrorhyncha*	*C. parvula*	*C. zenkeri*
Stipe hairs	Non-catenate simple eglandular hairs and 1-3-forked hairs with non-catenate simple eglandular branches.	Catenate simple eglandular or glandular hairs 3 or more cells long, sometimes also with simple glandular hairs 2 cells long.	Simple glandular hairs 2 cells long, sometimes also with catenate simple glandular hairs 3 or more cells long and/or 1-forked hairs with non-catenate simple eglandular branch.	Glabrous or with catenate simple glandular or eglandular hairs 3 or more cells long and/or simple glandular hairs 2 cells long and/or1-2-forked hairs with glandular branches or catenate glandular or eglandular branches.
Lamina hairs	As stipe, sometimes also with catenate simple glandular hairs 3 or more cells long.	Catenate hairs as on stipe.	As stipe.	Catenate simple glandular or eglandular hairs 3 or more cells long and/or simple glandular hairs 2 cells long, sometimes with 1-2-forked hairs with catenate glandular or eglandular branches.

650-700 m, 20 May 1985, *J M & B Reitsma, Breteler & A M Louis* 1081 (WAG 0014897!).

Etymology
From Gabon, Africa.

Description
Rhizomes 3.1-4.2 mm diam. including scales, 1.4-1.7 mm diam. without scales, short-creeping, not branched, dorsiventral, stipes in 2 rows, articulated to rhizome, phyllopodia 0.2-0.3 mm high, stipes 0.3-0.9(-1.1) mm apart in each row; scales (1.6-)1.9-3.6 x 0.3-0.5 mm, narrowly lanceolate, acuminate at apex which is terete, cordate at base, pale yellow-brown to pale red-brown, glabrous, not clathrate, not iridescent, subglossy, cells in centre of scale 1-2 x longer than broad, cells not turgid. Stipes (7-)8-11(-12) x (0.4-)0.5-0.7(-0.8) mm, dull dark brown; with dense ± patent pale yellow-brown to pale red-brown non-catenate simple eglandular hairs 0.1-0.2 mm long and sparse to scattered ± appressed 1-3-forked pale yellow-brown to pale red-brown hairs with catenate base, simple eglandular branches and glandular apex 0.1-0.2 mm long. Laminae (80-)89-136(-149) x (8-)9-12(-13) mm, narrowly elliptic in outline, bluntly acute at apex, long-attenuate at base, pinnate, pinnae (30-)32-42(-48) pairs, at (60-)62-70º to rachis, 0-2 mm apart midway, lowest 1-2(-3) pairs reduced to auricles, longest pinnae 5-7 x 2-3 mm, narrowly triangular-oblong, bluntly acute to acute at apex, sessile to slightly surcurrent on acroscopic margin, decurrent on basiscopic margin at base, entire; texture thinly coriaceous; with ± patent pale yellow-brown to pale red-brown non-catenate simple eglandular hairs c. 0.1 mm long occasional to sparse on abaxial surface of rachis and ± appressed 1-3-forked pale yellow-brown to pale red-brown hairs 0.1-0.2 mm long with catenate base, simple eglandular branches and glandular apex sparse to scattered on abaxial surface of rachis and occasional to scattered on adaxial surface of rachis especially in sinuses, sometimes occasional to sparse on abaxial surface of costae, sometimes with ± appressed pale red-brown catenate simple glandular hairs up to 0.1 mm long occasional to sparse on abaxial surface of lamina, occasional to sparse on abaxial surface of costae and sparse to scattered on abaxial surface of rachis; rachis slightly sunken between two flanges on adaxial surface of lamina, prominent on abaxial surface, darker than lamina on both surfaces; costae slightly prominent and concolorous on both surfaces; veins invisible in transmitted light, sometimes slightly prominent and concolorous on adaxial surface, pinnately branched, 1st acroscopic and basiscopic branches from axil of rachis and pinna mid-vein, 2-3 pairs of branches in longest pinnae, branches simple, short, reaching half way between costa and margin, not extending beyond sorus, each branch ending marked by a dark elongate hydathode 0.2-0.3 x 0.1 mm on adaxial surface of lamina, free. Sori (1.2-)1.4-1.7 x (1.1-)1.2-1.5(-1.6) mm, ± circular to broadly elliptic in outline, on surface of lamina or slightly sunken in broad shallow depressions in lamina which may be slightly prominent under hydathode on adaxial surface, confluent within and between rows when mature, covering under-surface of lamina at maturity and extending beyond margin, on c. 11 pairs of pinnae, in apical 1/3 of lamina, to c. 7 mm below lamina apex, 1-2 rows per pinna, 1 on each side or on either side of costae, 1-2 in each row on longest pinnae, in basal 1/2 of pinnae, to 2-3 mm below pinna apex, midway between costa and margin, oblique to costa. Sporangia (220-)230-250(-260) µm, glabrous; indurated cells of annulus 10-11. Spores (37-)39-48 µ m diam.

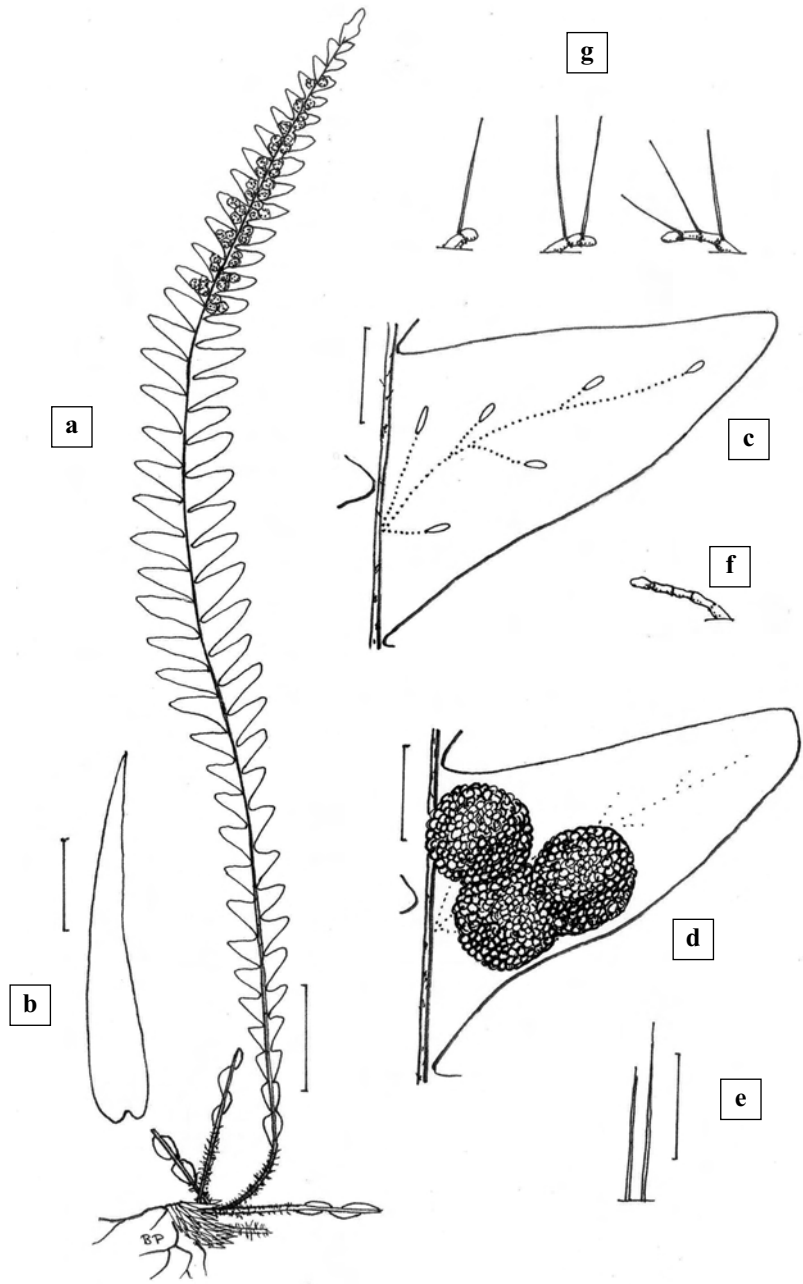

Figure 1. *Ctenopterella gabonensis*. **a.** whole plant: scale 1 cm. **b.** rhizome scale: scale 1 mm. **c.** adaxial surface of pinna showing venation and hydathodes: scale 1 mm. **d.** abaxial surface of lamina showing sori: scale 1 mm. **e.** simple eglandular hairs from stipe. **f.** catenate simple hairs from abaxial surface of rachis. **g.** branched hairs from abaxial surface of rachis. e-g: scale 0.1 mm. All from *Reitsma, Reitsma, Breteler & Louis* 1081 (WAG).

ECOLOGY AND DISTRIBUTION

Epiphyte in mossy forest, growing with *Hymenophyllum kuhnii* C.Chr., between c. 650 and 700 m alt. Known only from the type locality in Gabon.

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