

## New species, new combinations and new distributions in neotropical species of *Elaphoglossum* (Lomariopsidaceae)

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**Abstract:** More new species, new combinations and new distributions are made in the large and difficult genus *Elaphoglossum* in Neotropic. Ten new species are described, this are: *Elaphoglossum adrianae* A. Rojas, *E. betancuri* A. Rojas, *E. caridadae* A. Rojas, *E. glabromarginatum* A. Rojas, *E. kessleri* A. Rojas, *E. macdougallii* A. Rojas, *E. paramicola* A. Rojas, *E. paxense* A. Rojas, *E. pseudoherminieri* A. Rojas and *E. solomonii* A. Rojas. Three species are combined, this are: *Elaphoglossum beitelii* (Mickel) A. Rojas, *E. curvans* (Kunze) A. Rojas and *E. eutecnum* (Mickel) A. Rojas. Finally, 86 species are reported from other countries and some species names are synonymized.

**Key words:** *Elaphoglossum*, Lomariopsidaceae, Neotropic, new combinations, new distributions, new species.

Several new species have been described in different taxonomic works for the Neotropic in the last five years as Arens y Smith 1998, Labiak 2000, Lorea y Smith 1999, Mickel 2001, Mickel y Smith 2000, Moran 2000, Moran y Øllgaard 1998, Mendoza *et al.* 2001, Navarrete y Øllgaard 2000, Pacheco y Moran 1999, Prado 2000, Prado y Smith 2002, Rojas 2001a, 2001b, 2001c, 2002a, 2002b, Smith *et al.* 2001, Tejero y Pacheco 2002, Tuomisto y Moran 2001.

The exhaustive studies during the last three decades have generated the description of many new species, can be appreciated in recent regional treatments for Mexico (19 new of 45; Mickel 1980, 1981, 1988, 1992, Smith 1975), Venezuela (35 new of 101; Mickel 1985a, 1990a, 1991a), and Perú (51 new of 122; Mickel 1990b, 1991b). Other papers including new species of *Elaphoglossum* are, Gómez 1972a, Gómez 1972b, describing six new species for Costa Rica, Mickel 1979 describing three new species from Guatemala, Mickel

1985b with 14 new species of proliferous *Elaphoglossum*, Mickel 1992 with 33 new species from Mesoamerica, Rojas 1996 describing 12 new species from Costa Rica and Panama and Rojas 1997 describing 14 new species from Mesoamerica.

The new species described and the new combinations are organized in sections and subsections according to the system of Mickel and Atehortúa (1980), as indicated in Table 1.

### MATERIALS AND METHODS

The new taxa are circumscribed on the basis of material seen at the Museo Nacional de Costa Rica (CR), Instituto Politécnico Nacional (ENCB), Field Museum of Natural History (F), Harvard University (GH), Instituto de Ecología (Sede Regional del Bajío) (IEB), Instituto Nacional de Biodiversidad (INB), Universidad Nacional Autónoma de México (MEXU), Missouri Botanical Garden (MO), New York

TABLE 1

The new species described and the new combinations in the present paper are organized in sections and subsections

SECTION	SUBSECTION	SPECIES
<i>Elaphoglossum</i>	<i>Pachyglossa</i>	<i>E. paramicola</i> <i>E. pseudoherminieri</i>
<i>Lepidoglossa</i>	<i>Microlepidea</i>	<i>E. caridadae</i> <i>E. curvans</i> <i>E. betancuri</i>
	<i>Muscosa</i>	<i>E. macdougalii</i>
	<i>Pilosa</i>	<i>E. beitelii</i>
<i>Polytrichia</i>	<i>Hybrida</i>	<i>E. kessleri</i> <i>E. solomonii</i>
<i>Setosa</i>	<i>Setosa</i>	<i>E. adrianae</i> <i>E. eutecnum</i> <i>E. glabromarginatum</i> <i>E. paxense</i>
<i>Undulata</i>		

Botanical Garden (NY), Universidad Autónoma Metropolitana, Iztapalapa (UAMIZ), University of California (UC) and Smithsonian Institution (US). The names according with index herbariorum in (Anonymous 2002).

The types that I saw are indicated with admiration marks, the holotypes that I could not see are indicated with -n.s. as abbreviation of not seen. Some herbaria that probably have a specimen cited here but not revised are indicated with interrogation marks.

The countries indicated in bold represent the new distribution no previously reported, the countries indicated between quotation marks represent the known distribution of the synonyms (if this is different to valid species distribution).

#### NEW SPECIES

##### *Elaphoglossum adrianae*

A. Rojas, sp. nov. (Fig. 1). **Type:** COSTA RICA. **Cartago:** Cantón de Paraiso, Parque Nacional Tapantí, Cuenca del Reventazón, Orosi, Sendero Palmitos o T6, 9° 43'35" N, 83° 46' 28" W, 1 450-1 600 m, A. Rojas & R. Delgado 3793 (Holotype: INB; Isotype: CR, MO, NY, UC, US).

*Ab E. curtii rhizomatis squamis longioribus; lamina linear-oblancheolatis cum*

*basin attenuatis et crenulatis marginen, magis distantibus venis, et reddish stipitis laminaeque squamis distans.*

Terrestrial; rhizomes 1.5-2 mm diam., compact; rhizome scales 2.0-3.5 x 0.2-0.5 mm, linear-lanceolate, brown, lustrous, marginally entire; fronds (6-) 9-18 (-25) cm, approximate; phyllopodia absent; stipes 1/4-1/3 of the frond length; stipe scales 1-3 x 0.05-0.20 mm, subulate, dark reddish brown to atropurpureous, patent, lustrous, disperse, marginally dispersedly denticulate, mixed with glandular hairs; blades (4-) 12-16 x 1.2-1.8 (-2.7) cm, linear-oblancheolate (rarely narrowly elliptic), papiraceous, basically cuneate to attenuate, apically cuspidate to attenuate, marginally undulate; blade scales 2.5-4.0 x 0.2-0.5 mm, subulate, dark reddish brown to atropurpureous, lustrous, patent, dispersedly in both surfaces, marginally entire to undulate; veins evident, free, simple or rarely 1-forked, 2-3.5 mm apart, diverging at ca. 50-60° angle from costa; hydathodes present; fertile fronds 8-14 cm; stipes 2/3-4/5 of the frond length; fertile blades 2-4 x 0.8-1.1 cm, lanceolate narrowly elliptic, basically cuneate, apically acute to acuminate; intersporangial scales 3-5 x 0.2-0.4 mm, subulate, dark reddish brown to atropurpureous, patent, lustrous, dispersed, entire margin.

**Distribution:** Costa Rica and Panama, only on Cordillera de Tilarán, Cordillera Central and atlantic slope of Cordillera de Talamanca, at (850-) 1 000-1 900 m.



Fig. 1. *Elaphoglossum adrianae* (A. Rojas and R. Delgado 3793, INB): a) Type specimen. b) Rhizome scale. c) Stipe scales. d) Costal scale. e) Blade scale. (scales b-e: 25x).

**Paratypes:** COSTARICA. **Alajuela:** near La Laguna, 6 to 8 km S of Villa Quesada, 1 200 m, A. Molina *et al.* 17515 (CR). **Cartago:** Reserva Tapantí, 1 300-1 800 m, L.

Gómez 18838 (NY, UC), muestra mixta con *E. curtii*, L. Gómez 19408 (UC); Paraíso, Orosí, Parque Nacional Tapantí, subiendo por Quebrada Segundo hasta la cabecera del Río

Taurito, 1.800m, *G. Herrera 5756* (CR); along trail leading eastward into mountains from road into Tapantí Reserve, ca. 1 km S of jct. of Quebrada Salto and Río Grande de Orosí, 9° 43' N, 83° 47' W, 1 500-1 800 m, *A. Smith et al. 2161* (CR,UC). **Guanacaste:** La Cruz, Parque Nacional Guanacaste, Estación Cacao, 10° 55'38" N, 85° 29'38" W, 1 100 m, *R. Espinoza 322* (CR, INB); Las Nubes de Tilarán, along Quebradas Valdivia and Azul, 10° 23' N, 84° 52' W, 1 000-1 150 m, *C. Ivey & W. Haber 136* (CR); a 2 km NE de Tilarán, 850 m, *A. Jiménez 1341* (CR). **Heredia:** Sarapiquí, Virgen del Socorro, 800-1 000 m, *L. Gómez 18216* (CR); along ridge between Río Sardinal and near waters of Quebrada Arrayanes, N Slope of Volcán Barva, 10° 12' N, 84° 07' W, 1 850-2 000 m, *M. Grayum 7310* (CR); 0.5-1 km W of the Río Las Vueltas (Río Patria), 0.5 km NE of Cerro Chompipe, ca. 11 km NNE of Heredia, ca. 1 950 m, *D. Lellinger & J. White 983* (F, US); road to Volcán Barva, *R. Lloyd 4127* (NY); Volcán Barva, at top of saddle, 8 300 ft., *R. Lloyd 4206* (NY), *R. Lloyd 4211* (NY); 10 km N of San Rafael de Heredia on Volcán Barva, 1 950 m, *J. Mickel 3017* (NY); end of the Rte. 113, where road crosses Río Patria, about 100-200 m upstream, *R. Moran 3084* (F); Cerro de Las Lajas, N of San Isidro, 2 000-2 400 m, *P. Standley & J. Valerio 51623* (US); Cerro Las Caricias, N of San Isidro, 2 000-2 400 m, *P. Standley & J. Valerio 52123* (US); along Río Vueltas (upper Río Patria), at end of Rte. 113, 9 km N of Angeles, 10° 06' N, 84° 04' W, 1 900 m, *R. Stolze 1624* (F). **Limón:** Bratsi, Amubri, Alto Lari, Kivut, siguiendo la fila divisoria entre Ríos Lari y Dapari, cuenca superior de ambos, 9° 22' 45" N, 83° 06' 15" W, 1 900 m, *G. Herrera 5462* (INB, MO); Cantón de Talamanca, Bratsi, Amubri, Alto Lari, Kivut, siguiendo la fila divisoria entre Ríos Lari y Dapari, cuenca superior de ambos, 9° 22' 45" N, 83° 06' 15" W, 1 900 m, *G. Herrera 5480* (INB, MO); Cantón de Limón, El Progreso, cabeceras del Río Cariei, Fila Matama, Valle de La Estrella, 9° 47' 80" N, 83° 08' 18" W, 1 400 m, *G. Herrera & A. Chacón 2812a* (CR, INB, MO).

**Puntarenas:** atlantic facing ridge beyond the Monteverde Forest Reserve near road across the ridge, ca. 1600 m, *D. Lellinger et al. 1762* (US). **San José:** ca. 10 km N of San Rafael de Heredia, on Volcán Barva, 1 950 m, *D. Lellinger 645* (US). PANAMA. **Bocas del Toro/Chiriquí:** trail along continental divide to ca. 3 km E of Cerro Pate Macho, 8° 49' N, 82° 23' W, 2 000-2 200 m, *A. Smith et al. 2429* (MO), *A. Smith et al. 2431* (MO).

*Elaphoglossum adrianae* differs of *E. curtii* Rosenst. in having longer (2.0-3.5 mm vs. 1-2 mm) rhizome scales; longer [4-12 (-16) vs. 2-6 cm] and linear-oblongate (vs. oblong-elliptic) blades; attenuate (vs. broadly cuneate) blade base; crenulate (vs. entire or nearly so) blade margin; veins 2.0-3.5 mm [vs. 1-2 (-3)] apart; longer (2.5-4.0 mm vs. 2.0-2.5 mm) and atropurpureus (vs. reddish) stipe scales; and longer (2-3 mm vs. 1-2 mm) and atropurpureus (vs. reddish) blade scales.

This species is dedicated to my daughter Adriana María.

#### *Elaphoglossum betancuri*

A. Rojas, sp. nov. (Fig. 2). **Type:** COLOMBIA. **Antioquia:** Mpio. San Luis, Piedra del Castrillón, Cordillera Central, ladera oriental, 6° 43.0' N, 74° 59.74' W, 1 500-1 700 m, *J. Betancur et al. 650* (Holotype: UC).

*Ab E. lepidothrix frondibus minoribus, stipitis squamis minoribus, lamina minoribus ovata cum basi truncata vel cordata diversa.*

Epiphytic; rhizomes 3-5 mm diam., compact, radial; rhizome scales 3-6 x 0.3-0.5 mm, linear, dark brown, lustrous, marginally entire; fronds 7-10 cm, approximate; phyllopodia 2-4 mm; stipes 2/5-1/2 of the frond length; stipe scales 2-5 x 0.5-1.5 mm, ovate to lanceolate, black with brown margin, patent, lustrous, dense, long ciliate marginally and in few times medially, the cilia to 0.5 mm long; blades 3-5 x 1.8-2.9 cm, ovate, chartaceous, basically truncate to cordiform, apically rounded; costal scales 2-4 x ca. 1 mm, lanceolate, orange to reddish-brown, ciliate margin; blade scales 1-3 x ca. 1 mm, ovate to lanceolate, orange to reddish-brown,



Fig. 2. *Elaphoglossum betancuri* (J. Betancur et al. 650, UC): a) Type specimen. b) Rhizome scale. c) Stipe scale. d) Costal scale. e) Blade scale. (scales b-e: 25x).

marginally ciliate, deciduous adaxially, more dense in the margin; blade surface darker adaxially; veins evident, free, 1-2-forked, ca. 1 mm apart; hydathodes absent; fertile fronds 9 cm; stipe ca. 3/5 of the frond length; fertile blade 4 x 0.9 cm, elliptic, basically cuneate, apically obtuse; costal scales 1-2 mm diam., ovate to skeletonized, marginally long ciliate; intersporangial scales absent.

**Distribution:** Apparently endemic to Colombia at 1 500-1 700 m. Known only from the type collection.

This species is similar to *E. lepidothrix* Mickel in the rhizome and blade scales, but differs in shorter (7-10 cm long vs. 12-31 cm) fronds; shorter (2-5 x 0.5-1.5 mm vs. 5-8 x 0.5-1.0 mm) and ovate to lanceolate (vs. linear) stipe scales; shorter (3-5 x 1.8-2.9 cm vs. 8-16 x 3.0-4.3 cm) and ovate (vs. lanceolate-oblong) blade with truncate to cordiform (vs. broadly cuneate to rounded) base.

This species is dedicated to Julio Betancur, Colombian botanist and collector of the type.



Fig. 3. *Elaphoglossum caridadae* (A. Rojas and L. Mejía 1374, INB): a) Type specimen. b) Rhizome scale. c) Stipe scale. d) Costal scale. e) Blade scales. (scales b-e: 25x).

*Elaphoglossum caridadae*

A. Rojas, sp. nov. (Fig. 3). **Type:** COSTA RICA. **Cartago:** Paraíso, Orosi, Estación de Biología Tropical Río Macho y alrededores, 10° 06' 20" N, 83° 50' 40" W, 1 300 m, A. Rojas & L. Mejía 1374 (Holotype: INB; Isotype: CR).

Ab *E. cuspidato squamis rhizomatis longioribus pallidioribus, squamis stipitis costae que rotundatis (iis stipitis basin autem lanceolatis), laminae basi plerumque longe cuneata vel attenuata, somate centrali minuto aurantiaco, necnon lamina squamis abaxialiter longius ciliatis differt.*

Epiphytic; rhizomes 3-4 mm diam., short-creeping, dorsiventral; rhizome scales 3-5 x ca. 0.5 mm, linear-lanceolate, brown to atropurpureous, marginally ciliate-dentate, the cilia 0.3-0.5 mm long; phyllopodia 7-10 mm long; fronds 34-53 cm long; stipes 1/4-1/3 of the frond length; stipe scales 0.5-1 mm long (to 2.5 mm on the first 1 (-3) cm of the stipe base with scales lanceolate or linear-lanceolate), ovate to rounded, black, marginally ciliate, with long-ciliate margin and small central body; blades 15-37 x 1.2-2.8 cm, linear-elliptic, chartaceous to subcoriaceous, basically cuneate to attenuate, apically acuminate; abaxial blade scales ca. 0.5 mm diam., rounded, peltate, stellate, concolorous, orange-yellowish to brown, with long cilia margin and small central body, persistent; adaxial blade scales 0.5-0.7 mm diam., rounded, peltate, stellate, concolorous, in two types, orange-yellowish to whitish mixed with blackish, with small to large central body; veins evident, free, simple or more commonly 1-(2) forked, ca. 1 mm apart, diverging at ca. 80° angle from costa; hydathodes absent; fertile fronds 38-44 cm long; stipes 1/3-3/5 of the frond length; fertile blades 20-25 x 0.6-1.1 cm, linear, basically cuneate to obtuse, apically acute; intersporangial scales not seen.

**Distribution:** Known only from Costa Rica in Valle de Orosí, at the northern extreme of the Cordillera de Talamanca at 1 300-1 700 m.

**Paratype:** COSTARICA. **Cartago:** Paraíso, Valle del Reventazón, Estación de Biología Tropical Río Macho y alrededores, 9° 46' N, 83° 52' W, 1 580-1 700 m, A. Rojas & L. Mejía 1406 (INB, MO).

This species is similar to *E. cuspidatum* (Willd.) T. Moore in its blade shape, dentate stipe and costal scales and persistent scales on the abaxial blade, but differs in having longer (3-5 mm vs. 1.5-2.5 mm) and paler rhizome scales; rounded (except lanceolate on the stipe base) [vs. ovate to lanceolate] stipe and costal scales; commonly long-cuneate to attenuate (vs. widely cuneate to obtuse) blade base; and stellate (vs. ciliate-denticulate to erose) scales with a small central body and long-ciliate margins on the abaxial blade. It is similar to *E. furfuraceum*

(Mett. in Kuhn) H. Christ in its rhizome scales and blade size and shape, but differs in having shorter (3-5 mm vs. 5-8 mm) and dentate (vs. subtentire to deciduously dentate) rhizome scales; rounded and dentate [vs. ovate to lanceolate and ciliate-denticulate] stipe and costal scales; commonly long-cuneate to attenuate (vs. widely cuneate) blade-base, more linear blades; and persistent (vs. deciduous) abaxial blade scales.

This species is dedicated to my mother Caridad Alvarado, for her unconditional support and help.

*Elaphoglossum glabromarginatum*

A. Rojas, sp. nov. (Fig. 4). **Type:** BOLIVIA. **Cochabamba:** Prov. José Carrasco Torrico, 112 km antigua carretera Cochabamba-Villa Tunari, 17° 08'S, 65° 38'W, 2 700 m, M. Kessler et al. 6821 (Holotype: UC; Isotype: LPB?).

*Ab E. albescenti frondibus longioribus, laminae basi cuneata, laminae squamis nigris sparcis, laminae fertili facie abaxiali cum margine nudum abiens.*

Epiphytic; rhizome 4-8 mm diam., compact, radial; rhizome scales 1.5-3.0 x 0.2-0.4 mm, lanceolate, brown to blackish, marginally dentate; phyllopodia absent; fronds (35-) 50-85 cm long; stipes 1/4-2/5 of the frond length; stipe scales 2-4 x 0.3-0.6 mm, linear-lanceolate, brown, sometimes with darker center, patent, marginally dentate; blades (20-) 30-60 x 4-7 cm, oblong to oblong-elliptic, papiraceous, basically cuneate, apically cuspidate; blade scales 1-3 x 0.3-0.7 mm, ovate to lanceolate, dark brown to blackish, dispersed, marginally dentate; veins 1-2-forked, ca. 2-3 mm apart, diverging at 70-80° angle from costa; hydathodes evident, dark brown to blackish; fertile fronds 37-55 cm long; stipes 3/4-4/5 of the frond length; stipe scales 1-3 x 0.3-0.7 mm, ovate to lanceolate, blackish, peltate, marginally dentate; fertile blades 10-18 x 1.8-2.8 cm, lanceolate, basically cuneate to obtuse, apically acuminate; intersporangial scales ca. 1 mm, ovate, black, marginally dentate; blade margin without scales or sporangia in 1-2 mm marginal.

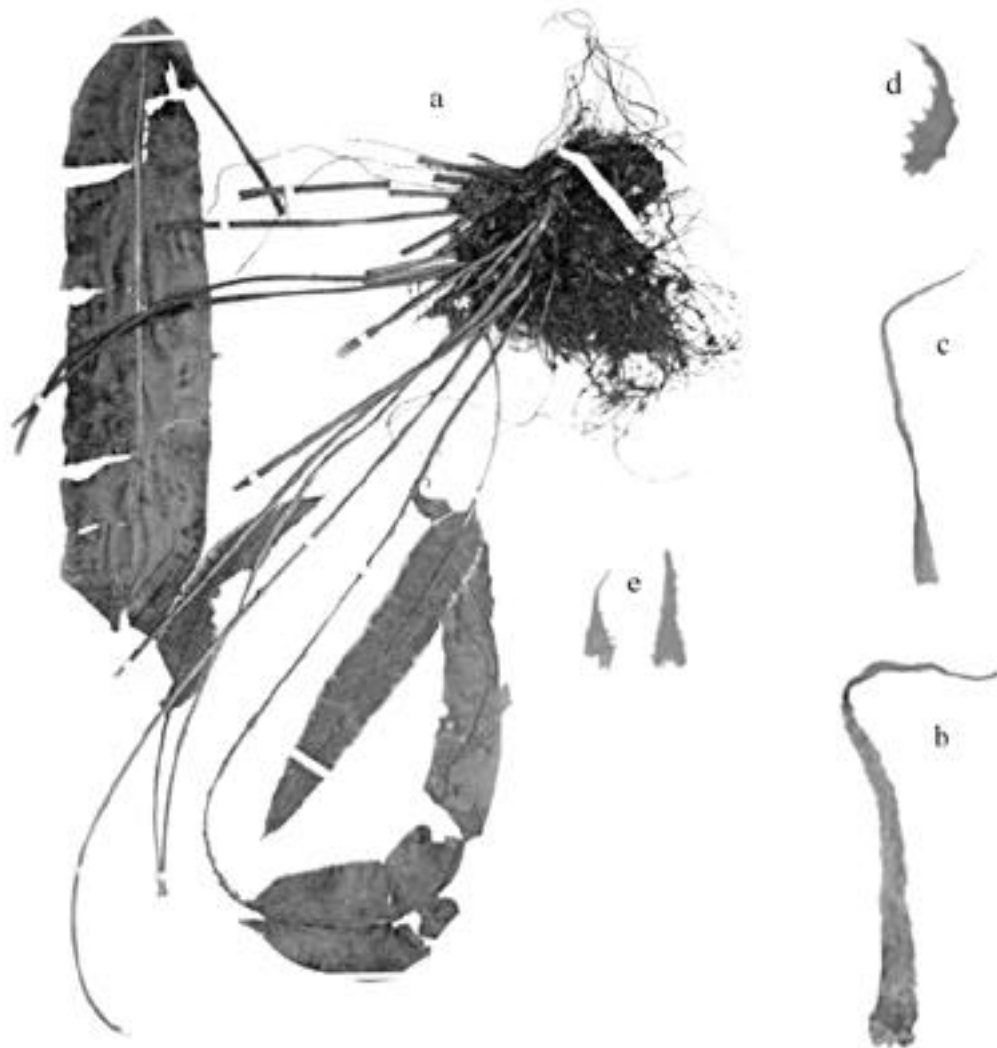


Fig. 4. *Elaphoglossum glabromarginatum* (M. Kessler et al. 6821, UC): a) Type specimen. b) Rhizome scale. c) Stipe scale. d) Costal scale. e) Blade scales. (scales b-e: 25x).

**Distribution:** Apparently endemic to Bolivia at 2 500-3 050 m.

**Paratypes:** BOLIVIA. **Cochabamba:** Prov. José Carrasco Torrico, 108 km antigua carretera Cochabamba-Villa Tunari, 17° 09' S, 65° 38' W, 2 950 m, *M. Kessler et al. 6593* (LPB?, UC); Prov. José Carrasco Torrico, 107 km antigua carretera Cochabamba-Villa Tunari, 17° 10' S, 65° 38' W, 3 050 m, *M. Kessler et al. 6672* (LPB?, UC); Prov. José Carrasco Torrico, 110 km antigua carretera Cochabamba-Villa Tunari, 17° 08' S, 65° 38' W, 2 800 m, *M.*

*Kessler et al. 6798* (LPB?, UC); Prov. José Carrasco Torrico, 115 km antigua carretera Cochabamba-Villa Tunari, 17° 08' S, 65° 38' W, 2 500 m, *M. Kessler et al. 6959* (LPB?, UC).

This species is similar to *E. albescens* (Sodiño) H. Christ, but it differs in longer [(35-) 50-85 cm long vs. 16-40 cm] fronds; blade base cuneate (vs. broadly cuneate to rounded), black (vs. brown) abaxial blade scales and more dispersed; 1-3 m long (vs. 3-5 mm long), black (vs. blackish with brown margin) and concolorous (vs. bicolorous) costal scales;





Fig. 5. *Elaphoglossum kessleri* (M. Kessler et al. 7345, UC): a) Type specimen. b) Rhizome scale. c) Stipe scale. d) Blade margin scale. (scales b-d: 25x).

and glabrous in 1-2 mm (vs. completely covered with sporangia) fertile blade margin.

The name refers to fertile blade without scales or sporangia in the 1-2 mm marginal.

*Elaphoglossum kessleri*

A. Rojas, sp. nov. (Fig. 5). **Type:** BOLIVIA. **Cochabamba:** Prov. José Carrasco Torrico, 137 km antigua carretera Cochabamba-Villa Tunari, 17° 06'S, 65° 34'W, 1700 m, M. Kessler et al. 7345 (Holotype: UC; Isotype: LPB?).

*Ab E. erinaceo stipitis squamis planata cum basi ciliata, lamina angustiori textura tenui, costa squamis minoribus planata, iis marginalisque minoribus abstat.*

Epiphytic; rhizome 5-8 mm diam., compact, radial; rhizome scales 6-10 x 0.5-1.0 mm, linear-lanceolate, yellowish to brown, flaccid, marginally entire; phyllopodia 2-5 mm; fronds (16-) 35-65 cm long; stipes ca. 1/3 of the frond length; stipe scales 2-4 x 0.4-0.6 mm, lanceolate, atropurpureous to black, dispersed, plane, with few long cilia at the base and entire apex;

blades (11-) 22-43 x 2.0-3.6 cm, papiraceous, narrowly elliptic to oblong-elliptic, basically narrow to broadly cuneate, apically acuminate; costal scales same as stipe scales; abaxial blade scales 0.1-0.2 mm diam., as stellate hairs, black, few dense, with long cilia margin; adaxial blade scales same as abaxial but with shorter cilia; marginal scales 1.0-1.5 x 0.3-0.6 mm, lanceolate, dark brown, rolled, dense; veins simple to 1-forked, 1-2 mm apart; hydathodes absent; fertile fronds 25-37 cm long; stipes 2/5-2/3 the frond length; fertile blades 8-16 x 1.2-2.3 cm, elliptic-lanceolate, basically cuneate, apically acuminate; interporangial scales absent.

**Distribution:** Apparently endemic to Bolivia at 1 700-2 200 m.

**Paratypes:** BOLIVIA. **Chiquisaca:** Sud Cinti Province, base oriental del Cerro Bufete, aprox. 200 m al E del Campamento Rinconada del Bufete, 20° 49' 49" N, 64° 22' 28" W, 2 000 m, *L. Arroyo et al. 917* (USZ, UC). **Cochabamba:** Prov. José Carrasco Torrico, 130 km antigua carretera Cochabamba-Villa Tunari, 17° 07' S, 65° 36' W, 2 200 m, *M. Kessler et al. 7247* (LPB?, UC).

This species is similar to *E. erinaceum* (Fée) T. Moore rhizome scales and blade distribution scales, but different in plane (vs. rolled) with ciliate base (vs. entire) stipe scales; narrower [2.0-3.6 cm wide vs. (4-) 5-9 (-11.5) cm] and thinner texture (papiraceous vs. chartaceous to subcoriaceous) blade; shorter (2-4 mm long vs. 3-6 mm) and plane (vs. rolled) costal scales; and shorter (1.0-1.5 mm long vs. 2-4 mm) marginal blade scales.

This species is dedicated to German ecologist Michael Kessler, collector of the type material and many others ferns from Bolivia.

*Elaphoglossum macdougalii*

A. Rojas, sp. nov. (Fig. 6). **Type:** COLOMBIA. **Antioquia:** Mpio. Urrao, Páramo de Prontino, between Llano Grande and Churrumblum, 6° 28' N, 76° 05' W, 3 320-3 550 m, *J. MacDougal et al. 4339* (Holotype: MEXU; Isotype: MO).

*Ab E. petiolato rhizomatis squamis latioribus, necnon frondibus, phyllopodis stipitisque magnis, costae squamis ovata cum margine integra absimilis.*

Epiphytic; rhizome 3-5 mm diam., compact to short creeping, dorsiventral; rhizome scales 4-7 x 0.3-0.5 mm, linear, black, lustrous, marginally entire; phyllopodia 5-10 mm long; fronds (20-) 36-55 cm long; stipes 3/5-2/3 the frond length; stipe scales ca. 1 x 0.5-1.0 mm, ovate, brown, dispersed, marginally entire, mixed with resinous dots; blades (8-) 15-22 x 1.5-2.5 cm, chartaceous, narrowly elliptic to oblong-elliptic, basically cuneate, apically long acuminate; costal scales 1-2 x ca. 1 mm, ovate, pale yellowish, dispersed, opaque, marginally entire to erose, basically cordate; abaxial blade scales absent or very few, with abundant resinous dots; adaxial blade scales 0.5-1.0 x 0.5-1.0 mm, pale yellowish, opaque, marginally entire to few erose; veins simple to 1-forked, 1.0-1.5 mm apart; hydathodes absent; fertile fronds 25-30 cm long; stipes 2/3-3/4 the frond length; fertile blades 8-10 x 1.4-1.7 cm, elliptic, basically cuneate, apically acute; interporangial scales absent.

**Distribution:** Apparently endemic to Colombia. Known only for the type collection.

Differs from *E. petiolatum* (SW.) Urb. in broader (0.3-0.5 mm wide vs. 0.05-0.20 mm) rhizome scales; longer [(20-) 36-55 cm long vs. (10-) 15-30 (-40) cm] fronds; longer (5-10 mm long vs. 2-3 mm) phyllopodia; longer [3/5-2/3 the frond length vs. (1/5-) 1/4-1/3] stipe, ovate (vs. linear-lanceolate), pale yellowish (vs. orange-yellowish) and entire to erose (vs. ciliate) costal scales. Also is similar to *E. angustius* Mickel in fronds shape and size, but differs in longer [3/5-2/3 the frond length vs. 1/6-1/3] stipe; entire to erose (vs. ciliate) stipe and costal scales; and resinous (vs. scaly) abaxial surface. In the entire to erose stipe and costal scales is similar to *E. huacsaro* (Ruíz) H. Christ, but differs in compact to short-creeping (vs. ascending) rhizome; and acuminate to caudate (vs. obtuse to rounded) blade apex.



Fig. 6. *Elaphoglossum macdougallii* (J. MacDougal et al. 4339, MEXU): a) Type specimen. b) Rhizome scales. c) Stipe. d) Costal scale. (scales b-d: 25x).

This species is dedicated to John MacDougal botanist at the Missouri Botanical Garden and collector of the type material.

*Elaphoglossum paramicola*

A. Rojas, sp. nov. (Fig. 7). **Type:** COLOMBIA. **Tolima:** Nevado del Ruiz Massiff, ESE of

Manizales, 5 000 m, J. Archibald 4015 (Holotype: F).

*Ab E. atosquamato lamina ovata cum basi obtusa et apice obtusa vel rotundata divergens.*

Terrestrial; rhizome 1-2 mm diam., long creeping, dorsiventral, branched each 1.5-4 cm; rhizome scales 2-5 x ca. 1 mm, linear-lanceolate, orange to brown, sometimes with



Fig. 7. *Elaphoglossum paramicola* (J. Archibald 4015, F): a) Type specimen. b) Rhizome scale. c) Stipe scale. d) Blade scale. (scales b-d: 25x).

blackish apex, marginally entire to occasionally dispersed dentate; phyllopodia 8-30 mm long; fronds 4.5-11.0 cm long, 1.5-3.0 cm distant; stipes (1/2-) 2/3-3/4 the frond length; stipe scales 1-3 x ca. 1 mm, same as rhizome scales; blades (1.5-) 2.5-5.5 x (1.0-) 1.5-2.5 (-3.0) cm, coriaceous, ovate to rhomboid, basically broadly cuneate, apically obtuse to rounded,

marginally commonly revolute; costal scales 0.5-2.5 mm ovate to stellate, dark brown to blackish, dentate to ciliate margin; blade scales 0.2-1.0 x 0.2-0.5 mm, deltate to stellate, dark brown to blackish, dispersed, marginally dentate to ciliate; veins simple to 1-forked, ca. 1 mm apart, diverging at 65-70° from costa; hydathodes absent; fertile fronds 8-13 cm

long; stipes ca. 3/4 the frond length; fertile blades 2-4 x 1-2 cm, ovate to rhomboid, basically cuneate to obtuse, apically obtuse to rounded; interporangial scales absent.

**Distribution:** Apparently endemic to Colombia at 4 000-5 000 m.

**Paratype:** COLOMBIA. **Pasto (Nariño):** Volcán Galeras, 4 000 m, *T. Plowman 1948* (F).

This species is similar to *E. atosquamatum* Mickel in creeping rhizome, black and dense rhizome scales and shorter fronds, but is distinct

in branched (vs. not branched) rhizome, fronds 1.5-3.0 cm distant (vs. 0.5-1.5 cm), ovate (vs. elliptic) blade, with broadly cuneate (vs. attenuate) base and obtuse to rounded (vs. acuminate) apex. Also is similar to *E. affine* (M. Marten et Galeotti) T. Moore in its creeping rhizome and blade size, but differs in longer (2-5 vs. 2-3 mm) and linear-lanceolate (vs. ovate) rhizome scales with blackish apex (vs. blackish center); ovate to rhomboid (vs. elliptic), basically broadly cuneate (vs. cuneate) and apically obtuse to rounded (acute to obtuse) blades; and bigger



Fig. 8. *Elaphoglossum paxense* (J. Solomon 14954, F): a) Type specimen. b) Stipe scale. c) Costal scale. d) Blade scale. (scales b-d: 25x).

(0.2-1.0 x 0.2-0.5 mm vs. 0.2-0.4 mm diam.) and dark brown to blackish (vs. orange-yellowish) blade scales.

The name refers to habitat of the species.

*Elaphoglossum paxense*

A. Rojas, sp. nov. (Fig. 8). **Type:** BOLIVIA. **La Paz:** Nor Yungas Province, 10 km NE of Chuspipata on the road to Coroico, 16° 16' S, 67° 47' W, 2 300 m, *J. Solomon 14954* (Holotype: F; Isotypes: UC, MO).

*Hac combinatione distinguendum: lamina lanceolata, textura crassiori, laminae basi truncata, hydathodiis manifestis induto.*

Epipetric; rhizome 5-7 mm diam., compact, ascending; rhizome scales 1-3 x ca. 1 mm, ovate, yellowish to brown, marginally entire; phyllopodia absent; fronds (16-) 25-33 cm long; stipes 2/9-2/5 the frond length; stipe scales 1-2 x ca. 0.5-1.0 mm, ovate, brown, opaque, dispersed, marginally entire; blades 12-21 x 4-7 cm, lanceolate, chartaceous to spongiosus, basically truncate equilateral to inequilateral, apically acute to acuminate; costal scales 1-2 x 0.5-1 mm, ovate, brown, dispersed, marginally entire to erose; blade scales 0.5-1 x 0.2-0.4 mm, ovate, light brown, dispersed, basically erose to ciliate; veins few evident, simple to 1-forked, 1-2 mm apart, diverging at 60-70° from costa;



Fig. 9. *Elaphoglossum pseudoherminieri* (R. Moran 5083, F): a) Type specimen. b) Rhizome scale. c) Stipe scale. d) Costal scale. e) Blade scale. (scales b-e: 25x).

hydathodes very evident, black; fertile fronds 25-36 cm long; stipes 2/3-3/4 the frond length; fertile blades 9-12 x 2.3-2.7 cm, lanceolate to lanceolate-oblong, basically truncate to cordiform, apically acute; interporangial scales ca. 1 mm, ovate to rounded, dispersed, marginally ciliate.

**Distribution:** Apparently endemic to Bolivia at 2 300 m. Known only for the type material.

*Elaphoglossum pseudoherminieri*

A. Rojas, sp. nov. (Fig. 9). **Type:** PANAMA. **Darién:** Cerro Pirre Massif, ridge trail up from Cana, 700-900 m, *R. Moran 5083* (Holotype: F; Isotype: MO).

*Ab E. herminieri rhizomatis squamis minoribus, stipitis squamis margine integra, lamina lineari vel lineari-oblancheolata angustiori, laminae squamis minoribus diversa.*

Epiphytic; rhizome 3-5 mm diam., compact, dorsiventral; rhizome scales 5-10 x ca. 1 mm, linear, yellowish to gold, marginally entire to dispersedly long ciliate; phyllopodia 1-3 mm (not visible for the scales); fronds 30-75 cm long; stipes absent or less than 1/15 (rarely to 1/6) the frond length; stipe scales 1.5-4.0 x ca. 0.1-0.2 mm, linear to subulate, dark brown, dispersed, marginally entire; blades 28-70 x 0.7-2.2 cm, linear to linear-oblancheolate, chartaceous to spongiosus, blue-green, basically attenuate, apically acuminate, margin revolute; blade scales absent or 0.1-0.3 mm diam., deltate to stellate, orange, dispersed, marginally ciliate; veins no evident; hydathodes absent; fertile fronds not seen.

**Distribution:** Panama and Colombia? at 700-900 m.

**Paratypes:** PANAMA. **Darién:** Cerro Pirre Massif, ridge trail up from Cana, 700-900 m, *R. Moran 5085* (F, MO), *R. Moran 5089* (F, MO).

Is similar to *E. herminieri* (Bory ex Fée) T. Moore in frond size and blue-green blade, but *E. pseudoherminieri* have shorter (5-10 mm long vs. 15-40 mm) and yellowish to gold (vs. orange) rhizome scales, entire (vs. dentate to ciliate) stipe scales, narrower (0.7-2.2 cm wide

vs. 1.7-4.0 cm) and linear to linear-oblancheolate (vs. linear-elliptic) blade, and smaller (0.1-0.3 mm diam. vs. 0.2-1.0 x 0.2-0.5 mm) blade scales.

*Elaphoglossum solomonii*

A. Rojas, sp. nov. (Fig. 10). **Type:** BOLIVIA. **La Paz:** Murillo Province, Valle del Río Zongo, 36.7 km al N (abajo) de La Cumbre, ca. 2 km al N de la Planta Hidroeléctrica Chururahui, 16° 05'S, 68° 03'W, 1 800 m, *J. Solomon 18827* (Holotype: UC; Isotype: LPB?, MO).

*Ab E. cordifolio rhizomatis squamis minoribus, frondibus minoribus, stipitis squamis sparsis, lamina ovata, fronde fertili iis sterilibus breviori differt.*

Epiphytic; rhizome 2-3 mm diam., compact, dorsiventral; rhizome scales 2-3 x 0.2-0.4 mm, linear-lanceolate, atropurpureous to black, lustrous, marginally entire; phyllopodia 1-3 mm long; fronds (3.5-) 6.0-15.0 cm long; stipes 2/5-3/4 the frond length; stipe scales 2-4 x 0.2-0.4 mm, linear, rolled, atropurpureous to black, patent, dispersed, marginally entire, mixed with hairs 0.1-0.2 mm, glandular, yellowish; blades (2-) 4-9 x (1.5-) 2.0-3.0 cm, ovate, papiraceous, basically cordiform, apically acute to acuminate; abaxial blade scales 0.1-0.3 mm diam., stellate to arachnoid, black, dispersed, margin long ciliate; costal and marginal scales 1-2 x 0.1-0.3 mm, linear, rolled, atropurpureous to black, dense, marginally denticulate, mixed with glandular hairs; adaxial blade surface only with glandular hairs; veins 1-2-forked (rarely simple), 1.5-2.0 mm apart; hydathodes absent; fertile fronds 3-10 cm long; stipes 3/5-4/5 the frond length; fertile blades 0.7-2.5 x 0.5-1.2 cm, ovate to lanceolate, basically cordiform, apically acute to obtuse; interporangial scales absent, with scales only on costa; blade margin without scales or sporangia in 1 mm marginal.

**Distribution:** Endemic to Bolivia at 1 800-3 200 m.

**Paratypes:** BOLIVIA. **Cochabamba:** Incayaita, Pocona, 3 000 m, *J. Steinbach 8675* (F). **Unduavi:** Nord Yungas, 3200 m, *O. Buchtien 415* (F).



Fig. 10. *Elaphoglossum solomonii* (J. Solomon 18827, UC): a) Type specimen. b) Rhizome scale. c) Stipe scale. d) Costal scale. e) Blade margin scales. (scales b-e: 25x).

This species differs from *E. cordifolium* by shorter (2-3 mm long vs. 4-7 mm) rhizome scales, shorter [(3.5-) 6.0-15.0 cm long vs. 12-25 cm) fronds, dispersed (vs. dense) stipe scales, ovate (vs. lanceolate) blade, and fertile fronds shorter than the sterile (vs. longer than the sterile).

This species is dedicated to James Solomon, collector of the type material.

#### NEW COMBINATIONS WITH RANGE EXTENSION

##### *Elaphoglossum beitelii*

(Mickel) A. Rojas, st. nov. *E. crispatum* Mickel var. *beitelii* Mickel, *Brittonia* 39 (3): 316. 1987. Type: Venezuela, Amazonas, *J. Beitel* 85133 (Holotype: NY!; Isotype: MO!).



**Distribution:** Previously known only from Venezuela, but now also from **Colombia**.

**Material of new distribution:** COLOMBIA. Comisaría del Putumayo, above Sibundoy, 2 500 m, A. Alston 8368 (MO).

*Elaphoglossum curvans*

(Kunze) A. Rojas, comb. nov. *Acrostichum curvans* Kunze, Linnaea 9: 30. 1834. Lectotype: Perú, Pampayaco, E. Poeppig 1115 (MO!) (designated here).

*Elaphoglossum nigrocostatum* Mickel, Brittonia 39: 322. 1987. Type: Venezuela, Táchira, J. Steyermark & R. Liesner 118270 (Holotype: MO).

**Distribution:** Previously known from "Venezuela" and Perú, but now also from **Colombia** and **Ecuador**.

**Material of new distribution:** COLOMBIA. Valle del Sombrerito, 1 400 m, L. André 2330 (F). **Antioquia:** Mpio. Urrao, Parque Nacional Natural Las Orquídeas, Vereda Calles, margen derecha con el Río Calles, 6° 32' N, 76° 19' W, 1 450-1 500 m, J. Pipoly et al. 17347 (MO); **Cauca:** Yumbo, S. Herrera 879 (F); Parque Nacional Munchique, km 50-55 along road above Uribe, 1 875-2 256 m, J. Luteyn et al. 7482 (NY); Morales S of Morales, 1 680-1 720 m, F. Pennell & E. Killip 8297 (US); Mpio. Ciclito, West Cordillera, 1 600 m, Xhyan - der 2384 (F). **Cundinamarca:** carretera entre Aguabonita y Fusagasuga, 2 000 m, J. Duque 3306 (MEXU). **El Valle:** La Cumbre, Cordillera Occidental, 1 600-1 800 m, E. Killip 5677 (NY), 1 700-2 200 m, E. Killip 5690 (NY, US). **Huila:** La Plata, 2 800 m, K. Sneidern 2166 (NY). **Nariño:** Río San Juan near junction of Río San Juan drainage, Río Puelmambi, 1 540 m, J. Ewan 16045 (UC). **San Francisco:** Corregimiento Aquitamia, 1 150-1 250 m, F. - negra et al. 4345 (MO). **Santa Marta:** H. Smith 11337 (MO). **Santander Norte:** along road between Pamplona and Chorro Colorado, Via Chiquira at km 128, marker, 7° 22' N, 72° 38' W,

2.580 m, T. Croat 56412 (MO, NY). ECUADOR. Cerro "Ilalo", M. Acosta 14054 (F). **Carchi:** Maldonado, 1 500 m, M. Madison 3908 (NY); Carretera entre Maldonado y Chical, frontera con Colombia, 0° 56' N, 78° 08' W, 1 500 m, W. Palacios & Rubio 7265 (MO, QC-NE?, UC). **Loja:** trails ca. 5 km ENE of San Pedro de Vilcabamba, from "El Bosque" to Quebrada Romerillos and Banderilla, 4° 14' S, 79° 10' W, 2 000-2 200 m, B. Øllgaard & H. Navarrete 105956 (AAU?, NY, QCA?). **Morona-Santiago:** Morona Cantón, near city of Macas, 2° 20' S, 78° 08' W, 1 100 m, A. Fay & L. Fay 4083 (MO, UC). **Napo:** Quijos Cantón, Baeza, 0° 30' S, 77° 50' W, 2 000 m, A. Fay & L. Fay 2658 (MO); El Chaco Cantón, on the Baeza-Lago Agrio road, turn E to the bridge over Río Quijos to Sala Honda, near the bridge, 0° 24' S, 77° 49' W, 1 560 m, A. Fay & L. Fay 3905 (MO); Archidona Cantón, Southern slopes of Volcán Sumaco, along Hollín-Loretp road, 0° 35' S, 77° 40' W, 1 200 m, R. Moran & Rohrbach 5163 (MO, UC), R. Moran & Rohrbach 5171 (MO, UC). **Pichincha:** km 10 Nono-Tandayapa, 2 320 m, C. Dodson & W. Clendenin 10754 (F); Quito-Santo Domingo via Chiriboga, km 30, 2 950 m, C. Dodson & W. Clendenin 10868 (F); Quito-Santo Domingo via Chiriboga, km 82, 1 400 m, C. Dodson & W. Clendenin 10981 (F).

*Elaphoglossum eutecnum*

(Mickel) A. Rojas, st. nov. *Elaphoglossum boryanum* (Fée) T. Moore var. *eutecnum* Mickel, Brittonia 37 (3): 266. 1985. Type: Trinidad, Tucuche, Britton et al. 1300 (Holotype: NY!; Isotype: NY).

**Distribution:** Previously known from Venezuela, Granada, Guadalupe, Monserrat and Trinidad, but now also from **Colombia**.

**Material of new distribution:** COLOMBIA. **Nariño:** Mpio. Ricaurte, Corregimiento de Altaquer, 13-16 km W de Ricaurte, ca. 1° 14-14' N, 78° 1-3' W, 1 045-1 175 m, H. Churchill et al. 18313 (NY).

## NEW RECORDS

*Elaphoglossum acrocarpum*

(Mart.) T. Moore, Index Fil. 4. 1857. *Acrostichum acrocarpum* Mart., Icon. Pl. Crypt. 85, t. 23. 1834.

*E. gamboanum* A. Rojas, Brenesia 47-48: 3. 1997. Type: Costa Rica, Limón, A. Rojas et al. 2364 (Holotype: INB!; Isotypes: CR!, MO, NY, US).

**Distribution:** Previously known from "Mexico", "Costa Rica", Venezuela and Brazil, but now also from **Ecuador** and **Perú**.

**Material of new distribution:** ECUADOR. **Zamora-Chinchipe:** New road Loja-Zamora, trail to Podocarpus patch at Quebrada del Diablo, 2 000-2 400 m, H. Werff & W. Palacios 9253 (MO, UC). **PERU. Junín:** Satipo, Gran Pajonal, E of Chequitavo on trail to Kotampaz, 10° 45' S, 74° 23' W, D. Smith 6733 (MO, UC).

The Mexican specimen (*J Rzedowsky & R. McVaugh 10*, ENCB) is different from others because the fertile fronds scales are orange-yellowish (vs. blackish).

*Elaphoglossum amazonicum*

Atehortúa ex Mickel, Fieldiana Bot., n. s. 27: 122. 1991. Type: Perú, San Martín, Zepelacio, near Moyobamba, G. Klug 3330 (Holotype: US!; Isotypes: BM, MO!, NY!).

**Distribution:** Previously known only from Perú, but now also from **Ecuador**.

**Material of new distribution:** ECUADOR. **Napo:** Cantón Putumayo, Río Aguarico, town on Dureno, 1 500 ft., T. Plowman et al. 4017 (US).

*Elaphoglossum ambiguum*

(Mett. ex H. Christ) Alston, J. Wash. Acad. Sci. 48: 234. 1958. *Acrostichum ambiguum* Mett. ex H. Christ, Neue Denkschr. Allg. Schweiz. Ges. Gesamten Naturwiss. 36: 60. 1899. Type: Venezuela, A. Fendler 283 (US!).

**Distribution:** Previously known from Panama?, Colombia, Venezuela, Ecuador and Bolivia, but now also from **Perú** and **Brazil**.

**Material of new distribution:** PERU. **Cundinamarca:** Contumazá, Bosque Cachil, 2 500 m, A. Sagástegui et al. 15907 (F). **BRAZIL. Paraná:** Jáguaiahya su Silvila, 760 m, P. Dusén s. n. (F).

Grayum (pers. comm.) think that this species is not valid (art. 34 of International Code of Botanical Nomenclature) because was published as a synonym of *Acrostichum flaccidum*, on this case is necessary a new name for this species.

*Elaphoglossum andicola*

(Fée) T. Moore, Index Fil. 5. 1857. *Acrostichum andicola* Fée, Mém. Foug., Hist. Acrostich. 2: 28, t. 2, F. 1. 1845.

**Distribution:** Previously known from Costa Rica, Colombia and Venezuela, but now also from **Ecuador**, **Perú** and **Bolivia**.

**Material of new distribution:** ECUADOR. Galápagos Island, Albemarle Island, 3 150 ft., A. Stewart 775 (US). **Bolívar:** Simiatug, Had. Talahua, 2 300 m, C. William & R. Summers 656 (F). **Cotopaxi:** W and N of Pilaló, on Quevedo-Latacunga road, 0° 56' S, 76° W, 2 350-2 450 m, L. Holm et al. 3394 (AAU?, UC); around Pilalo, 0° 57' S, 79° 02' W, 2 400m, L. Holm & S. Jeppesen 1368 (F). **PERU. Amazonas:** Luya, Jaípe, Fundo El Paraíso, 1 780 m, C. Díaz & J. Campos 3616 (MO); ca. 12-18 trail km E of La Peca in Serranía de Bagua, 1 800-1 950 m, A. Gentry et al. 22886 (F); Prov. Chachapoyas, Cerros Calla Calla, west side, 45 km above Balsas, midway on the road to Leimebamba, 3 100 m, P. Hutchison & J. Kennet 5796 (F, MO, UC). **Cajamarca:** Prov. Cutervo, La Pucarilla, entre Socota y San Andrés, 2 500 m, I. Sánchez et al. 5991 (F). **Cusco:** Urubamba, Machu Pichu, on a hillside above the Río Mandor, 3 km from km 114 of the Urubamba Railroad, 2 450 m, B. Peyton & S. Peyton 1304 (MO). **Junín:** Tarma, Agua Dulce, 1 900 m, Woytkowski 35437 (UC). **Pasco:** Oxapampa, San Alberto, Cordillera de Yanachaga, 2 300-2 500 m, H. Werff et al. 8426 (MO). **BOLIVIA. Cochabamba:** Prov. José Carrasco Torrico, 8 km de Empalme hacia Siberia, 17° 46' S, 64° 48' W, 2 900 m, M. Kessler et al. 9191 (LPB?, UC). **La Paz:** North

Yungas Prov., off the La Paz- Yolosa Road, along road, about 1 km E of Cotapata Gas Station, and on a trail on left (from La Paz), roughly north, 16° 17' N, 67° 50' W, 3 200 m, *A. Fay & L. Fay 2995* (MO).

*Elaphoglossum angustius*

Mickel, *Fieldiana Bot.*, n. s. 27: 124. 1991. Type: Perú, San Martín, Zepelacio, near Moyobamba, *G. Klug 3503* (Holotype: NY!; Isotypes: F!, GH, K).

**Distribution:** Previously known from Perú and Bolivia, but now also from **Colombia**, **Ecuador** and **Brazil**.

**Material of new distribution:** COLOMBIA. *Duult 2462* (F). ECUADOR. **Carchi:** environs of Chical, 12 km below Maldonado on the Río San Juan, 1° 04' N, 78° 17' W, 1 200 m, *M. Madison et al. 4183* (F, SEL?). BRAZIL. **Rondonia:** along Río Dos Pachoás Novas, just above and below the first Cachoeira, ca. 220 m, *W. Anderson 12274* (F).

*Elaphoglossum atrobarbatum*

Mickel, *Novon* 2: 368. 1992. Type: Panama, Panamá, *I. Valdespino & J. Aranda 167* (Holotype: NY!; Isotype: UC!).

**Distribution:** Previously known only from Panama, but now also from **Colombia**.

**Material of new distribution:** COLOMBIA. **Antioquia:** Mpio. San Francisco, Corregimiento Aquitania, 1 150-1 250 m, *Fonnegra et al. 4345* (MO).

*Elaphoglossum atrorubens*

Mickel, *Brittonia* 39: 314. 1987. Type: Venezuela, Mérida, *L. Ruiz and M. López 1754* (Holotype: NY!).

**Distribution:** Previously known only from Venezuela, but now also from **Colombia** and **Ecuador**.

**Material of new distribution:** COLOMBIA. **Cauca:** Parque Nacional Nevado del Huila, ca. 23-31 km E of Tocueyo, 3° 2' N, 76°

2' W, 3 075-3 300 m, *J. Luteyn et al. 10324* (NY). ECUADOR. **Napo:** Oyacachi, 5 km después del paso, 0° 12' S, 78° 06' W, 3 500 m, *H. Navarrete 1373* (AAU?, NY, QCA?), *H. Navarrete 1402* (AAU?, NY, QCA?). **Pichincha:** Ruminahui Cantón, Bosque Protector Pasochoa, línea de cumbre de Pasochoa, 0° 22' S, 78° 27' W, 3 870-3 900 m, *Cerón & Alarcón 12337* (QCNE?, MO).

*Elaphoglossum atosquamatum*

Mickel, *Brittonia* 39: 315. 1987. Type: Venezuela, Táchira, *J. Steyermark et al. 98348-A* (Holotype: NY!; Isotype: MO!).

**Distribution:** Previously known from Colombia, Venezuela and Perú, but now also from **Costa Rica** and **Dominican Republic**.

**Material of new distribution:** COSTA RICA. **Cartago:** Cantón de Paraíso, investigación area of the CATIE, 9° 33' 30" N, 83° 41' 30" W, 2 600-2 700 m, *J. Bittner 142* (CR); southern slopes of Volcán Turrialba, near the finca del Volcán Turrialba, 2 000-2 400 m, *P. Standley 35252* (US), *P. Standley 35253* (US), *P. Standley 35310* (US); Volcán Turrialba, 3.300 m, *A. Torres 24* (US), *A. Torres 134* (US). **Limón:** Cordillera de Talamanca, southwestern foot of Cerro Kámuk, 9° 16' N, 83° 02' 30" W, 3 200-3 350 m, *G. Davidse et al. 25953* (CR, MO, UC). **Cartago/San José:** Cantones de Paraíso/Pérez Zeledón, Carretera Interamericana, entre Cerro Estaquero y la entrada a las torres, 9° 33' 35" N, 83° 45' 25" W, 3 100-3 300 m, *A. Rojas 4522* (INB); road from Cartago to San Isidro del General (Pan American HWY, Rt 2), km 87-88, ca 1 km NW of Asunción, 3 200 m, *A. R. Smith & T. Béliz 2021* (UC); Interamerican Hwy., ca. 1.5 km NW of Restaurant La Georgina, 3 100 m, *J. Utley & K. Utley 2967* (CR). **San José:** Cerro Chirripó, SW slopes, along trail from Canaán to summit, nr. La Caverna, 9 800-10 300 ft., *A. Evans et al. 88* (US). DOMINICAN REPUBLIC. La Vega, ca. 13 km from Valle Nuevo on road to San José de Ocoa, 2 500 m, *G. Gastony et al. 717* (US).

*Elaphoglossum auricomum*

(Kunze) T. Moore, Index Fil. 7. 1857. *Acrostichum auricomum* Kunze, Linnaea 9:28. 1834. Type: Perú, *Poeppig s. n.* (fragm. P!).

**Distribution:** Previously known from Mexico, Guatemala, Honduras, Costa Rica, Colombia, Venezuela, Ecuador, Perú, Bolivia and La Española, but now also from **French Guyana**.

**Material of new distribution:** FRENCH GUYANA: **Mont Atachi Bacca:** Région de l'Inini, cam II, 3° 33'N, 53° 55'W, 500 m, *G. Cremers et al.* 1989 (B?, CAY?, MO, NY, P?, U?, US), *G. Cremers et al.* 10161 (B?, CAY?, MO, NY, P?, U?, S?).

*Elaphoglossum balansae*

C. Chr., Index Fil. 303. 1905. Type: Paraguay, *B. Balansa 390* (Holotype: P-n.s.).

*Elaphoglossum tenerum* (Baker) H. Christ, Mon. Elapho.: 62. 1899. *Acrostichum tenerum* Baker, J. Bot. 302. 1878. (no Kunh, Linnaea 36: 52. 1869).

**Distribution:** Previously known from Brazil and Paraguay, but now also from **Colombia**. (probably also in Venezuela).

**Material of new distribution:** COLOMBIA. **Antioquia:** Mpio. Urrao, Parque Nacional Natural Las Orquídeas, Quebrada Honda, en el filo al NW de la Cabaña Calles, 6° 27' N, 76° 14' W, 1 330 m, *J. Pipoly et al.* 16933 (JAUM?, MO); Mpio. Urrao, zona limitrofe del Parque Nacional Natural Las Orquídeas, Vereda Calles, Alto de Palmitas, ca. 1 km de la Cabaña de Calles del INDERENA, 6° 32' N, 76° 19' W, 1 300-1 400 m, *J. Pipoly et al.* 17456 (JAUM?, MO), *J. Pipoly et al.* 17502 (JAUM?, MO), *J. Pipoly et al.* 17521 (JAUM?, MO); Mpio. Urrao, Parque Nacional Natural Las Orquídeas, Vereda Calles, 6° 32' N, 76° 19' W, 1 350-1 450 m, *J. Pipoly et al.* 17741 (JAUM?, MO).

*Elaphoglossum boquetense*

Mickel, Novon 2: 369. 1992. Type: Panama, Chiriquí, *J. Dwyer & W. Hayden 7706* (Holotype: NY!; Isotype: MO!).

**Distribution:** Previously known only from Panama, but now also from **Venezuela**.

**Material of new distribution:** VENEZUELA. **Trujillo:** road to peak above Bocono Mun. Park, 9 000 ft., *A. Fay 1602* (MO), *A. Fay 1603* (MO); Páramo de Guaramacal, *F. Ortega 2632* (MO); al S de Boconó, en la vertiente N de Guaramacal, en los alrededores de la Laguna de los Cedros, en la toma de agua de INOS, *F. Ortega et al.* 2957 (MO); Boconó, 22 km SE of Boconó, road to Guaramacal, ca. 9° 12' N, 70° 10' W, 2 300 m, *A. Smith et al.* 1526 (MO, UC).

*Elaphoglossum burchellii*

(Baker) C. Chr., Index Fil. 304. 1905. *Acrostichum burchellii* Baker, Syn. Fil. 401. 1868. Type: Brazil, *W. Burchell 5155* (Holotype: K!).

**Distribution:** Previously known from Colombia and Brazil, but now also from **Costa Rica**, **Venezuela**, **Perú** and **Dominican Republic**.

**Material of new distribution:** COSTA RICA. **Puntarenas:** Buenos Aires, Cordillera de Talamanca, Río Kuyé, near by the camp upstream, 9° 17'30" N, 83° 16'00" W, 1 530 m, *J. Bittner 1722* (CR, MO, NY); Buenos Aires, Escalera, camino a Olán, 9° 15'50" N, 83° 13' 30" W, 1 600 m, *M. Valerio 64* (CR, MO). **San José:** San Pablo, Cerro Abejonales, *M. Chavarría & G. Herrera 24* (MO). VENEZUELA. *H. Cristiana 13563* (F). PERU. **Amazonas:** Bangara, 8 km above Pedro Ruiz (Jazan) on road to Pomacocha, 5° 55'S, 77° 55' W, 1 500-1 600 m, *S. Knapp & Alcorn 7550* (MO). DOMINICAN REPUBLIC. *M. Coneja s. n.* (US).

*Elaphoglossum castaneum*

(Baker) Diels, Nat. Pflanzenfam 1: 333. 1899. *Acrostichum castaneum* Baker, J. Linn. Soc. Bot. 15: 166. 1877. Type: Ecuador, Corazón, *L. Sodiro s. n.* (Holotype: K-n.s.; Isotypes: B, S, US!).

**Distribution:** Previously known from Costa Rica, Panama, Colombia, Ecuador, Perú and Bolivia, but now also from **Venezuela**.

**Material of new distribution:** VENEZUELA. **Táchira:** Montaña of Río Táchira at base of Páramo de Tamá, between Betania and Tamá, by Colombian-Venezuelan boundary, 2 430 m, *J. Steyermark 57179* (F).

*Elaphoglossum chloödes*

Mickel, Fieldiana Bot. n. s. 27: 127. 1991. Type: Perú, Ayacucho, *E. Killip & A. Smith 22391* (Holotype: NY!; Isotype: US!).

**Distribution:** Previously known only from Perú, but now also from **Ecuador**.

**Material of new distribution:** ECUADOR. **Pichincha:** Calacali-Nanegalito road, 8° 0' S, 78° 35' W, 1850 m, *Billier & Jadin 6735* (BR, MO).

*Elaphoglossum chrysopogon*

Mickel, Brittonia 39: 316. 1987. Type: Venezuela, Aragua, *A. Fendler 279* (Holotype: NY!; Isotype: MO!).

**Distribution:** Previously known only from Venezuela, but now also from **Colombia**.

**Material of new distribution:** COLOMBIA. **Cundinamarca:** 7 km NNW of Sibate, 2 530 m, *R. Tryon & A. Tryon 6091* (GH, US). **Norte de Santander:** Páramo del Hatico, in route from Toledo to Pamplona, about 2 900 m, *E. Killip & A. Smith 20689* (UC, US).

*Elaphoglossum cinctum*

Rosenst., Fedde Rep. 25: 63. 1928.

**Distribution:** Previously known from Colombia, Perú and Bolivia, but now also from **Panama**.

**Material of new distribution:** PANAMA. **Bocas del Toro:** Oleoducto Road, near continental divide, Fortuna Dam area, 8° 48' N, 82° 12' W, 1 000 m, *H. Churchill et al. 4612* (MO); along trail on divide separating Chiriquí and Bocas del Toro, 8° 45' N, 82° 15' W, *G. McPherson 7239* (MO). **Chiriquí:** Fortuna Dam area, near forestry experiment station, S of Lake, 8° 45' N, 82° 15' W, 1 150 m, *G. McPherson 7872* (MO); slopes NW of conflu-

ence of Río Hornito and Río Chiriquí, ca. 8° 44' N, 82° 13' W, 1 050-1 100 m, *W. Stevens 18358* (MO). **Panamá:** 2.4 mi. beyond Cerro Jefe, on road to Altos de Pacora, 800-1 000 m, *T. Croat 22656* (F, MO).

Any specimens of Perú have been confused and bat identified as *E. elegantipes* Mickel, but the first species belong to the Section *Polytrichia* Subsection *Hybrida* and the second species belong to the Section *Elaphoglossum* Subsection *Pachyglossa*.

*Elaphoglossum corderoanum*

(Sodirol) H. Christ, Monogr. Elapho. 81. 1899. *Acrostichum corderoanum* Sodirol, Crypt. Vasc. Quit. 470. 1893. Tipo: Ecuador, Pichincha, Ríobamba, *L. Sodiro s. n.* (HT: Q? or K?).

**Distribution:** Previously known only from Ecuador, but now also from **Costa Rica**, **Panama** and **Colombia**.

**Material of new distribution:** COSTA RICA. **Alajuela:** Quisarrá, above lechería on Volcán Poás, 7 500 ft., *H. Stork 3371* (UC). **Cartago:** Cantón de Paraíso, Investigation Area of the CATIE, 9° 33' 30" N, 83° 41' 30" W, 2 600-2 700 m, *J. Bittner 156* (NY), *J. Bittner 180* (NY); Irazú W, 2 000 m, *L. Brade 184* (NY, UC); E of Irazú, 9 500 ft., *C. Lankester 2078* (US); El Guarco, Reserva Forestal Río Macho, Cordillera de Talamanca, Tres de Junio, San Isidro, 9° 40' 50" N, 83° 51' 10" W, 2 670 m, *A. Rojas 329* (INB); Cordillera de Talamanca, cerca de Villa Mills, *Merz 218* (CR); S slope of Volcán de Turrialba, near the finca del Volcán de Turrialba, 2 400-2 600 m, *P. Standley 35349* (US); E of Irazú, 9 500 feet, *H. Stork 2078* (UC); San Cristóbal Road, SW of Cartago, 8000 ft., *H. Stork 2192* (UC); Cerro Cuericí, 3010 m, *Y. Widmer 414* (NY). **Cartago/San José:** Cerro de La Muerte, Pensión Georgina, *T. Croat 850* (CR); along Int. Hwy., ca. 15-20 km SE by road to El Empalme, ca. 2 600 m, *D. Lellinger & J. White 1171* (US); at km 60 on Pan American Hwy., S of San José, on road to San Isidro del General, *R. Lloyd 4260* (NY); slope behind Hotel La Georgina, 8 100 ft., *R. Lloyd 4270* (NY); Interamerican Hwy., vicinity

of Villa Mills and 1 km NW (vicinity of Hotel La Georgina), 2 800-2 900 m, *J. Mickel 2180* (NY). **Puntarenas:** Dota, camino a Providencia de Dota, entrando por Ojo de Agua, frente al Restaurant Chespiritos, 9° 37' 00" N, 83° 49' 10" W, 2 500-2 950 m, *A. Rojas & M. Coto 2730* (CR, INB, MO, NY, US, UC); carretera de Cartago a San Isidro del General (Carretera Interamericana), km 96-97, aprox., a 1,5 km de Villa Mills (cerca de Siberia), 2 900 m, *A. Smith 2052* (CR, UC); km 69, or 18 km SE of El Empalme, 2 600 m, *A. Smith & T. Béliz 2095* (CR, MO, UC?). **San José:** Cerro Chirripó, SW slopes along ridge trail from Canaán to summit, 8 500-1 000 ft., *A. Evans et al. 85a* (US); Cerro de La Muerte, near Villa Mills, *C. Seidenschmur 226* (NY); *C. Seidenschmur 242* (NY); road from Cartago to San Isidro del General (Pan American Hwy., Rte. 2), km 96-97, ca. 1.5 km S of Villa Mills (near Siberia), 2 900 m, *A. Smith & T. Béliz 2052* (UC); San Cristóbal road, 8 000ft., *H. Stork 2192* (US). PANAMA. **Chiriquí:** above Guadalupe, ca. 2 km N of Cerro Punta, 8° 52' N, 82° 33' W, 2 200 m, *P. Maas & R. Dressler 4852* (MO, U?). Above Camp Aguacatal, E slope of Chiriquí Volcano, 2 400-2 500 m, *W. Maxon 5297* (US). COLOMBIA. **Cundinamarca:** Macizo de Sumapáz, Cuchilla La Rabona, 3 900-3 950 m, *S. Diaz et al. 2886* (COL, MO).

*Elaphoglossum correae*

Mickel, Novon 2: 372. 1992. Type: Costa Rica, Heredia, *R. Lloyd 4284* (Holotype: NY!).

**Distribution:** Previously known from Costa Rica and Panama, but now also from **Belize**.

**Material of new distribution:** BELIZE. **Toledo:** Southern Maya Mountains, Blade nature Reserve, trail from Central Snake, Creek Camp to Roochire Selipan Archeological site, 16° 27' 48" N, 88° 58' 42" W, 450 m, *G. Davidse & A. Buchanan 36941* (MO); Maya Mountains, Richardson Peak, 16° 36' N, 88° 47' W, 800-920 m, muestra mixta con *Elaphoglossum* sp., *G. Davidse & A. Brant 32241* (MO), *G. Davidse & A. Brant 32242* (MO).

*Elaphoglossum crassipes*

(Hieron.) Diels, Nat. Pfl. 1: 334. 1899. *Acrostichum crassipes* Hieron., Engl. Jahrb. 22: 409. 1896.

**Distribution:** Previously known from Argentina and Paraguay, but now also from **Bolivia**.

**Material of new distribution:** BOLIVIA. **Yungas:** *A. Bang 260* (F), *A. Bang 434* (F).

*Elaphoglossum crispatum*

Mickel, Brittonia 39: 316. 1987. Type: Venezuela, Mérida, *A. Smith 954* (UC!).

**Distribution:** Previously known only from Venezuela, but now also from **Colombia**.

**Material of new distribution:** COLOMBIA. **Santa Marta:** Sierra de Maca, 4 000-5 000 ft., *H. Werff & Ortíz 5918* (Holotype: MO; Isotype: MO).

*Elaphoglossum decursivum*

Mickel, Brittonia 32: 334. 1980. Type: Mexico, Oaxaca, *J. Mickel 6417* (Holotype: NY!; Isotypes: ENCB, NY, UC, US!).

**Distribution:** Previously known from Mexico, Guatemala and Costa Rica, but now also from **Belize, Honduras, Nicaragua, Panama, Colombia, Haití** and **Santo Domingo**.

**Material of new distribution:** BELIZE. **Toledo:** Southern Maya Mountains, Bladen Nature Reserve, ridge just S of the main divide of the Maya Mountains, Augusta Divide Camp, *G. Davidse & D. Holland 36729* (MEXU); Southern Maya Mountains, Bladen Nature Reserve, West Snake Creek, 16° 27' 24" N, 89° 01' 01" W, 500 m, *D. Holland & Kid 90* (MO); along divide of Maya Mountains, Bladen Nature Reserve, Medium Height, 16° 31' N, 88° 57' W, 950-1 000 m, *B. Holst et al. 5204* (NY); Columbia River Forest Reserve, Lettle Quartz Ridge, SW slopes, NE of Camp 1, 16° 23' 25" N, 89° 06' 40" W, 800-850 m, *B. Holst 5924* (SEL, MO). HONDURAS. **Comayagua:** near El Achote, hills above pains of Siguatepeque,

1 350 m, *T. Yuncker et al.* 5977 (NY, UC, US). **Francisco Morazán:** Cerro Uyuca, 1 650-2 000 m, *C. Morton* 7189 (MO). NICARAGUA. **Zelaya:** Costado S del Cerro La Pimienta, N del Cerro Hormiguero, a orillas del Caño Hormiguero, 13° 44' 45" N, 84° 59' 45" W, 800-900 m, *A. Grijalva* 297 (CR, HNMN?, MO); Caño El Hormiguero, ca. 13° 46' N, 84° 59' W, ca. 750-800 m, *J. Pipoly* 5922 (CR, MO). PANAMA. **Bocas del Toro:** along road between Gualaca and Chiriquí Grande, 6.6 mi N of middle of bridge over Fortuna Lake, 8° 45' N, 82° 18' W, 780 m, *T. Croat* 66766 (MO). **Chiriquí:** 2.5 km from Cuesta Piedra along Río Monte road, *J. Folsom* 3981 (MO, UC); vicinity of El Boquete, 1 000-1 300 m, *W. Maxon* 5067 (US). **Darién:** Parque Nacional del Darién, ridge between N and S branches of Río Pucuro, N of Old Village of Tacarcuna, ca. 18 km E of Pucuro, 8° 05' N, 77° 16' W, 600-800 m, *B. Hammel et al.* 16463 (MO). **Veraguas:** Cerro Tute, ridge up from former Escuela Agrícola, Santa Fé, 81° 05' N, 8° 35' W, 800-1 100 m, *G. Hamilton & Krager* 3944 (MO). COLOMBIA. **El Valle:** Cordillera Occidental, La Cumbre, 1 900-2 100 m, *E. Killip* 11624 (US), *E. Killip & T. Hazen* 11130 (NY). HAITÍ. Massif de La Pelle, Tr. Prebe a Piquands, Port au Prince, mosne malanga, shady gulch, 1 200 m, *L. Ekman* 7375 (US). SANTO DOMINGO. **Monte Cristi:** Cordillera Central, Mansión, ridge between Río Cenobí and Río de la Cidra, 800 m, *E. Ekman* 12698 (F, US).

*Elaphoglossum delasotae*

Mickel, *Brittonia* 45: 216. 1993. Type: Colombia, Chocó, *D. Lellinger & E. Sota* 736 (Holotype: US!).

**Distribution:** Previously known only from Colombia, but now also from **Perú** and **Bolivia**.

**Material of new distribution:** PERU. **Cusco:** Quillabamba, Santa Teresa, on a hill-side called Mandornilloc, 0.5 km W of La Playa, 2 615 m, *B. Peyton & S. Peyton* 1267 (MO); Oxapampa, trail to summit of Cordillera Yanachaga via Río San Daniel, 10° 25' S, 75° 27' W, 2 500 m, *D. Smith et al.* 7833 (MO). BOLIVIA.

**Cochabamba:** Provincia José Carrasco Torrico, 115 km antigua carretera Cochabamba-Villa Tunari, 17° 08' S, 65° 38' W, 2 500 m, *M. Kessler et al.* 6960 (LPB?, UC); Provincia José Carrasco Torrico, 118 km antigua carretera Cochabamba-Villa Tunari, 17° 08' S, 65° 38' W, 2 300 m, *M. Kessler et al.* 7098 (LPB?, UC); Provincia José Carrasco Torrico, 123 km antigua carretera Cochabamba-Villa Tunari, 17° 08' S, 65° 37' W, 2 100 m, *M. Kessler et al.* 7123 (LPB?, UC). **La Paz:** Murillo Province, Zongo Valley, 1.6 km down the valley from Sainani, 16° 07' S, 68° 05' W, 2 100 m, *A. Fay & L. Fay* 2898 (MO, UC), *A. Fay & L. Fay* 2904 (MO, UC).

*Elaphoglossum dendricola*

(Baker) H. Christ, *Mon. Elaph.* 94. 1899. *Acrostichum dendriculum* Baker, *Syn. Fil.* 521. 1874.

**Distribution:** Previously known only from Colombia, but now also from **Ecuador**.

**Material of new distribution:** ECUADOR. **Carchi:** Maldonado-Tulcán road, ca. km 30, 2 900-3 100 m, *L. Werling & S. Leth* 243 (F).

Probably this species is coespecific with *E. vulcanicum*.

*Elaphoglossum doanense*

L. D. Gómez, *Revista Biol. Trop.* 20: 181. 1972. Type: Costa Rica, Cartago, *L. Gómez* 1307 (Holotype: CR!).

**Distribution:** Previously known from Costa Rica, Panama, Colombia and Venezuela, but now also from **Ecuador**.

**Material of new distribution:** ECUADOR. **Zamora-Chinchipe:** Parque Nacional Podocarpus, Quebrada Río San Francisco, at new road (Loja-Zamora), 3° 58' S, 79° 05' W, *B. Øllgaard* 74977 (AAU?, NY, QCA?).

*Elaphoglossum dombeyanum*

(Fée) T. Moore *et Houlst.*, *Gard. Mag. Bot.* 3: 95. 1851. Type: Venezuela, *Linden s.n.* (not localized).

**Distribution:** Previously known from Colombia and Venezuela, but now also from **Ecuador**.

**Material of new distribution:** ECUADOR. Cordillera de Quito, *Jameson s. n.* (US); Andes of Quito, *Jameson 88* (NY). **Bolívar:** Had. Talanva, Simiatug, 3 400 m, *C. William & R. Summers 577* (F). **Carchi:** road Tulcán-Maldonado, W of the pass (base of Volcán Chiles), 0° 49' N, 78° W, 3 650 m, *B. Øllgaard & H. Balslev 8406* (F).

*Elaphoglossum eriopus*

Mickel, *Brittonia* 39: 318. 1987. Type: Venezuela, Portuguesa, *A. Smith 1145* (Holotype: UC!).

**Distribution:** Previously known only from Venezuela, but now also from **Colombia** and **Ecuador**.

**Material of new distribution:** COLOMBIA. **Meta:** above Villavicencio, 950 m, *A. Alston 7669* (MO); Cordillera de Macarena, (extremo NE), Macizo Renjifo, faldas orientales, 600-1 300 m, *J. Idrobo & R. Evans 877* (F). ECUADOR. **Loja:** Trails ca. 5 km ENE of San Pedro de Vilcabamba, from "El Bosque" to Quebrada Romerillos and Banderilla 4° 14' S, 79° 10' W, 2 000-2 200 m, *B. Øllgaard & H. Navarrete 105956* (AAU?, NY, QCA?).

*Elaphoglossum erythrolepis*

(Fée) T. Moore, *Index Fil.* 9. 1857. *Acrostichum erythrolepis* Fée, *Mém. Foug.* 2: 60. 1845. Type: Perú, *J. Dombey s. n.* (Holotype: P-n.s.).

**Distribution:** Previously known from Ecuador and Perú, but now also from **Colombia**.

**Material of new distribution:** COLOMBIA. **Cauca:** El Tambo, 1 700 m, *K. Sneidern 384* (NY). **Cundinamarca:** Bogotá-El Colegio road, km 7-10, 2 225 m, *J. Luteyn & M. Lebrón 7714* (NY); Guasca, Páramo de Guasca, *M. Murillo & L. Fayad 134* (NY). **Huila:** Cordillera Oriental, E of Neiva, *H. Rusby & F.*

*Pennell 590* (NY). **Santander:** between El Roble and Tona, 1 500-1 900 m, *E. Killip & A. Smith 19436* (NY). **Tolima:** road to Nevado de Tolima, NNW of Ibagué, ca. 17-19 km beyond juntas to end of road, 2 500-2 750 m, ca. 4° 35' N, 75° 25' W, *J. Luteyn et al. 10623* (NY).

*Elaphoglossum fuliginosum*

Mickel, *Novon* 2: 374. 1992. Type: Costa Rica, San José, *J. Taylor & C. Taylor 11339* (Holotype: NY!).

**Distribution:** Previously known only from Costa Rica, but now also from **Venezuela**.

**Material of new distribution:** VENEZUELA. **Mérida:** Andes Venezolanos, La Montaña, study area, 1/2 km S of La Montaña Teleférico Station, *C. Kelly & Lughadha 8702* (NY).

*Elaphoglossum glabellum*

J. Sm., *London J. Bot.* 1: 197. 1842. Type: Guyana, *Schomburgk 477* (Holotype: BM-n.s.; Isotype: US!).

**Distribution:** Previously known from México, Costa Rica, Panamá, Colombia, Venezuela, Guyana, Suriname, Ecuador, Perú, Bolivia and Antilles, but now also from **El Salvador** and **Nicaragua**.

**Material of new distribution:** EL SALVADOR. **Ahuachapán:** Sierra de Apaneca, in the region of Finca Colima, *P. Standley 20172* (US). NICARAGUA. **Granada:** lado NW of Volcán Mombacho, Finca San Joaquín, 11° 50' N, 85° 59' W, 800-1 000 m, *P. Moreno & J. Henrich 8483* (HNMN?, MO); Volcán Mombacho, *J. Greenman & M. Greenman 5795* (MO). **Jinotega:** Macizo de Peñas Blancas, top and N slope of steep ridge SW of finca of Manuel Estrada (El Cielo), S of Río Gusaneras, ca. 13° 15' N, 85° 42' W, 1 200-1 330 m, *W. Stevens & B. Krukoff 11543a* (MO).

Venezuela, Guyana and Suriname have plants with more compact rhizome and



narrower fronds, for this reason probably the Central American material correspond to another species.

*Elaphoglossum gloeorrhizum*

Mickel, Novon 2: 374. 1992. Type: Costa Rica, San José, *J. Taylor & C. Taylor 11339* (Holotype: NY!).

**Distribution:** Previously known from Honduras and Costa Rica, but now also from **Venezuela**.

**Material of new distribution:** VENEZUELA. **Miranda:** Parque Nacional "El Avila", quebrada que sigue a Lagunazo, 10° 32.8' N, 66° 52' W, 2 200 m, *Meier 2850* (NY). **Yaracuy:** Distr. Nirgua, Serranía Santa María-Cerro La Chapa, 6 km al N de Nirgua, 10° 12' N, 68° 33' W, 1 200-1 350 m, *Meier et al. 3914* (NY, VEN?).

This species probably is coespecific with *E. agostinii* Vareschi, but I not seen the type of that species (from Venezuela).

*Elaphoglossum gomezianum*

A. Rojas, Brenesia 45-46: 12. 1996. Type: Panama, Chiriquí, *I. Valdespino & Ríos 1207* (Holotype: NY!; Isotypes: INB!, PMA!)

**Distribution:** Previously known from Costa Rica and Panama, but now also from **Colombia**.

**Material of new distribution:** COLOMBIA. **El Valle:** Cordillera Occidental, vertiente oriental, hoyá del Río Cali, vertiente derecha confluencia del Río Pichinderito con el Pichindé, 1 580-1 650 m, *J. Cuatrecasas 18754* (F).

*Elaphoglossum gratum*

(Fée) T. Moore, Index. Fil. 10. 1857. *Acrostichum gratum* Fée, Mém. Foug. 8: 69. 1857. Lectotype. Mexico, Mexico, *Schaffner 279* (P-n.s.).

**Distribution:** Previously known only from Mexico, Guatemala and Costa Rica?, but now also from **Honduras**.

**Material of new distribution:** HONDURAS. **Cortés:** Santa Cruz de Yojoa, 2 000 ft., *J. Edwards 721* (F).

The material of Costa Rica identified as this species (Mickel 1995) represents young plants of *E. furfuraceum*.

*Elaphoglossum herrerae*

A. Rojas, Brenesia 45-46: 13. 1996. Type: Costa Rica, Guanacaste, *G. Herrera & G. Rivera 827* (Holotype: INB!; Isotype: CR!).

**Distribution:** Previously known only from Costa Rica, but now also from **Mexico, Guatemala, Honduras, El Salvador** and **Panama**.

**Material of new distribution:** MEXICO. **Chiapas:** *Ghiesbreght 313* (F). **Guerrero:** 25 mi. S of Chilpancingo, *J. Paxson et al. 825* (F). GUATEMALA. **Sololá:** trail between slopes of Volcán Santa Clara and town to San Pedro, 1 900-2 100 m, *J. Steyermark 47117* (US). HONDURAS. **El Paraíso:** barranco entre Casitas y Cuesta de Galeras, 1 500 m, *A. Molina 8570* (F); Quebrada Tapahuasca, 1 300 m, *A. Molina 14661* (F). EL SALVADOR. **Morazán:** road between Perquin and Sabanetas, 1 400 m, *R. Seiler 1080* (F). PANAMA. **Chiriquí:** 12.4 mi. N of David, *W. Lewis et al. 694* (US). **Coclé:** valley of the upper Río Mata Ahogado, 350 m, *P. Allen 134* (US). **Panamá:** Río La Maestra, 0-25 m, *P. Allen 7* (US); San José Island, Perlas Archipiélago, Gulf of Panamá, about 15 mi. SSE of Balboa, *I. Johnson 204* (US).

*Elaphoglossum hieracioides*

Mickel, Brittonia 39: 320. 1987. Type: Venezuela, Aragua, *A. Fendler 268* (Holotype: US!; Isotypes: GH, MO!).

**Distribution:** Previously known from Honduras, Costa Rica, Panama, Colombia, Venezuela, Ecuador and Perú, but now also from **Guatemala**.

**Material of new distribution:** GUATEMALA. **Quiché:** Nebaj, 6 600 ft., *A. Skutch 1759* (GH).

*Elaphoglossum hymenodiatrum*

(Fée) Brade, Zeitschr. Deutsch. Ver. Wiss. S. Paulo 1: 58. 1920. *Acrostichum hymenodiastrum* Fée, Crypt. Vasc. Br. 1: 3. t.5. 1869. Type: Brazil, Río de Janeiro, *Glaziou 2152* (Isotype: P!).

**Distribution:** Previously known from Colombia, Venezuela and Brazil, but now also from **Panama**.

**Material of new distribution:** PANAMA.

**Comarca San Blas:** Nusagandi, El Llano-Carti road, along trail to Quebrada of Nusagandi, 9° 19' N, 78° 55' W, 350 m, *H. Werff 7005* (MO, NY).

This specimen was cited by Mickel (1995) as paratype of *E. lankesteri*, but the rizome scales are broader and bicolorous. Additionally, the *E. lankesteri* holotype (*R. Lloyd 4201*, NY!) is the same as *E. cismense* Rosenst. The International Code of Botanical Nomenclature (Tokyo Code, 1994), article 11 about priority establish that if the holotype is same to another species described, although the others paratypes are good, the species valid is the oldest described.

*Elaphoglossum inaequalifolium*

(Jenman) C. Chr., Ind. Fil. 309. 1905. *Acrostichum inaequalifolium* Jenman, J. Bot. 24: 273. 1886. Type: Jamaica, *G. Jenman s. n.* (K-n.v.).

*E. alan-smithii* Mickel, Brittonia 32: 334. 1980. Type: Mexico, Oaxaca, J. Mickel 3739 (Holotype: NY!; Isotypes: ENCB, IEB, UC, US!).

*E. flocosum* Mickel, Brittonia 39: 319. 1987. Type: Venezuela, Bolívar, *Huber & Carreño 128403* (Holotype: NY!).

*E. mcvaughii* Mickel, Brittonia 32: 336. 1980. Type: Mexico, Michoacán, R. McVaugh 9904 (Holotype: US!; Isotype: MICH).

**Distribution:** Previously known from “México”, “Venezuela” and Jamaica, but now also from **El Salvador, Costa Rica, Panama, Colombia, Ecuador, Perú** and **Bolivia**.

**Material of new distribution:** EL SALVADOR. Volcán San Vicente, Pico, 1 950 m, *R. Seiler 322* (F). **Morazán:** 3 km S of El Zancudo, *R. Seiler 1016* (F). COSTA RICA. **San José:** Dota, camino a San Gerardo de Dota, entrando por Jaboncillo, 9° 36' 15" N, 83° 47' 20" W, 2 400-3 000 m, *A. Rojas & M. Coto 2707* (CR, INB, NY). **Puntarenas:** Coto Brus, Parque Internacional La Amistad, Cordillera de Talamanca, Cerro Pittier, sendero entre Cerro Gemelo y Cerro Pittier, 9° 03' 45" N, 82° 56' 15" W, 2 700-2 850 m, *M. Moraga & A. Rojas 441* (CR, INB, MO, NY, UC). PANAMA. **Chiriquí:** mountain slopes SE of Cerro Punta, alt. 6 500-7 000 ft., *G. Proctor 32024* (PMA, MO). COLOMBIA. *F. Lehmann 1216* (NY, US), *F. Lehmann 1219* (NY, US); Palasé, Capilla, 1 600-1 900 m, *F. Lehmann 5078* (F). **Antioquia:** Mpio. Santa Rosa de Osos, Corregimiento Aragón, Finca Venecia, cerca a la carretera Santa Rosa de Osos-Aragón, 2 600 m, *F. Roldán et al. 444* (Ant, MO). **Cauca:** Cordillera Central, 5 km E of Timbío, 2 050 m, *M. Grant & W. Drew 10656* (NY, US). **Cundinamarca:** carretera entre Aguabonita y Fusagasuga, 2 000 m, *J. Duque 3306* (MEXU). **Santa Marta:** Sierra de Onaca, 6 500 ft., *H. Smith 2464* (NY). ECUADOR. **Zamora-Chichipe:** road Loja-Zamora, km 24-25, 3° 59' S, 77° 05' W, *L. Holm et al. 3527* (F). PERU. **Cusco:** La Convención, 139 km de Cusco en Quellomayo, subiendo hacia la “Ceja”, entre Santa Teresa y Chaullay, 13° 8' S, 72° 36' W, 1 200-2 600 m, *P. Núñez & M. Canchi 8789* (MO). **Pazco:** Prov. Oxapampa, canyon of Huacabamba, Fundo La Esperanza, 1 000-1 500 m, *B. León 619* (F). BOLIVIA. **La Paz:** Prov. Nor Yungas, Serranía de Bella Vista, 16 km N of Carrasco (37 km N of Caranavi) on road to Palos Blancos, 15° 35' S, 67° 34' W, 1 500 m, *J. Solomon & M. Nee 12662* (F, MO). **Santa Cruz:** Caballero, lumbre camp above Tunal, 30 km NE of El Tambo School (17° 55' S, 64° 25' W), 2 500 m, *T. Killeen 2555* (F).

The principal characters that were used for distinguish the synonyms species were the plants size and scales density, but I collected material of

this species (*A. Rojas & D. Padilla 5428*; CR, IZTA, MEXU) in the type location of *E. mcvaughii* (the larger species) and the plants size and scales are not different to *E. inaequalifolium*, additionally, I saw that this species is very variable in size depending of the light and nutrients.

*Elaphoglossum itatiayense*

Rosenst., Hedwigia 56: 370. 1915. Tipo: "Brasilía", Est. Rio de Janeiro, *F. Tamandaré & A. Brade 6449* (Holotype: M?, B?).

**Distribution:** Previously known only from Brazil, but now also from **Venezuela**.

**Material of new distribution:** VENEZUELA. Aragua, Prope Coloniam Tovar, *A. Fendler 287* (MO).

*Elaphoglossum lalitae*

L. D. Gómez, Phytología 60: 74. 1986. Type: Costa Rica, Cartago, *L. Gómez 1307* (Holotype: CR!).

**Distribution:** Previously known from Costa Rica and Panama, but now also from **Venezuela**.

**Material of new distribution:** VENEZUELA. Amazonas: Cerro Sinapo (Paráque), *B. Maguire & Politi 28555* (NY).

*Elaphoglossum laminarioides*

(Bory *ex* Fée) T. Moore, Index Fil. 10. 1857. *Acrostichum laminarioides* Bory *ex* Fée, Hist. Acrostich. (Mém. Foug. 2) 57, pl. 12. 1845. Type: Guyana, *Leprieur 1834* (Holotype: P-n.s.).

**Distribution:** Previously known from Venezuela, Ecuador, Perú and Bolivia, but now also from **Colombia**.

**Material of new distribution:** COLOMBIA. Dto. Unknown: *J. Mutis 3327* (US). Antioquia: Mpio. San Luis, Quebrada "La Cristalina", 6° 00' N, 74° 45' W, 560-570 m, *Ramírez & Cárdenas 982* (JAUM, MO). Magdalena: between Pueblo Viejo and San Miguel, 900-1 700 m, *W. Seifriz 558* (US).

The specimens of Costa Rica (*A. Chacón 625*, INB; *G. Herrera 4007*, CR; *G. Herrera 4392*, CR) distributed at less than 600 m are very similar to this species, because have cuspidate blade apex and the blade scales are small and adpressed.

*Elaphoglossum lanatum*

Mickel, Phytología 60: 74. 1986. Type: Perú, Apurímac, *P. Hutchison 1732* (Holotype: NY!; Isotypes: F!, GH, UC, US!).

**Distribution:** Previously known only from Perú, but now also from **Venezuela**.

**Material of new distribution:** VENEZUELA. Amazonas: Cerro Sinapo (Paráque), *B. Maguire & Politi 28555* (NY). Mérida: Valle of Chachopito near San Rafael, *H. Pittier 13261* (F).

*Elaphoglossum lanceiforme*

Mickel, Novon 2: 370. 1992. Type: Costa Rica, Alajuela, *A. Brenes 16141* (Holotype: NY!).

**Distribution:** Previously known from Costa Rica and Panama, but now also from **Nicaragua**.

**Material of new distribution:** NICARAGUA. Rivas: Isla de Ometepe, N slope of Volcán Maderas on trail from Balgue to Laguna Maderas, 11° 27' N, 85° 32' W, 1200 m, *W. Hahn 505* (MO).

*Elaphoglossum lanceum*

Mickel, Amer. Fern J. 69: 101. 1979. Type: Mexico, Oaxaca, *J. Mickel 4900* (Holotype: NY!).

**Distribution:** Previously known from Mexico, Guatemala and El Salvador, but now also from **Honduras**.

**Material of new distribution:** HONDURAS. Lempira: Montaña de Celaque, SE portion of the massif, valley of the Río Arcagual on the plateau, 14° 33' 26" N, 88° 40' 00" W, 2400 m, *G. Davidse & R. Zúñiga 34828* (MO, TEFH?); 2 600 m, *D. Hazlett 2600* (F); Celaque

National Park, along Río Arcagual, upstream from base camp 2, 10.5 km WSW of the town of Gracias, 14° 34' 05" N, 88° 41' 05" W, 250 m, *R. Moran 5577* (MO). **Santa Bárbara:** 7 km N of El Mochito, on the E slopes of Mt. Santa Bárbara, 14° 55' N, 88° 07' W, 2 200-2 500 m, *R. Moran 5700* (MO).

*Elaphoglossum langsdorffii*

(Hook. et Grev.) T. Moore, Index Fil. 11. 1857. *Acrostichum langsdorffii* Hook. et Grev., Icon Fil. T. 164. 1829.

**Distribution:** Previously known from Bolivia and Brazil, but now also from **Perú**.

**Material of new distribution:** PERU. **San Martín:** Prov. Lamas, Alonso de Alvarado, San Juan de Pacayzapa, al E del puente (carretera a Moyobamba,), *J. Schunke 5871* (F).

*Elaphoglossum latevagans*

Mickel, Fieldiana Bot. 27: 140. 1991. Type: Perú, Amazonas, *P. Hutchison & Wright 5808* (Holotype: US!; Isotype: F!, GH, NY!, UC).

**Distribution:** Previously known only from Perú, but now also from **Colombia** and **Venezuela**.

**Material of new distribution:** COLOMBIA. **Cauca:** Mpio. Silva, ca. 47-48 km E of Piendamé, 2° 35' N, 76° 19' W, *J. Luteyn et al. 10142* (NY). VENEZUELA. **Trujillo:** Dto. Boconó, Páramo Guaracamal, 20-21 km beyond jct. with Hwy NE of Boconó, 9° 13' N, 70° 13' W, *J. Luteyn & Cotton 9706* (NY).

*Elaphoglossum laxisquama*

Mickel, Fieldiana Bot. 27: 141. 1991. Type: Perú, San Martín, *M. Young 1741* (Holotype: NY!; Isotype: USM).

**Distribution:** Previously known from Perú, but now also from **Colombia**.

**Material of new distribution:** COLOMBIA. **Cauca:** ca. 28 km E of Totoró, ca. 2° 33' N, 76° 10' W, 3 075 m, *J. Luteyn et al. 10178* (NY).

*Elaphoglossum lechlerianum*

(Mert.) T. Moore, Index Fil. 11. 1857. *Acrostichum lechlerianum* Mett., Fil Lechl. 1: 3. 1856. Type: Perú, Puno, *W. Lechler 2522* (Isotypes: BR-n.s., S-n.s.).

**Distribution:** Previously known from Ecuador, Perú and Bolivia, but now also from **Colombia**.

**Material of new distribution:** COLOMBIA. **Cauca:** Cordillera Central, vertiente oriental, región de Moscapán, hoya del Río San José, La Chorrera de Candelaria, 2 100-2 310 m, *J. Cuatrecasas 23622* (F).

*Elaphoglossum lellingeri*

Mickel, Brittonia 45: 216. 1993. Type: Colombia, Antioquia, *R. Callejas & F. Roldán 318* (Holotype: NY!).

**Distribution:** Previously known only from Colombia, but now also from **Ecuador**.

**Material of new distribution:** ECUADOR. **Carchi:** above Maldonado, 2 400 m, *H. Werff & Gudiño 10797* (MO).

*Elaphoglossum lepidopodium*

Mickel, Brittonia 32: 336. 1980. Holotype: México, Oaxaca, *J. Mickel 6175* (Holotype: NY!).

**Distribution:** Previously known only from Mexico, but now also from **Guatemala**, **Honduras** and **El Salvador**.

**Material of new distribution:** GUATEMALA. **Alta Verapaz:** road from Chama x Cobán, 3 000 ft., *H. Johnson 543* (US); vicinity of Cobán, about 1 300 m, *P. Standley 90853* (F). **Isabal:** along Río Frío, 50-75 m, *J. Steyermark 41631* (US). **Quezaltenango:** high barranco along Río Samalá, between Santa María de Jesús and Calahuaché, 1 200-1 300 m, *J. Steyermark 33874* (F). **San Marcos:** Finca El Porvenir, Loma Trocodoná, S facing slopes of Volcán Tajumulco, 1 300-1 500 m, *J. Steyermark 37538* (F, US). **Sololá:** Volcán Atitlán, 1 700-3 800 m, *J. Steyermark 47346* (US); Río

Bravo, in vicinity of Finca Mocá, S facing slopes of Volcán Atitlán, 1 000-1 100 m, *J. Steyermark 47965* (F, US). **Suchitepéquez:** Finca Moca, *W. Muenschler 12136* (F). HONDURAS. **El Paraíso:** Mpio. San Antonio de Oriente, La Labranza, Montaña de Uyuca, *J. Linares & R. Dressler 3810* (MEXU); Ciudad de Yuscarán, Cerro Monserrat, 2 000 m, *M. Espinal 120* (CR). **Francisco Morazán:** Sierra San Juancito, road to San Juancito, *J. Swallen 11129* (US). ELSALVADOR. **Ahuachapán:** El Imposible Reserve, Campana, 13° 51' N, 89° 54' W, 1 400 m, *A. Monto et al. 2018* (MEXU).

*Elaphoglossum killipianum* Mickel of Costa Rica and Panama could be coespecific with this species.

*Elaphoglossum leporinum*

L. D. Gómez, *Rev. Biol. Trop.* 20 (16): 32. 1972. Type: Costa Rica, Limón, *G. Davidse 1579* (Holotype: CR!).

**Distribution:** Previously known from Mexico, Guatemala, Costa Rica and Panama, but now also from **Colombia** and **Perú**.

**Material of new distribution:** COLOMBIA. **Santander:** vicinity of Veras, 3 100-3 250 m, *E. Killip & A. Smith 17880* (NY), *E. Killip & A. Smith 17893* (NY); Páramo Frailejonale, near Veras, 3 750-3 850 m, *E. Killip & A. Smith 17977* (NY); S slope of Páramo de Romeral, 3 800 m, *E. Killip & A. Smith 18703* (NY). PERU. **Ancash, Yungay:** Huascarán Natural Park, Quebrada Paria, 8° 57' S, 77° 33' W, *D. Smith et al. 9173* (MO); Huascarán Natural Park, Llanganuco sector, Josefa trail, 9° 05' S, 77° 41' W, 3 600-3 700 m, *D. Smith et al. 9411* (MO).

See discussion under *E. rufescens*.

*Elaphoglossum longicaudatum*

Mickel, *Ann. Missouri Bot. Gard.* 77: 594. 1990. Type: Venezuela, Amazonas, *R. Liesner & G. Carnevali 22993* (Holotype: NY!; Isotypes: MO!, VEN).

**Distribution:** Previously known only from Venezuela, but now also from **Colombia**.

**Material of new distribution:** COLOMBIA. **Amazonas-Vuapés:** Río Apaporis, entre el Río Pacoa y el Río Mananarí, 250 m, *Sokatama et al. 13655* (NY).

*Elaphoglossum longicrura*

H. Christ, *Bull. Herb. Boissier sér.* 2, 7: 273. 1907. Type: Costa Rica, San José, *C. Biolley s. n.* (Holotype: P-n.s.).

**Distribution:** Previously known from Costa Rica and Panama, but now also from **Nicaragua** and **Colombia**.

**Material of new distribution:** NICARAGUA. Along Karawal River, *E. Schramm s. n.* (GH). COLOMBIA. **Chocó:** Río San Juan, margen derecha, Quebrada del Taparal, 5-20 m, *J. Cuatrecasas 21486* (F); Mpio. Bahía Solano, Parque Nacional Natural Ensenada de Utria, camino entre Punta Diego y Caida Cocalito, 6° 21' N, 76° 26' W, 0-100 m, *T. Espina et al. 3622* (MO); slopes and ridge of Loma del Cuchillo, ca. 15 km WSW of Chigorodó, ca. 150-400 m, *D. Lellinger & E. de la Sota 667* (CR).

*Elaphoglossum longistipitatum*

A. Rojas, *Brenesia* 47-48: 6. 1997. Holotype: Costa Rica, Heredia, *D. Lellinger & J. White 1041* (Holotype: CR!, Isotypes: INB!, US).

**Distribution:** Previously known from Mexico, Guatemala, Honduras, Costa Rica and Panama, but now also from **El Salvador**.

**Material of new distribution:** EL SALVADOR. **Santa Ana:** wedel unterseits blaugrün gefärbt, Miramundo, 2 300 m, *W. Lötschert 375* (US).

*Elaphoglossum meridense*

(Klotzsch) T. Moore, *Index Fil.* 12. 1857. *Acrostichum meridense* Klotzsch, *Linnaea* 20:

427. 1847. Type: Venezuela, Mérida, *J. Moritz* 320 (US?).

**Distribution:** Previously known only from Venezuela, but now also from **Ecuador** and **Bolivia**.

**Material of new distribution:** ECUADOR. **Chimborazo:** Páramo de Pinlilic, Cordillera Oriental, 3 750 m, *M. Acosta* 7708 (F). **Pichincha:** Chaparro de Sebritano, Sec. Oriental de las Haciendas “pedregal” y “Yanurcu”, 3 400-3 500 m, *M. Acosta* 8357 (F), *M. Acosta* 8360 (F). **Tungurahua:** Páramo of Minza, 3 700 m, *C. William & R. Summers* 348 (F). BOLIVIA. **Cochabamba:** Prov. Chapare, Incachaca, 2 200 m, *J. Steinbach* 8901 (F).

*Elaphoglossum monicae*

Mickel, Flora Novo-Galiciana vol. 17: 273. 1992. Type: Mexico, Jalisco, *J. Rzedowski* 26695 (Holotype: NY!; Isotype: ENCB).

**Distribution:** Previously known only from Mexico, but now also from **Guatemala** and **Honduras**.

**Material of new distribution:** GUATEMALA. **Zacatepequez:** Volcán de Agua, 10 000 ft., *J. Smith* 4696 (US). HONDURAS. **Lempira:** Celaque National Park, near camp 2, 10.3 km WSW of the town of Gracias, 14° 33' N, 88° 39' W, 2 500 m, *R. Moran* 5627 (MO).

*Elaphoglossum moralesii*

A. Rojas, Brenesia. 45-46: 18. 1996. Type: Costa Rica, San José, *F. Morales* 4459 (Holotype: INB!; Isotype: NY).

**Distribution:** Previously known only from Costa Rica, but now also from **Panama**.

**Material of new distribution:** PANAMA. **Coclé:** vicinity of El Valle, 800-1 000 m, *P. Allen* 222 (US); *T. Croat* 67453 (MO, UC); foot of Cerro Pilón, above El Valle de Antón, 2 000 ft., *D. Porter et al.* 4672 (MO); *T. Croat* 67453 (MO, UC).

*Elaphoglossum muelleri*

(E. Fourn.) C. Chr., Index Fil. 311. 1905. *Acrostichum muelleri* E. Fourn., Mexic. Pl. 1: 68. 1872. Type: Mexico, Veracruz, *Müller* 41 (Holotype: P-n.s.).

**Distribution:** Previously known from Mexico, Guatemala and Honduras, but now also from **El Salvador**.

**Material of new distribution:** EL SALVADOR. **San Salvador:** San Salvador Volcano on trail in crater, 1 800 m, *R. Seiler* 31 (F).

*Elaphoglossum nivosum*

(Kunze) Mickel, Fieldiana Bot, n. s. 27: 148. 1991. *Acrostichum nivosum* Kunze, Bot Zeit. (Berlin) 1845: 281. 1845. Type: Venezuela, Caracas, *J. Moritz s. n.* (Holotype: LZ, destroyed).

**Distribution:** Previously known from Venezuela, Ecuador, Perú and Bolivia, but now also from **Colombia**.

**Material of new distribution:** COLOMBIA. Rayon, *B. Apollinaire & B. Arthur* 97 (US); Quebrada Surbar, along road between Duitama and Charalá, 3 273 m, *J. Langenheim* 3543 (US). **Boyacá:** Cordillera Oriental, slopes S of Río Gomeza (Río Arzobispo), 6° N, 72° 55-57' W, 3 050-3 070 m, *F. Fosberg* 22299 (US); Eastern Cordillera, W slopes Páramo La Rusia, km 7-20 along road from Duitama to San Gil, 2 900-3 375 m, *J. Luteyn et al.* 7592 (NY). **Cundinamarca:** al S de Usme, entre La Reganera y El Hato, Estación Agrícola Experimental “Usme”, 3 000-3 100 m, *J. Idrobo et al.* 402 (US). **Norte de Santander:** edge of Páramo de Las Vegas, 3 300-3 700 m, *E. Killip & A. Smith* 15771 (US); Mountain E of Las Vigas, 3 000-3 300 m, *E. Killip & A. Smith* 15807 (NY, US); Eastern Cordillera, vicinity of Veras, 3 100-3250 m, (mezclado con *E. dombeyanum*), *E. Killip & A. Smith* 17289 (NY, US); Eastern Cordillera, Páramo del Romeral, 3800-4 200 m, *E. Killip & A. Smith* 18673 (NY,

US); vicinity of Veras, 3 100-3 200 m, *E. Killip & A. Smith 21181* (NY, US).

*Elaphoglossum obovatum*

Mickel, Brittonia 39: 322. 1987. Type: Venezuela, Amazonas, *J. Steyermark & G. Bunting 103199* (Holotype: US!; Isotype: NY!).

**Distribution:** Previously known from Venezuela and Perú, but now also from **French Guayana**.

**Material of new distribution:** FRENCH GUYANA. **Saül:** near Eaux Claires along the Sentier Botanique, 3° 37'N, 53° 12'W, 200-400 m, *S. Mori et al. 21544* (NY).

*Elaphoglossum odontolepis*

Mickel, Fieldiana Bot, n. s. 27: 150. 1991. Type: Perú, Cuzco, *B. Peyton & S. Peyton 356* (Holotype: MO!).

**Distribution:** Previously known only from Perú, but now also from **Ecuador**.

**Material of new distribution:** ECUADOR. *E. Lehmann 5700* (F).

*Elaphoglossum ornithoglossum*

Mickel, Brittonia 39: 323. 1987. Type: Venezuela, Mérida, *A. Smith 1454* (Holotype: UC!).

**Distribution:** Previously known only from Venezuela, but now also from **Ecuador**.

**Material of new distribution:** ECUADOR. **Azuay:** Carretera Sayausid, área de recreación Caja, 3 400 m, *J. Jaramillo 9887* (F).

*Elaphoglossum orosiense*

A. Rojas, Brenesia 45-46: 21. 1996. Type: Costa Rica, Cartago, *A. Rojas 1075* (Holotype: NY-n.s.; Isotypes: CR!, INB!).

**Distribution:** Previously known only from Costa Rica, but now also from **Colombia**.

**Material of new distribution:** COLOMBIA. **El Valle:** Cordillera Occidental, Corregimiento de La Elvira, carretera al mar o

Simón Bolívar, vía a Dapa, Finca Zingara, 1 800 m, *J. Giraldo 124* (CUVC, UC).

*Elaphoglossum ortegae*

Mickel, Brittonia 39: 323. 1987. Type: Venezuela, Portuguesa, *F. Ortega et al. 1423* (Holotype: NY!).

**Distribution:** Previously known from Colombia and Venezuela, but now also from **British Guayana and Bolivia**.

**Material of new distribution:** BRITISH GUAYANA. Cuyuni-Mazaruni, Pakatalma Mts, base camp 8.6 km Imbaimadai on Partang and tributary, 0.25 W-NW, 5° 46'N, 60° 15'W, 650 m, *C. Hoffman et al. 1805* (MO, US). BOLIVIA. **Santa Cruz:** Prov. Sara, Buena Vista, 500 m, *I. Steinbach 5684* (F).

*Elaphoglossum pachyphyllum*

(Kunze) C. Chr. Index Fil. 312. 1905. *Acrostichum pachyphyllum* Kunze, Linnaea 9: 26. 1834. Type: Perú, Pampayacu, *Poeppig s. n.* (Holotype: LZ, destroyed; Isotype: P-n.s.).

*Acrostichum corpulentum* Kunze ex Kuhn, Linnaea 36: 61. 1869. Type: Venezuela, Mérida, *J. Moritz 321* (Isotype: MO!).

**Distribution:** Previously known from "Venezuela" and Perú, but now also from **Ecuador**.

**Material of new distribution:** ECUADOR. **Amazonas:** Dto. Río Negro, Camp XI, Cerro de la Neblina, 6.2 km NNE Pico Phelps (= Neblina), 20.5 km ENE Neblina Base Camp, along stream (Caño Beitel), S of Camp, 0° 51' 45" N, 65° 58' 52" W, *J. Beitel 85284* (MO). **Morna-Santiago:** Mutintz, SE of Makuma, ca. 1 km along trail to Tunantza, 2° 11' S, 77° 44' W, 675 m, *B. Øllgaard & H. Navarrete 1942* (AAU, QCA); road Paruca-Santiago, km 44, 3° 1' S, 78° 12' W, *B. Øllgaard et al. 2894* (AAU, QCA). **Napo:** Quijos Cantón, Within 5 km of the Town of Baeza, 0° 27' 5" S, 79° 53' 5" W, 2 100 m, *A. Fay & L. Fay 3880* (MO), *A. Fay & L. Fay 3888* (MO).

*Elaphoglossum pallidiforme*

Mickel, Novon 2: 380. 1992. Type: Panama, Panama, *T. Croat 22656* (Holotype: NY!; Isotypes: MO!, UC!).

**Distribution:** Previously known from Costa Rica and Panama, but now also from **Ecuador**.

**Material of new distribution:** ECUADOR. **Carchi:** Reserva Etnica y Forestal Awá, trail Gualpí bao-Tarabita, 1° 08' N, 78° 23' W, 500-600 m, *Jørgensen et al. 65237* (NY).

This species differs from *E. albomarginata* A. R. Sm. only in brown (vs. yellowish) rhizome scales, it seems likely that these two species are coespecific.

*Elaphoglossum pilosius*

Mickel, Brittonia 39: 324. 1987. Type: Venezuela, *J. Luteyn 6139* (Holotype: NY!; Isotypes: MO!, UC!).

**Distribution:** Previously known from Costa Rica, Panama, Colombia, Venezuela, Ecuador and Perú, but now also from **Mexico, Guatemala and Honduras**.

**Material of new distribution:** MEXICO. **Chiapas:** Mpio. Motozintla de Mendoza, on the N and W slope of Cerro Mozotal below the microwave tower along the road from Huixtla to El Porvenir and Siltepec, 3 000 m, *D. Breedlove & A. Smith 22806* (MO); Mpio. Motozintla de Mendoza, Cerro Mozotal, a 27 km al SO de Motozintla, camino a El Porvenir, 15° 26' 13" N, 92° 20' 28" W, 2 850-3 000 m, *E. Martínez et al. 22435* (FCMF?, MEXU). **Guerrero:** Mpio. Chichihualco, 17 km adelante de La Vuelta rumbo a Puerto del Gallo, 2 930 m, *F. Lorea 676* (FCMF, MEXU); Mpio. Tlacotepec, Cerro Teotepec, 3 150 m, *F. Lorea 4206* (ENCB, FCMF, IEB, MEXU); Mpio. Tlacotepec, 1 km al SO de Puerto San Juan, 2 900 m, *F. Lorea 4211* (ENCB, FCMF?, IEB, MEXU). **México:** Ameyalco, km 75 de la carretera Amecameca-Tlamanca, 3 100 m, *J. Rzedowski 21861* (ENCB). **Veracruz:** Mpio. Calchualco, 1.3 km N of Vaquería, 3 km by road from

junction with the Coscomatepec-Escuela-Jacal road, 14 km (by road) W of Escuela, 19° 07' N, 97° 14' W, 2 900 m, *M. Nee 23102* (NY). GUATEMALA. **Quezaltenango:** NE facing, slopes of barranco of Volcán Zunil, 3 000 m, *J. Steyermark 34910* (F, US). **San Marcos:** mountains along the road between San Marcos and Serchil, 2 700-3 150 m, *P. Standley 85406* (F); below Comitancito and Santa Rosa junction, Sierra Madre Mountains, 2 900 m, *L. Williams et al. 27074* (F), *L. Williams et al. 27074A* (F). HONDURAS. **Lempira:** Celaque National Park, along Río Arcáguil, upstream from base camp 2, 10.5 km WSW of the town of Gracias, 14° 34' 05" N, 88° 41' 05" W, 2 500 m, *R. Moran 5600* (MO).

*Elaphoglossum polyblepharum*

Mickel, Ann. Missouri Bot. Gard. 78: 259. 1991. Type: Venezuela, Amazonas, *R. Liesner & B. Holst 21517* (Holotype: NY!; Isotype: MO!).

**Distribution:** Previously known only from Venezuela, but now also from **Bolivia**.

**Material of new distribution:** BOLIVIA. **Santa Cruz:** Velasco, Parque Nacional Noel Kempff M., Campamento Las Gamas, 14° 48' 14" S, 60° 23' 59" W, 850 m, *L. Arroyo et al. 810* (MO).

*Elaphoglossum propinquum*

(Mett. ex Kuhn) H. Christ, Monogr. Elaphoglossum 115. 1899. *Acrostichum propinquum* Mett. ex Kuhn, Linnaea 36: 45. 1869. Type: Perú, Agapata, *Lechler 2007* (Holotype: B-n.s.; Isotype: P).

**Distribution:** Previously known only from Perú, but now also from **Brazil**.

**Material of new distribution:** BRAZIL. **Minas Gerais:** Rio de Tan, Ouro Preto, Rochedas dos Camprinhas, *Damazio 36800* (Jard. Bot. Río, MO). **Río de Janeiro:** Estado do Rio, Itatiaia, 2 200-2 400 m, *L. Brade 15515* (MO), *L. Brade 15516* (MO). **Sao Pablo:** Pedro do Baú, 1 900 m, *Leite 3885* (MO).



*Elaphoglossum pusillum*

(Mett. ex Kuhn) C. Chr., Index Filic. 314. 1905. *Acrostichum pusillum* Mett. ex Kuhn, Linnaea 36: 43. 1869. Type: Cuba, Wright 794 (Holotype: B-n.s.; Isotype: NY!).

**Distribution:** Previously known from Mexico, Central America, Colombia, Venezuela and Cuba, but now also from **Perú** and **Jamaica**.

**Material of new distribution:** PERU. **Junín:** Chanchamayo Valley, 1 500 m, C. Schunke 318 (F). JAMAICA. 2<sup>nd</sup>. Breakfast Spring, lowside, N. Harris 7434 (F).

*Elaphoglossum revolutum*

(Liebm.) T. Moore, Index Fil. 365. 1862. *Acrostichum revolutum* Liebm., Kongel Danske Vidensk. Selsk. Skr., Naturvidensk. Math. Afd. ser. 5, 1: 163. 1849. Type: Mexico, F. Liebmann 2427 (C-n.s.).

*Elaphoglossum xiphoides* Mickel, Ann. Missour. Bot. Gard. 78: 259. 1991. Type: Venezuela, Bolívar, B. Stergios 10310 (Holotype: NY!).

**Distribution:** Previously known from Mexico, Guatemala, Honduras, Costa Rica, Panama, Colombia, "Venezuela" and Antillas, but now also from **French Guyana** and **Brazil**.

**Material of new distribution:** FRENCH GUYANA. Mont. Atachi Bacca, Región de l'Znini, extrémité nord, Camp II, 3° 33' N, 55° 55' W, 450 m, G. Cremers et al. 10353 (US). BRAZIL. **Río de Janeiro:** Goyaz, Goiania, L. Brade 31050 (MO).

**Range extension:** Mexico, Guatemala, Honduras, Costa Rica, Panama, Colombia, Venezuela, and Antillas.

*Elaphoglossum rimbachii*

(Sodirot) H. Christ, Monogr. *Elaphoglossum* 115. 1899. *Acrostichum rimbachii* Sodirot, Crypt. Vasc. Quit. 478. 1893. Type: Ecuador, Cuenca, Rimbach s. n. (not located).

**Distribution:** Previously known from Ecuador and Perú, but now also from **Colombia**.

**Material of new distribution:**

COLOMBIA. **Antioquia:** Mpio. de Urrao, Páramo de Frontino, Llano Grande an hill to N, 6° 28' N, 76° 05' W, 3 320-3450 m, J. MacDougal et al. 4462 (MO). **Caldas:** Riseralda, Mpio. Santa Rosa de Cabal, camino real entre Termales de Santa Rosa y Hacienda La Sierra, 4° 49.5' N, 75° 30.5' W, 3 370 m, Wolf 825 (COL, MO). **Meta:** Macizo de Sumapáz, cabeceras de la Quebrada El Buque, 3 460 m, S. Díaz et al. 2628 (COL, MO).

*Elaphoglossum rosenstockii*

Rosenst., Repert. Spec. Nov. Regni Veg. 4: 6. 1907. Type: Ecuador, Rimbach 8 (Holotype: S-n.s.; Isotype: US!).

*Elaphoglossum anceps* Mickel, Brittonia 39 (3): 313. 1987. Type: Venezuela, Mérida, B. Stergios 1276 (Holotype: PORT).

**Distribution:** Previously known from "Venezuela", Ecuador, Perú and Bolivia, but now also from **Colombia**.

**Material of new distribution:** COLOMBIA. **Antioquia:** Paramo of Mono Frontino N of Urrao, 11 800 ft., E. Core 401 (US). **Boyacá:** Nevado del Cucuy, Chorreo de San Paulino, 3750 m, J. Cuatrecasas 1345 (F). **Caldas:** Cerro Tatema, 3 400-3 700 m, F. Pennell 10547 (US). **Cundinamarca:** cerca a la Laguna de Chissaca, km 31 de la carretera, 3 670 m, C. Acosta 304 (NY).

*Elaphoglossum rufescens*

(Liebm.) T. Moore, Index Fil. 365. 1862. *Acrostichum rufescens* Liebm., Kongel Danske Vidensk. Selsk. Skr., Naturvidensk. Math. Afd. ser. 5, 1: 188. 1849. Type: Mexico, Veracruz, F. Liebmann s. n. (Holotype: US!).

*E. laxipes* Mickel, Flora Novo-Galiciana. p. 271. Type: Mexico, Jalisco, B. Hinton 2750 (Holotype: NY!; Isotypes: MO!, NY!).

**Distribution:** Previously known only from Mexico, but now also from **Guatemala** and **Chile**.

**Material of new distribution:** GUATEMALA. **San Marcos:** between La Vega ridge

along Vega and NE slopes of Volcán Tacaná, to 3 mi. from Guatemala-Mexico boundary in vicinity of San Rafael, 2 500-3 000 m, *J. Steyermark* 36166 (F). CHILE. **Llanquihue:** Parque Nacional Vicente Pérez Rosales, 14.5 km E of Ensenada on the road to Petrohue, above Río Petrohue, 185 m, *T. Lammers et al.* 7841 (F).

The distribution of this species is very irregular, probably this and the distribution of *E. leporinum* in South America is an indicate that *E. dombeyanum*, *E. leporinum* and *E. rufescens* are the same species, and only have ecological variations. *E. dombeyanum* have imbricated and bicolorous scales on abaxial lamina (vs. more patent and concolorous scales in *E. leporinum* and *E. rufescens*), between this two last species *E. leporinum* has shorter blade and thicker stipe.

*Elaphoglossum russelliae*

Mickel, Fieldiana Bot. n. s. 27. 160. 1991. Type: Perú, Cajamarca, *S. Diaz & Asores* 2587 (Holotype: NY!).

**Distribution:** Previously known from Costa Rica and Perú, but now also from **Panama**.

**Material of new distribution:** PANAMA. **Bocas del Toro:** SE slope of Cerro Ehandi, (between Jilguero and Danta camps), 2 600-2 800 m, *L. Gómez et al.* 22276 (MO); heatwaters of Río Colubre, 2 400-2 550 m, *L. Gómez et al.* 22409 (NY).

*Elaphoglossum sartorii*

(Liebm.) Mickel, Mem. New York Bot. Gard. 46: 181. 1988. *Acrostichum sartorii* Liebm., Mexic. Bregn. 166 (seors. 14). 1849. Tipo: México, Veracruz, *F. Liebmann* (Pl. Mex. 2430, 2752, 2753; Fl. Mex. 12, 14, 660, 661, 662) (fragm. US!).

*Elaphoglossum subarborescens* Rosenst., Repert. Spec. Nov. Regni Veg. 4: 295. 1907. Type: Brasil, Sao Paulo, Serra do Mar, *Wacket* s. n. (BM-n.s.).

**Distribution:** Previously known from Mexico, Guatemala, Honduras, Costa Rica,

Panama, Venezuela and "Brazil", but now also from **Colombia**.

**Material of new distribution:** COLOMBIA. **Santa Marta:** *H. Smith* 1066 (US).

*Elaphoglossum seminudum*

Mickel, Brittonia 32: 338. 1980. Type: Mexico, Oaxaca, *J. Mickel* 4908 (Holotype: NY!; Isotypes: MEX, UC, US!).

**Distribution:** Previously known only from Mexico, but now also from **Guatemala**.

**Material of new distribution:** GUATEMALA. **Quetzaltenango:** Volcán Santa María, 3 200 m, *M. Véliz et al.* 9552 (MEXU).

*Elaphoglossum setigerum*

(Sodirot) Diels, Nat. Pflanzenfam. 1(4): 333. 1899. *Acrostichum setigerum* Sodirot, Anales Univ. Centr. Ecuador 4: 174. 1890. Type: Ecuador, *L. Sodirot* s. n. (Q-n.s.).

**Distribution:** Previously known from Mexico, Guatemala, Costa Rica, Panama, Colombia, Ecuador, Perú and Haití, but now also from **Honduras**.

**Material of new distribution:** HONDURAS. **Lempira:** Montañas de Celaque, SE part of massif, canyon of the Quebrada El Naranjo, 14° 33'N, 88° 39'W, 1 800-1 900 m, *G. Davidse & R. Zúñiga* 34677 (TEFH?, MO).

*Elaphoglossum smithii*

(Baker) H. Christ, Neue Denkschr. Allg. Schweiz. Ges. Gesamten Naturwiss. 36: 106. 1899. *Acrostichum smithii* Baker, Ann. Bot. 5: 169. 1891. Type: St. Vincent, *G. Smith* 1135 (Holotype: K-n.s.; Isotype: IJ).

**Distribution:** Previously known from Nicaragua?, Costa Rica, Panama, Haiti, Dominican Republic and Lesser Antilles, but now the Nicaraguan distribution is confirmed and also is known from **Venezuela**.

**Material of new distribution:** NICARAGUA. **Granada:** Volcán Mombacho, ca. 11° 50' N, 85° 59' W, 1 000-1 222 m, (mixed with *E. cf. furfuraceum*), *J. Henrich &*

*P. Moreno 214* (NY). VENEZUELA. **Bolivar:** NW slopes of Cerro Venama, SE of Camp 125, 1 100 m, *J. Steyermark & S. Nilsson 443* (US).

*Elaphoglossum sporadolepis*

(Kunze *ex* Kuhn) T. Moore *ex* C. Chr., Index Filic. 316. 1905. *Acrostichum sporadolepis* Kunze *ex* Kuhn, Linnaea 36: 59. 1869.

**Distribution:** Previously known from Costa Rica, Panama, Venezuela, Guyanas, Suriname and Brazil, but now also from **Colombia, Perú and Bolivia.**

**Material of new distribution:** COLOMBIA. **Antioquia:** Medellín-Dorada road, páramo of Sonson, 10 km from Mpio. of Sonson, 2 850 m, *L. Atehortúa 1036* (NY, UC); Municipio de Santa Rosa, Llanos de Quiba area, ca. 24 km N of Santa Rosa de Osos, 6° 50' N, 75° 30' W, 2 625 m, 27 May 1984, *J. Luteyn et al. 10795* (MO). PERU. **Cajamarca:** Prov. Contumazá, Bosque Cachil, 2 500 m, *A. Sagástegui et al. 15907* (F). BOLIVIA. **La Paz:** Nor Yungas Prov. Off the La Paz-Yolosa Road, along road about 1 km E of Cotapata Gas Station, and on trail on left (from La Paz), roughly North, 16° 19' S, 67° 50' W, 3 200 m, *A. Fay & L. Fay 2989* (F).

*Elaphoglossum squamiferum*

A. Rojas, Brenesia 45-46: 21. 1996. Type: Costa Rica, Heredia, *G. Rivera 28* (Holotype: INB!).

**Distribution:** Previously known only from Costa Rica, but now also from **El Salvador, Colombia, Venezuela and Ecuador.**

**Material of new distribution:** EL SALVADOR. **Chalatenango:** Cerro Pital, 2 700 m, *R. Seiler* (F). COLOMBIA. **Bogotá:** Cordillera Oriental, Sueva Valley, 9 km W of Junín, 45 km NE of Bogotá, 2 400 m, *J. Grant 9087* (NY). **Caldas:** Salento to "Saguneta", old Quindío Trail, Cordillera Central, 2 400-2 700 m, *E. Killip & T. Hazen 9125* (US); Cordillera Central, "Pinares", above Salento, 2 600-2 800 m, *F. Pennell*

9252 (NY, US). VENEZUELA. **Lara:** Dist. Montes, vertiente larense del Páramo de El Jabón, en dirección E a partir de la casa del señor Emiliano Vergara, 3 000-3 050 m, *L. Ruiz & M. López 976* (NY). **Mérida:** Distr. Rangel, Cuenca del Río Los Granates, entre la Casa Grande y el Hático, páramo de Los Granates, 2 940 m, *L. Ruiz 8313* (NY); La Mucuy, 3 000 m, *V. Vareschi & Pannier 1359* (US). **Táchira:** trail leading to summit of Páramo de Táma, 2 500-3 200 m, *J. Luteyn et al. 5336* (NY). **Trujillo:** Guirigay, hacia Peña Blanca, 3 200 m, *Aristeguieta 3608* (NY). ECUADOR. **Imbabura:** "Shanshipamba", Macholoma, 2 900 m, *A. Acosta 14320* (F).

*Elaphoglossum squamocostatum*

A. Rojas, Brenesia 47-48: 13. 1997. Type: Costa Rica, Cartago, *A. Rojas 1104* (Holotype: INB!; Isotype: CR!, MO).

**Distribution:** Previously known from Costa Rica and Ecuador, but now also from **Guatemala, Honduras, Panama, Haití, Dominican Republic, Porto Rico and Trinidad.**

**Material of new distribution:** GUATEMALA. **Quezaltenango:** along old road between Finca Pirineos and Patzulín, 1 200-1 400 m, *P. Standley 87147* (F). **Zolapa:** bordering Quebrada Alejandría, summit of Sierra de Las Minas, vicinity of Finca Alejandría, 2 500 m, *J. Steyermark 29845* (F). HONDURAS. **Ocotepeque:** Aldea El Portin, Agua Caliente (Guatemala border)-Santa Rosa de Copán, 18.1 mi E of Santa Fé, 26.8 mi SW of bridge over Río Higuito (or Río Grande) near Village of Cucuyagua Copan, 14° 28' N, 89° 15' W, 1 800 m, *T. Croat & C. Hannon 63800* (MO, NY). PANAMA. **Chiriquí:** Holcomb's Trail, 6-10 mi. above El Boquete, 1 400-1 600 m, *E. Killip 5170* (US); above Camp I, Holcomb's Trail, upper Caldera Watershed (above El Boquete), *E. Killip 5343* (US); vicinity of El Boquete, 1 000-1 300 m, *W. Maxon 5058* (US). HAITI. Vicinity of Mission, Fonds Varettes, 1 000 m, *E. Leonard 4019* (US). DOMINICAN REPUBLIC. **Barahona:** Cordillera de Bahoruco, Sierra de Los Comisarios, above Gros-Figuier, 1 000 m, *E. Ekman 6768* (US). PORTO RICO.

Mount. Torresilla, *Hioram* 248 (US). TRINIDAD. Morne Bleu ridge from Textel Station to Morne Blue Peak, 2 400-2 700 m, *without collector* (NY).

*Elaphoglossum stenoglossum*

Mickel, *Brittonia* 39: 325. 1987. Type: Colombia, Antioquia, *L. Atehortúa* 1040 (Holotype: NY!).

**Distribution:** Previously known from Costa Rica, Panama, Colombia and Venezuela, but now also from **Bolivia**.

**Material of new distribution:** BOLIVIA. **Cochabamba:** Provincia José Carrasco Torrico, 123 km antigua carretera Cochabamba-Villa Tunari, 17° 08' S, 65° 37' W, 2 100 m, *M. Kessler et al.* 7145 (LPB?, UC).

*Elaphoglossum styriacum*

Mickel, *Brittonia* 39: 326. 1987. Type: Venezuela, Bolívar, *J. Steyermark* 75347 (Holotype: MO!).

**Distribution:** Previously known from Venezuela and Perú, but now also from **Colombia** and **Brazil**.

**Material of new distribution:** COLOMBIA. **Vaupés:** Río Papurí, Teresita, *R. Evans & I. Cabrera* 19445 (US); Río Kuauyari (tributary of Río Vapués), middle and lower course, 700-800 ft., 1° 15' N, 70° 5' W, *R. Evans & I. Cabrera* 20023 (US). BRAZIL. Anhaniga, *Pédelof s. n.* (F).

*Elaphoglossum vagans*

(Mett.) Hieron., *Engl. Jahrb.* 34: 543. 1904. *Acrostichum vagans* Mett. *Linnaea* 36: 58. 1870. Type: Brazil, Caldas, *Lindberg* 539 (Holotype: K-n.s.).

**Distribution:** Previously known only from Brazil, but now also from **Bolivia**.

**Material of new distribution:** BOLIVIA. **Cochabamba:** km 104 camino al Chapare, 3 100 m, *I. Steinbach* 583 (MO). **Santa Cruz:** Provincia Caballero, 50 km al N de Matarol (en la carretera Santa Cruz-Comarapa), pasando por

San Juan del Potrero y bajando a la cuenca del Alto Río Ichilo, 2 000 m, *D. Smith et al.* 13368 (LPB?, MO).

*Elaphoglossum vulcanicum*

H. Christ, *Monogr. Elaphoglossum*. 131. 1899. Type: Ecuador, Quito, *L. Sodiro s. n.* (Holotype: K-n.s.).

**Distribution:** Previously known from Ecuador, Perú and Bolivia, but now also from **Colombia**.

**Material of new distribution:** COLOMBIA. **Meta:** Macizo de Sumapáz, vertiente oriental de la Cord., Hoya de la Quebrada El Buque, 2 900-3 000 m, *S. Díaz et al.* 2751 (COL, MO).

*E. wurdackii*

Vareschi, *Acta Bot. Venez.* 1: 107, fig. 11C. 1966. Tipo: Venezuela, Bolívar, *J. Steyermark* 58734 (no localized).

**Distribution:** Previously known only from Venezuela, but now also from **Colombia**.

**Material of new distribution:** COLOMBIA. **Santander:** Mesa de Los Santos, 1 500 m, *E. Killip & A. Smith* 15339 (NY).

*Elaphoglossum zosteriformis*

Mickel, *Ann. Missouri Bot. Gard.* 78: 261. 1991. Type: Venezuela, Bolívar, *B. Stergios* 11930 (Holotype: NY!; Isotype: UC!).

**Distribution:** Previously known only from Venezuela, but now also from **French Guyana**.

**Material of new distribution:** FRENCH GUYANA: **Eau Claire:** near Saül, 200 m, *H. Werff & George* 12984 (MO). **Saül:** Monts La Fumée, 3° 37' N, 53° 12' W, 200-400 m, *Boom & S. Mori* 1593 (MO).

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## RESUMEN

Nuevas especies, nuevas combinaciones y nuevas distribuciones adicionadas en el grande y difícil género *Elaphoglossum*. Diez especies nuevas son descritas, estas son: *Elaphoglossum adrianae* A. Rojas, *E. betancuri* A. Rojas, *E. caridadiae* A. Rojas, *E. glabromarginatum* A. Rojas, *E. kessleri* A. Rojas, *E. macdougallii* A. Rojas, *E. paramicola* A. Rojas, *E. paziense* A. Rojas, *E. pseudoherminieri* A. Rojas y *E. solomonii* A. Rojas. Tres especies son combinadas, estas son: *Elaphoglossum beitelii* (Mickel) A. Rojas, *E. curvans* (Kunze) A. Rojas y *E. eutecnium* (Mickel) A. Rojas. Finalmente, se amplía la distribución de 86 especies y algunos nombres de especies son sinonimizados.

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