

A new species of *Thelypteris* (Thelypteridaceae) from southern Bahia, Brazil

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Abstract. A new species, *Thelypteris beckeriana* (Thelypteridaceae), is here described. It belongs to subgenus *Goniopteris* because of the presence of forked and stellate hairs on some parts of its blades. It is a narrow endemic to the Atlantic Rain Forest of southern Bahia, Brazil. A complete description, illustrations, and comparisons with the most similar species are provided.

Key Words: Atlantic Rain Forest, ferns, *Goniopteris*, taxonomy, *Thelypteris beckeriana*.

Recent collections of ferns from the State of Bahia, Brazil, have led to the discovery of a new species of *Thelypteris* subgenus *Goniopteris* (C. Presl) Duek. Remnants of the Atlantic Coastal Forest in southern Bahia are considered to be among the most important sites for biodiversity conservation in the world, especially for their outstanding species richness and high proportion of plant endemism (Mori et al., 1981, 1983; Thomas et al., 1998, 2008; Myers et al., 2000; Martini et al., 2007).

The species here described, as well as many others of subg. *Goniopteris*, emphasize the Brazilian Atlantic Forest as an important center of diversity and endemism for the group (Salino, 2002). At least 21 species in subg. *Goniopteris* are now known to be restricted, or nearly restricted (i.e., extending into Paraguay and northeastern Argentina), to this area.

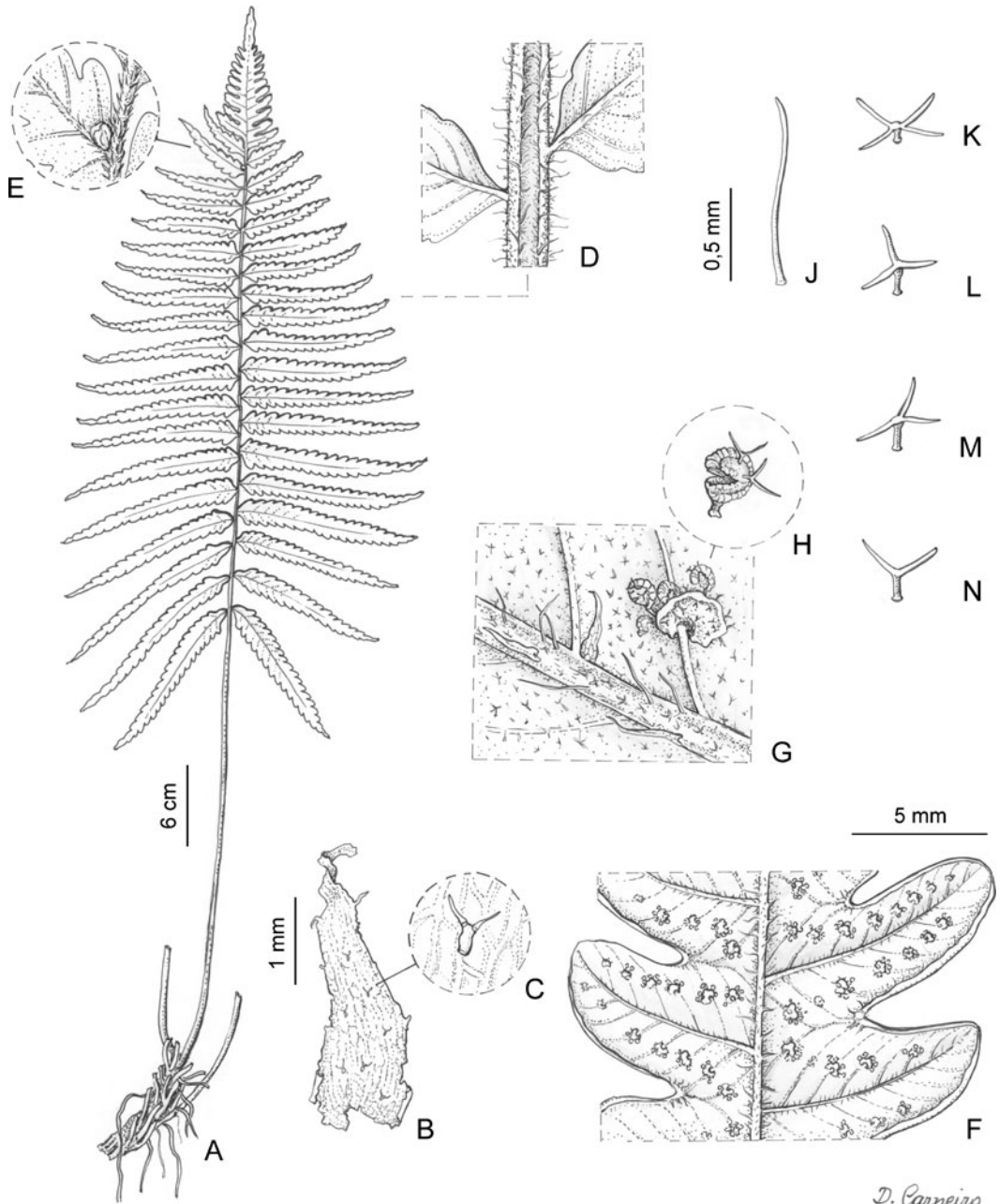
In the State of Bahia, besides the species here described, at least eight others from subg. *Goniopteris* are known to occur: *Thelypteris abrupta* (Desv.) Proctor; *T. anoptera* (Kunze ex Kuhn) C. F. Reed; *T. biformata* (Rosenst.) R. M. Tryon; *T. biolleyi* (H. Christ) Proctor; *T. kuhlmannii* (Brade) comb. ined.; *T.*

poiteana (Bory) Proctor; *T. tristis* (Kunze) R. M. Tryon; and *T. vivipara* (Raddi) C. F. Reed.

Thelypteris beckeriana F. B. Matos, A. R. Sm. & Labiak, **sp. nov.** Type: Brazil. Bahia: Camacan, RPPN Serra Bonita, 9.7 km W de Camacan, na estrada para Jacarecá, 6 km SW na estrada para a RPPN e torre da Embratel, 15°23'30"S, 39°33'55" W, 700 m, 30 Jul 2008, F. B. Matos & R. R. Santos 1558 (holotype: CEPEC; isotypes: UC, UPCB). (Fig. 1)

Species nova haec subgeneris *Goniopteridis* (C. Presl) Duek, *Thelypteridis lugubri* (Kunze ex Mett.) R. M. Tryon & A. F. Tryon affinis, qua rhizomatibus suberectis vel erectis (repentibus in *T. lugubri*), faciebus pinnarum abaxialiter inter nervos dense pilosis, pilis furcatis vel stellatis omatis et pilis furcatis ad capsulas sporangiorum differt.

Plants terrestrial; rhizomes decumbent or erect, caudices to 10 cm tall, 1–3 cm in diameter, apical scales brown, ovate, 2–3 × 1–1.5 mm, bearing sparse furcate hairs ca. 0.1 mm long; leaves few (2–4), to ca. 150 cm long, monomorphic; petioles greenish-stramineous to light brown, to ca. 75 cm × 6 mm, densely pubescent to glabrescent with furcate or stellate hairs 0.1 mm, also with a few long, stout hairs



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FIG. 1. *Thelypteris beckeriana*. A. Habit. B. Rhizome scale. C. Forked hair on surface of rhizome scale. D. Adaxial surface of rachis. E. Bud in the axil of a distal pinna. F. Pinna detail, abaxial surface. G. Lamina detail showing indument and sorus. H. Sporangium. J–N. Blade hairs. (Drawn from the holotype.)

to ca. 1 mm, bearing scattered, ovate scales throughout; blades herbaceous, dark green, not verrucose, 1-pinnate-pinnatifid, the apex ± gradually reduced and pinnatifid; buds or small

plantlets present in axils of distal pinnae; rachises with dense, hyaline to often reddish, furcate or stellate hairs 0.1–0.2 mm, also with a few longer acicular hairs; pinnae sessile or

short-stalked < 1 mm, subopposite proximally, alternate distally, spreading, 18–22 lateral pairs, 13–25 × 1.5–3.5 cm, incised 2/5–3/4 their width, bases narrowed but still pinnatifid, truncate, pinna apices attenuate, pinnatifid nearly to the tips, pinna lobes 4–7 mm wide at sinuses, about as long as broad, or usually longer than broad, rounded at apices; veins 7–13 pairs per segment, venation variable, even on the same frond, 1 pair united below the sinus with an excurrent vein to the sinus, a second pair running to the sinus, or lowermost pair running to sinus; indument abaxially on costae of inconspicuous brown, clathrate scales 0.5–1 × 0.1–0.3 mm, scattered, stout, acicular hairs to 1.2 mm and shorter, dense furcate and stellate hairs 0.1–0.2 mm, veins and surfaces between veins usually with acicular, stalked-furcate, and stalked-stellate hairs 0.1–0.2, indument adaxially lacking except along costae, which bear dense, stout, acicular, ascending hairs to 1 mm long, and costules (scattered, stout, acicular hairs to 1 mm); sori medial, round; indusia brown, bearing furcate hairs, evanescent; sporangial capsules setose, the hairs furcate.

Distribution and Ecology.—Known only from the moist forests of southern Bahia, Brazil, where it often grows along trails or in deep shaded places; 150–1000 m.

Etymology.—We name this species in honor of Dr. Vitor O. Becker, world-renowned entomologist, specialist in neotropical Lepidoptera, and owner of the Serra Bonita Reserve in southern Bahia, home of more than 180 species of ferns and lycophytes (Matos et al., *in press*), and the type locality of *Thelypteris beckeriana*.

Additional specimens examined. BRAZIL. Bahia: Almadina, Serra do Corcovado, 9.8 km ao SW de Coaraci na estrada para Almadina daí N até a Fazenda São José, Proprietário Senhor Francisco, 14°42'21"S, 39°36'12"W, 650–750 m, Jun 2005, *Fiaschi et al. 2953* (CEPEC, UPCB); same locality, 19 Jul 2005, *Matos et al. 720* (CEPEC, UPCB); Almadina, Serra dos Sete Paus, 6 km de Almadina na estrada para Ibitupã, daí 7 km N para a comunidade de Sete Paus, na nascente do Rio Almada, 14°44'S, 39°42'W, 578 m, 19 Jul 2005, *Matos et al. 712* (CEPEC, UPCB); Arataca, Serra do Peito de Moça, estrada que liga Arataca à Una, ramal ca. 22.4 km de Arataca com entrada no assentamento Santo Antônio, RPPN "Caminho das Pedras," 15°10'25"S, 39°20'30"W, 1000 m, 16 Feb 2006, *Matos et al. 1028* (CEPEC, UPCB); Buerarema, Rodovia Buerarema–São José da Vitória (BR 101), ramal à direita, ca. 10 km da BR. Faz.

Santa Rosa, entrada ca. 500 m à direita, 15°06'19"S, 39°16'20"W, 150 m, 9 Aug 2006, *Labiak et al. 3698* (UPCB); same locality, 9 Aug 2006, *Labiak et al. 3701* (UPCB); same locality as type, 850 m, 1 Aug 2008, *Matos 1587* (CEPEC, UC, UPCB).

Thelypteris beckeriana differs from *Thelypteris lugubris* (Kunze ex Mett.) R. M. Tryon & A. F. Tryon by generally suberect or erect rhizomes (always creeping in *T. lugubris*), a bud or small plantlet in the axil of a distal pinna (buds variably present or absent in *T. lugubris*), duller blade surfaces adaxially, presence of scattered, stout, acicular hairs to 1 mm long on the costules adaxially, furcate hairs on the sporangial capsules, some furcate hairs on the indusia, rachis hairs more reddish, presence of forked or stellate hairs between the veins abaxially, and variable venation, with often one pair of veins united below the sinus. *Thelypteris lugubris* itself is quite variable in blade dissection, size, and pubescence, and is widely distributed in Brazil (Mato Grosso, Mato Grosso do Sul, Goiás, Minas Gerais, Rio de Janeiro, São Paulo, Paraná and Santa Catarina) and Paraguay. Another related species is *T. montana* Salino, from Espírito Santo, Minas Gerais, and Rio de Janeiro. It differs by dense stellate hairs between the veins abaxially and lack of long-acicular hairs on the costules adaxially, the rachis, and the costae abaxially. It further differs by glabrous sporangial capsules and lack of buds in the axils of the distal pinnae.

Other possibly related species include several Brazilian endemics: *Thelypteris monosora* (C. Presl) Salino, which has similar costal scales but differs by cuneate pinna bases, glabrous sporangial capsules, veins connivent at the sinuses, and costae and laminar tissue abaxially without stellate or furcate hairs. From *T. cuneata* (C. Chr.) C. F. Reed, *Thelypteris beckeriana* differs by cuneate pinna bases and glabrous sporangial capsules. Another species, *Thelypteris multi-gemmifera* Salino, has similar blade dissection, leaf length, and buds in axils of pinnae; however, it differs by creeping rhizomes, lack of costal scales, and the presence of stellate and furcate hairs on the costae, veins, and laminar tissue between veins abaxially. Also similar is *T. paranaensis* Salino, which differs by dense stellate and furcate hairs on and

between the veins abaxially (but lacking acicular hairs), lack of laminar buds, and subconform terminal pinnae.

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