Four new species of Philodendron (Araceae) from South America

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Source: Willdenowia, 36(2) : 885-894

Published By: Botanic Garden and Botanical Museum Berlin (BGBM)

URL: https://doi.org/10.3372/wi.36.36220

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Abstract

Croat, T. & Yu, G.: Four new species of *Philodendron (Araceae)* from South America. – Willdenowia 36: 885-894. – ISSN 0511-9618; © 2006 BGBM Berlin-Dahlem.
doi:10.3372/wi.36.36220 (available via http://dx.doi.org/)

Four species of *Philodendron* sect. *Macrobelium,* namely *P. huaynacapacense* from Peru and Bolivia, *P. rimachii* from Peru, *P. ushanum* from French Guiana and *P. wadedavisii* from NW Brazil and SE Colombia, are described as species new to science and illustrated.

Key words: aroids, taxonomy, Colombia, French Guiana, Brazil, Peru, Bolivia.

Introduction

Investigations with *Philodendron* at the Missouri Botanical Garden have yielded four new species from South America, while a considerable number of other species there remain in the process of being analysed and described. Nearly every school year the first author is blessed with a gifted Washington University student who chooses to take his or her rotation in his laboratory. At Washington University, each graduate student in biology is expected to do three such internships with different department members and some students are attracted to the training he offers in systematics. The latest is the co-author of this paper, following in the footsteps of other graduate or undergraduate students from Washington University, St Louis University, Grinnell College, the Universidad San Carlos and the University of Milwaukee. They have learned in the aroid working group at the Missouri Botanical Garden to enjoy aroids, to understand their complex morphology using both living and dried specimens, to make detailed descriptions, to write taxonomic keys, to prepare florulas, to write a paper for publication and to share in the publication of new species. Among those who have shared this experience are Nancy Lammert, Douglas Hayworth, Patricia Davila, David Mount, Tom Stiebel, Cavas Engineer, Anne Swart, Alicia Shah, Juan Chaparra, Courtney Finch, Jorge Lingan and Monica Carlsen.

The species described here are members of *Philodendron* sect. *Macrobelium* and are from South America, but they cover a broad area from the Guianas *(P. ushanum)* in the east to W Brazil and S Colombia *(P. wadedavisii)* in the west and Peru and Bolivia in the south *(P. huaynacapacense, P. rimachii)*.

1. *Philodendron huaynacapacense* Croat, **sp. nov.**
Holotype: Peru, Huanuco, Leoncio Prado, along road between Tingo María airport and Huayna Capac, 10 km west of bridge over Río Huallaga, 9°14'5"S, 76°02'1"W, 1294 m, 6.6.1998, *T. B. Croat & M. Sizemore 81896* (MO 04965564; isotypes: B, F, K, NY, UB, USM, USM).

Planta terrestris; internodia 1-2 cm longa, 2-2.5 cm diam.; cataphylla 2-costata, decidua; petiolus 25-42 cm longus; lamina anguste ovato-semisagittata, 32-37 cm longa, 7-21 cm lata, lobulis posterioribus 4-7 cm longis, 3-6 cm latis, nervis primariis lateralibus 6-9 utroque; inflorescentia 2 per quoque axillam, pedunculo viridi, 2-3 cm longo; spatha 10 cm longa, 1.8 cm diam., tubo viridi extus, subroseo intus, 6.3-11 cm longo.

Terrestrial. *Internodes* 1-2 cm long, 2-2.5 cm in diam., dark green and weakly glossy becoming grey-brown. *Cataphylls* 17-19 cm long, sharply 2-ribbed, green, drying dark brown and coriaceous, deciduous. *Leaves* erect with pendent blades; *petioles* 25-42 cm long (averaging 33.6 cm), dark green and weakly glossy, obtusely flattened adaxially; *blades* narrowly ovate-semisagittate, 32-37 cm long (averaging 33.31 cm), 7-21 cm wide (averaging 16.7 cm), 1.7-2 times longer than wide, abruptly long-acuminate at the apex, weakly lobed at base, inequilateral with one side up to 1.5 cm wider, subcoriaceous, dark green and semiglossy above, moderately paler and weakly glossy below, drying weakly brown and ± matte above, dark yellowish brown and moderately glossy below; anterior lobe 29-33.5 cm long (averaging 30.81 cm), the posterior lobes rounded to broadly rounded, 4-7 cm long (averaging 5.76 cm), 3-6 cm wide (averaging 4.3 cm); sinus widely parabolic to arcuate, (0.8-)1.5-4 cm deep (averaging 2.5); major veins drying paler than upper surface and darker than lower surface; margins weakly undulate; *basal veins* in 4 pairs, all free to the base or with the lowermost briefly united for 1-1.5 cm; posterior ribs absent or when present naked for up to 1 cm; *midrib* flat and slightly paler above, convex, darker and densely short-red-lineate below; *primary lateral veins* 6-9 pairs per side, sunken and concolourous above, maroon and convex below (at least toward base), departing midrib at 50° angle, drying slightly darker or slightly paler than the surface; interprimary veins moderately distinct; conspicuously flat above and below; minor veins moderately distinct on fresh leaves but rather inconspicuous on drying, alternating with short-lineate or punctiform secretory ducts. *Inflorescences* (post-anthesis) 2 per axil; peduncle green, 2-3 cm long. *Spathe* 10 cm long, 1.8 cm in diam. on tube, cuspidate at apex, medium green on tube outside, paler within, tinged faintly pink on tube inside. *Spadix* 6.3-11 cm long; *pistillate portion* 5.6-7.8 cm long, 0.7-1.1 cm in diam. midway, 0.6 cm in diam. at base, 0.3-0.9 cm in diam. at apex; *staminate portion* 3.2 cm long, drying 0.5-0.6 cm in diam., protruding well beyond the end of the spathe after anthesis. *Pistils* closely compacted, 5 mm long; style 1.2-1.6 mm wide, irregularly rounded, the surface drying granular, the margins thin, stigma rounded 0.2-0.4 mm in diam., depressed-globose, button-shaped on drying with a weak depression in the middle; ovary 4-5-locular; juvenile seeds narrowly ovoid to ovoid-ellipsoid, 1 mm long, finely striate longitudinally, 1-2 per locule, one positioned near the base and one closer to the apex.

Etymology. – The species epithet *"huaynacapacense"* comes from the village of Huayna Capac, west of Tingo Maria, where the type was collected.

Distribution. – *Philodendron huaynacapacense* ranges from central Peru to N Bolivia at 600-1294 m. It is currently known only from two localities. The type collection was made in Peru in the Huanuco Department in a premontane wet forest life zone (Holdridge 1967) at about 1300 m elevation, but a second collection was made more than 1000 km further south in Bolivia at 600 m in the Department of Cochabamba.

Relationship. – The species is a member of *Philodendron* subg. *Philodendron* sect. *Macrobelium* subsect. *Macrobelium* and a relative of *P. sagittifolium,* a species ranging from Mexico to Colombia and Venezuela. Our species differs from that species in having inflorescences with the spadix protruding beyond the end of the spathe at anthesis and in having the spathe tube weakly tinged

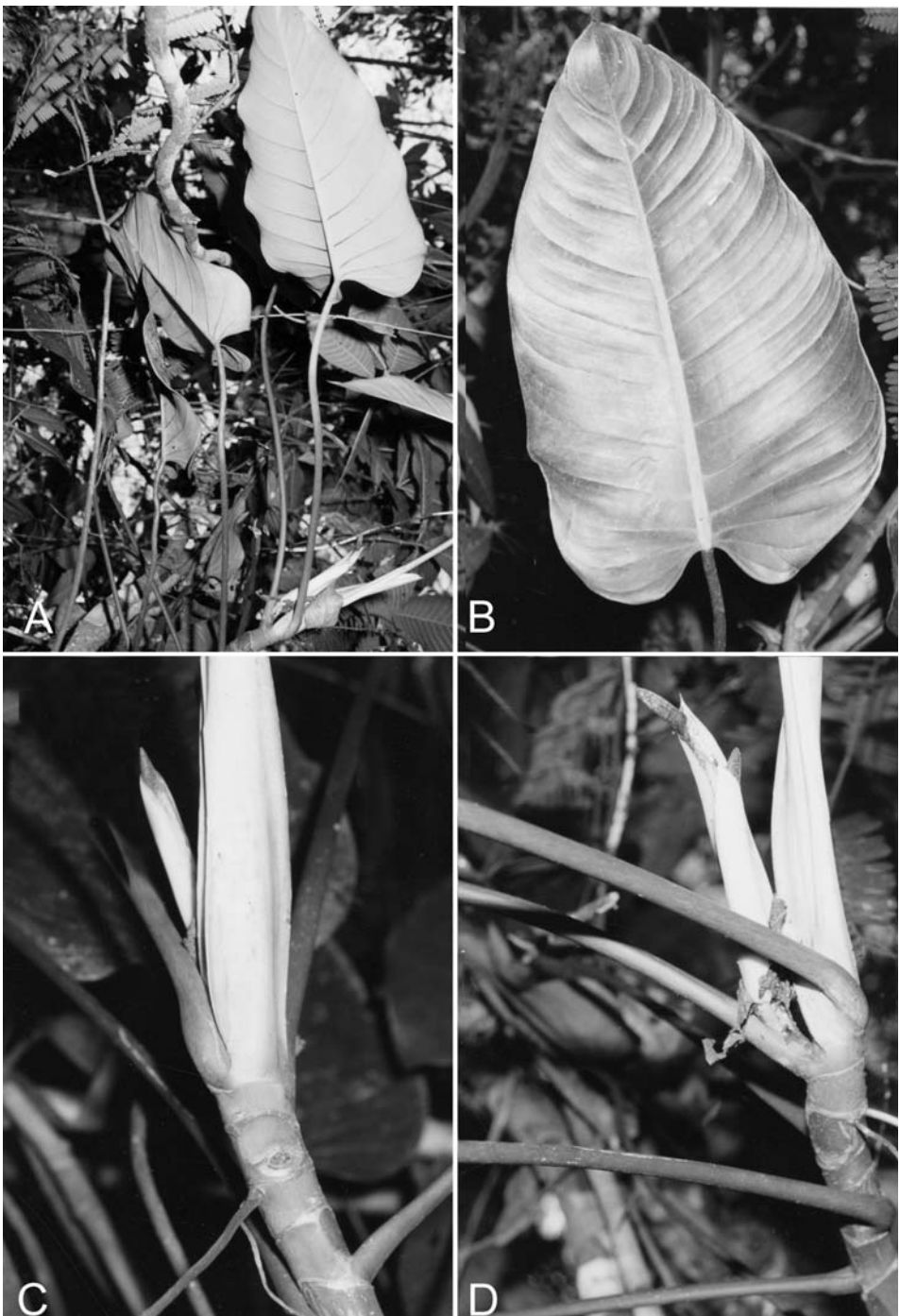

Fig. 1. *Philodendron huaynacapacense* – A: habit; B: blade, adaxial surface; C: stem with petiole bases, cataphyll and open inflorescence; D: close-up of stem, showing 2-ribbed cataphyll and face view of inflorescence with protruding staminate spadix. – All from the type collection *Croat & Sizemore 81896.*

pinkish on inside rather than red to reddish purple (B & K red-purple, 3/7/5). The pistillate portion of the spadix of *P. huaynacapacense* is 5.6-7.8 cm long, whereas the longest pistillate spadix seen in *P. sagittifolium* is 6.2 cm long.

Paratype. – BOLIVIA: Cochabamba, Prov. Carrasco, Campamento Guacharos, Parque Nacional Carrasco, 17°04'1"S, 65°39'0"W, 16.5.2004, *N. Altamirano & J. Teran 525* (MO).

2. Philodendron rimachii Croat, **sp. nov.**
Holotype: Peru, Loreto, Maynas Province, Santa Maria de Nanay, Mishana, primary forest over mixed sand and clay, 3°55'S, 73°35'W, 90 m, 1.10.1990, *J. J. Pipoly & R. Vázquez 12665* (MO 3850277; isotypes: B, F, K, US, USM).

Planta terrestris; internodia brevia, 1-1.5 cm diam.; cataphylla viridia, (5.5-)7-13.5 cm longa, decidua; petiolus 11-43 cm longus; lamina triangulari-ovato-subsagittata, 18-38 cm longa, 5-22 cm lata; lobulis posterioribus 2.5-12 cm longis, nervis primariis lateralibus 3-8 utroque; inflorescentia 1-2 per quoque axillam, pedunculo 6-10 cm longo; spatha (4-)5.2-7.5 cm longa, tubo viride, lamina alba; spadix 6.7 cm longus.

Terrestrial [description from dried material]. *Internode*s short, 1-1.5 cm long, drying dark black, closely ribbed longitudinally. *Cataphylls* green, unribbed, (5.5-)7-13.5 cm, 1 or 2 persisting at upper nodes. *Leaves* erect with pendent blades; *petioles* subterete, 11-43 cm long (averaging 27.7 cm), drying black; *blades* triangular-ovate-subsagittate, drying dark brownish black above, paler and dark greyish below, 18-38 cm long (averaging 28 cm), 5-22 cm wide (averaging 14.5 cm), 1.9 times longer than wide, shallowly to moderately lobed at base; anterior lobe 13-31 cm long (averaging 24.4 cm); posterior lobes 2.5-12 cm long (averaging 7.4 cm); sinus usually arcuate to parabolic, rarely V-shaped, 0.5-8 cm deep (averaging 3.6 cm); midrib flattened and concolourous above, drying darker than surface above, reddish brown and darker than surface below; *midrib* narrowly rounded and slightly paler above, narrowly rounded and paler below; *basal veins* 2-5 (averaging 3), usually 1st and sometimes 2nd basal vein free to the base, 2nd-3rd and 4th usually fused for 1.3 cm; posterior rib not at all naked or sometimes weakly naked near petiole; *primary lateral veins* 3-8 pairs per side (averaging 5), departing midrib at 35-50° angle. *Inflorescence* 1-2 per axil; peduncle 6-10 cm long, drying 0.2-0.3 cm in diam., dark brown, matte. *Spathe* (4-)5.2-7.5 cm long, tube green, ellipsoid, (2.5-)3-4 cm long; blade white with reddish purple spots, (1.5-)2-4.5 cm long. *Spadix* to 6.7 cm long, 0.6-0.7 cm stipitate; *pistillate portion* 1.3 cm long, 0.5-0.6 cm in diam. on drying; *staminate portion* 4-4.7 cm long, 1.7 cm in diam. on sterile staminate segment, to 1.7 cm in diam. at constricted area. *Ovary* 5 mm long, 4-5-locular; ovules 1-2 per locule, attached basally, surrounded by a broad envelope; funicle about as long as the ovule, attached about midway on the ovule. *Infructescence* with peduncle to 14 cm long, spathe tube to 5.2 cm long, 3.5 cm in diam. *Seeds* c. 8-10 per locule, cylindrical, drying dark brown, 1.5 mm long, 0.5 mm in diam., with both sides enveloped by a spongy appendage extending along the entire edge and making the seeds 1-1.2 mm wide with the opposite sides of the seeds exposed, the ends usually overtopped by the spongy appendage.

Eponymy. – The species is named in honour of the Peruvian plant collector Manuel Rimachi, whose many excellent collections, especially from the Department of Loreto, have contributed substantially to our understanding of the botany of Amazonia. He has long been involved with Dr Sidney McDaniel of the Institute for Botanical Exploration in Starkville, Mississippi, who is working toward a Flora of Loreto Department, Peru.

Distribution. – *Philodendron rimachii* is endemic to the Loreto Department in Peru, along the Amazon River between Iquitos and Yanomono at 90-150 m elevation, in mature tropical moist forest (Holdridge 1967) along small streams on mud, in swamps over clay or white sand, or in mature upland forest on poorly drained, sandy or lateritic soils.

Relationship. – The species is a member of *Philodendron* subg. *Philodendron* sect. *Macrobelium,* closest to subsection *Glossophyllum* series *Ovata*. It is characterized by its terrestrial habit, short

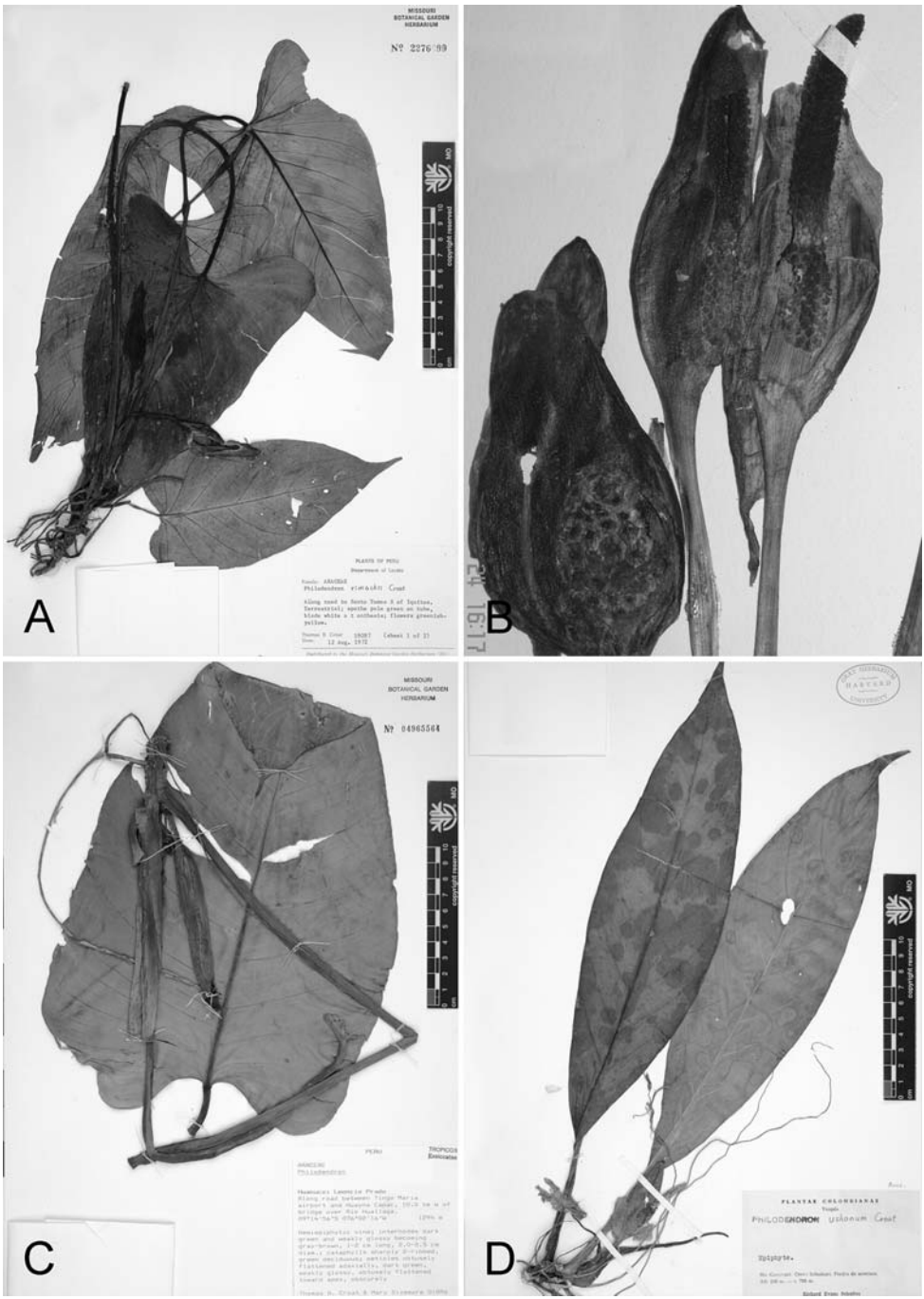

Fig. 2. A: *Philodendron rimachii, Croat 19087;* B: *P. rimachii,* type specimen *J. J. Pipoly & R. Vázquez 12665;* C: *P. huaynacapacense,* type specimen *Croat & Sizemore 81896;* D: *P. wadedavisii,* type specimen *R. E. Schultes & I. Cabrera 14457*.

internodes, the subterete petioles and triangular-ovate-subsagittate, thin, dark brownish black-drying blades, as well as by the long-pedunculate inflorescence with a green spathe tube and a white blade with reddish purple spots. The species has no known relatives or species with which it could easily be confused.

Paratypes. – PERU: LORETO: 17 km SE of Iquitos, 25.7.1972, *Croat 18489* (MO); 7 km SW of Iquitos, 31.7.1972, *Croat 18624* (MO); along road to Santo Thomas, S of Iquitos, 12.8.1972, *Croat 19087* (MO); 120 m, Yanamono, Explorama Tourist Camp, Río Amazonas above mouth of Río Napo, 3°22'S, 72°50'W, 23.3.1982, *Gentry & al. 36668* (MO); ibid., 3°28'S, 72°50'W, 7.1.1991, *Gentry & al. 72231* (MO); 120 m, Mishana, Río Nanay, 14.7.1977, *Solomon 3552* (MO); 150 m, Río Nanay between Santa Maria and Iquitos, vic. Mishana, 13.11.1977, *Gentry & Revilla 20661* (MO); 120 m, Iquitos, Carretera de Zungaro Cocha, 10 Enero 1995, *Rimachi 11284* (MO); Mishana, 8.8.1990, *R. Vásquez & al. 14200*, (CAS, COL, GH, MO, QCNE, UB); Quebrada Yanomono, Río Amazonas above mouth of Río Napo, 130 m, 15.11.1979, *Gentry & Jaramillo 28061* (MO); 140 m, Explorama Llachapa Camp, Quebrada Sucusari, Río Napo below Mazan, 8.11.1979, *Gentry & al. 27731* (MO); 140 m, Mishana, Río Nanay, halfway between Santa Maria de Nanay and Iquitos, 3°50'S, 73°30'W, 23.2.1981, *Gentry & al. 31591* (USM); 100 m, Mishuyacu, near Iquitos, 4.1930, *Klug 1139* (US); ibid., 5.1930, *Klug 1508* (F, NY); ibid., 24.9.1939, Killip 29939 (NY, US); 130 m, 24.7.1984, *McDaniel 27823* (MO); ibid., 24.9.1939, *Killip 29939* (NY, US); ibid., 1.4.1976, *Rimachi 2149* (IBE, MO); ibid., 130 m, 30.7.1988, *Werff 9858* (MO); Dtto. Iquitos, Allpahuayo, Estación Experimental del Instituto de Investigaciones de la Amazonía Peruana (IIAP), 30.5.1990, *Vásquez & al. 13801* (MO); Dtto. Iquitos, 150 m, 10.9.1981, *Rimachi 5673* (MO); 150 m, Carretera del Varillal, km 7 de Quisto Cocha to Nauta, trail to Caserio del Varilla, 17.7.1984, *Rimachi 7589* (IBE); Indiana, Yanamono, 106 m, Río Amazonas, 3°30'S, 72°50'W, 29.9.1988, *Vásquez & Jaramillo 11110* (AMAZ, MO, USM); 130 m, Mishana, Río Nanay, 3°55'S, 73°35'W, 10.7.1988, *Vásquez & al. 10920* (AMAZ, MO, QCNE, USM); Dtto. Iquitos, Estación Biológica Callicebus-Mishanañ Río Nanay, 3°55'S, 73°55'W, 130 m, 27.10.1980, *Vásquez & al. 688* (MO); Santa María de Nanay, 90 m, Mishana, 3°55'S, 73°35'W, 1.10.1990, *Pipoly & al. 12665* (MO).

3. *Philodendron ushanum* Croat & Moonen, **sp. nov.**

Holotype: Cultivated at Emerald Jungle Village from the wild source "French Guiana, Río Mataroni, Saut Bois, tributary of the Approuague River, 4°02'N, 53°07'W, 10-150 m, hemiepiphyte in crown of fallen tree", herbarium specimens prepared on 30.11.2000, *Joep Moonen 280* (MO 5909789; isotypes, CAY, NY, P, UB, US).

Planta hemiepiphytica; internodia adulta 3.5-6.5(-8) cm longa, 8-10 mm diam.; cataphylla 13-18 cm longa, 2-costata, persistentia semi-intacta; petiolus subteres, 17-19 cm longus, 1-1.3 cm diam.; lamina anguste ovata, 24-27 cm longa, 9-10 cm lata, nervis primariis lateralibus 4-6 utroque; inflorescentia solitaria, pedunculo 1.5-2 cm longo; spatha 10.5 cm longa, tubo 4.5-5 cm longo, 2 cm diam.; spadix 9 cm longus, parte pistillata 2.7 cm longa, 1.2 cm diam., pistillis 5-6-locularibus, ovulis 3-4 per loculum.

Hemiepiphyte, appressed-climbing as a juvenile plant, then spreading in the canopy with ultimate branches pendent, flowering from pendent branches [description from dried material]. *Juvenile plants* appressed-climbing; internodes 3-3.5 cm long, drying light reddish yellow-brown and longitudinally acute-ribbed; cataphylls pinkish, 2-3.5 cm long, tightly clasping stem, drying dark brown; petioles erect, short; blades shingled, narrowly ovate, 6-9 cm long, 3-4 cm wide, narrowly long-acuminate, dark green and matte above, drying dark brown above, moderately paler and yellow-brown below; primary lateral veins weakly sunken above in 2-3 pairs, arising at 30° angle; cross-veins distinct on the upper surface. *Adult plants* with internodes 3.5-6.5(-8) cm long, 0.8-1 cm in diam., glossy, dark green, smooth, light yellow-brown and acutely ribbed on drying on adult stems. *Cataphylls* 13-18 cm long, sharply 2-low-ribbed, heavily tinged reddish when fresh, persisting semi-intact, becoming fibrous toward the base, yellowish brown at upper nodes.

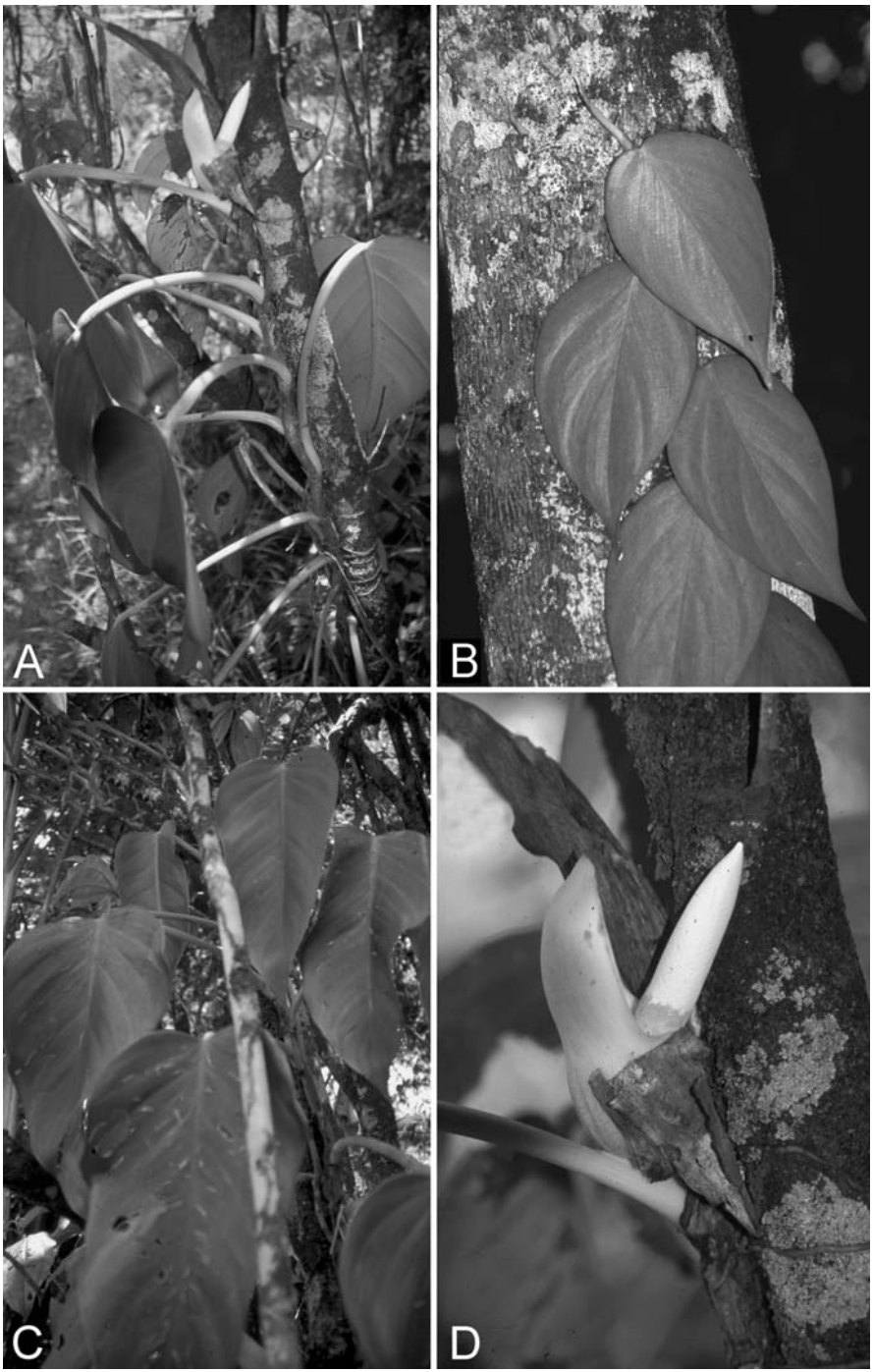

Fig. 3. *Philodendron ushanum* – A: habit of flowering plant; B: juvenile plant showing appressed blades; C: adult leaves; D: stem showing petiole bases and inflorescences. – The cultivated plant of which on 30.11.2000 the type collection, *Joep Moonen 280,* was made.

Petioles subterete, 17-19 cm long (averaging 18 cm), 1-1.3 cm in diam., spreading-arching laterally, medium green, weakly glossy, conspicuously constricted at apex, blackened on drying. *Blades* pendent, narrowly ovate, 24-27 × 9-10 cm (averaging 25 × 9.3 cm), 2.65× longer than wide, somewhat inequilateral with one side up to 0.8 cm wider, narrowly long-acuminate at apex, subcoriaceous, pinkish when young, drying matte, dark blackish brown on both surfaces, sometimes grey, weakly paler below, margins strongly undulate; major veins drying concolourous above, darker than surface below; *midrib* flat and concolourous above, drying flat and concolourous below; *primary lateral veins* 4-6 pairs per side, weakly sunken and concolourous above, convex and darker below, departing midrib at 30-40° angle; interprimary veins moderately distinct; minor veins moderately fine and close, obscure. *Inflorescence* 1 per axil; *peduncle* 1.5-2 cm long, hidden completely by the subtending petiole sheath and cataphylls (these sometimes fibrous), drying 0.3 cm in diam. midway. *Spathe* 8-10.5 cm long, to 1.2 cm in diam., stiffly erect at anthesis and opening broadly, rounded at apex with a short cusp, weakly constricted midway, convolute at the base, semiglossy and densely short pale-lineate throughout, yellowish along the margin outside, medium green to light green outside on tube, pale greenish white on blade outside, greenish white throughout, inside with fine light green vertical resin canals visible, these less than 1 mm wide, spaced 2-3 mm apart, the margins of the spathe brownish on both surfaces; tube 4.5-5 cm long, 2 cm in diam. (flattening to 5.7 cm wide). *Spadix* 7-9 cm long, yellow-white, stipitate (stipe bright red), protruding prominently forward at about 45° angle at anthesis, scarcely or not at all constricted above the sterile staminate portion, faintly pinkish red; *pistillate portion* 2.7-5 cm long, 1.2-1.4 cm in diam., drying 0.9-1 cm in diam.; *staminate portion* 6.5-10.5 cm long, 1-1.3 cm in diam.; *sterile staminate portion* 1 cm long, 1.5 cm in diam.; *fertile staminate portion* weakly constricted above the sterile staminate portion to 1.1 cm in diam., drying 0.8-0.9 cm in diam., ending abruptly at apex in an acute tip. *Pistils* 3.5 mm long, 5-6-locular; stigmas 1.6 mm in diam. (dried); ovules basal, 3-4 per locule, to 1.5 mm long; the funicle about as long as the ovule. – Flowering in the rainy season, beginning in November.

Distribution. – *Philodendron ushanum* has been collected only in the type locality in French Guiana at 10-150 m elevation, but it has also been seen at Savanne Roche la Virgenie about 6 km east of the Mataroni River. The region where the species is known to occur is probably tropical wet forest (Holdridge 1967); though no Holdridge lifezone map exists for the area, it falls within the parameters for that lifezone. The region has 4000 mm of rain per year with a weak dry season in August till the first half of November. Daytime temperatures range from 28-33 °C while nighttime temperatures are 21-23 °C.

Relationship. – The species is a member of *Philodendron* subg. *Philodendron* sect. *Macrobelium* subsect. *Macrobelium* ser. *Macrobelium* and is recognized by its appressed-climbing juvenile plants with shingled leaves and the pendent flowering branches having leaves with subterete petioles, narrowly ovate blades with 4-5 pairs of weak primary lateral veins and the solitary, short-pedunculate inflorescence with a densely short-lineate spathe greenish white inside, medium green on the tube outside and the blade greenish white outside.

The species is a relative of *Philodendron sagittatum* Liebm. and differs from that species in having much narrower, generally smaller leaves and a unique habitat with the flowering branches pendent. *P. sagittifolium* is an appressed-climbing plant as an adult and the plant flowers at only a few metres from the ground. It never branches to produce pendent flowering stems and its juvenile foliage lacks shingled leaves.

Eponymy. – The species was discovered by Joep Moonen, noted Dutch naturalist and co-author of the species. The species is named in honour of Usha Pratima Devi Raghoenandan, born 15.3.1964. She was murdered at the National Herbarium at the University of Suriname in Paramaibo on 22.1.2004. Usha was curator of the herbarium since Magda Werkhoven, long time herbarium curator in Suriname, was on long-term sick leave. Botanical colleagues enjoyed working with Usha both in the herbarium and in the field. She was interested in the vegetation of inselbergs in Suriname and her last field trip was made to Tafelberg in the Central Suriname Na-

ture Reserve. She was rapidly developing her experience with the plants of Suriname with the role of taking over that position at the university.

4. *Philodendron wadedavisii* Croat, **sp. nov.**
Holotype: Colombia, Vaupés, Río Kananari, Cerro Isibukuri, 70º74'W, 00º36'S, 250-700 m, 28.10. 1951, *R. E. Schultes & I. Cabrera 14457* (GH; isotype: MO).

Planta hemiepiphytica; internodia 1-2 cm longa, 5-8 mm diam.; cataphylla 6-10 cm longa, decidua; petiolus 7-9 cm longus; lamina anguste elliptica vel anguste obovato-elliptica, 28-40.5 cm longa, 8.5-10 cm lata, nervis primariis lateralibus 8-9 utroque; inflorescentia 1-2 per quoque axillam, pedunculo 3.5-4.5 cm longo; spatha 6.3-6.6 cm longa, 1-1.5 cm diam., viridis; spadix 5.3 cm longus.

Hemiepiphyte [description from dried material]. *Internodes* 1-2 cm long, 0.5-0.8 cm in diam., glossy, drying pale yellow-brown, closely ridged. *Cataphylls* 6-10 cm long, green, unribbed, persistent only at uppermost nodes, deciduous intact. *Petioles* 7-9 cm long (averaging 8 cm), brownish yellow, closely and irregularly ridged longitudinally. *Blades* narrowly elliptic to narrowly obovate-elliptic, 28-40.5 × 8.5-10 cm (averaging 33.8 × 9.17 cm), 3.7× longer than wide, narrowly long-acuminate at apex, acute to rounded at base, subcoriaceous, drying dark yellowish brown above, glossy both above and below; major veins drying paler than the upper surface, darker than the lower surface; *midrib* drying flat and concolourous to slightly darker above, bluntly angular and paler, yellowish brown, drying finely ridged below; *primary lateral veins* 8-9 pairs per side, flat and concolourous above, convex and lighter below, departing midrib at 35-50° angle; interprimary veins moderately few in number but moderately distinct when present. *Inflorescence* 1-2 per axil; *peduncle* 3.5-4.5 cm long, drying 0.2-0.3 cm wide midway. *Spathe* 6.3-6.6 cm long, 1-1.5 cm in diam. at anthesis, flattening to 3.5 cm wide at tube, medium green outside, paler green within, coarsely marked with resin canals on inner surface, these extending to 1/3 up the blade, about 2/3 of the entire spathe. *Spadix* 5.3 cm long; *pistillate portion* 2.4 cm long, 0.6-0.7 cm in diam.; *staminate portion* 2.8 cm long; *sterile staminate portion* 0.5 cm long, 0.4 cm in diam., white; *fertile staminate portion* 0.5 cm wide. *Stigmas* button-shaped with 5-6 holes, subtended by a broad pale apron, about twice as broad as stigma, 0.5 mm wide, pistils widely spaced, c. 3 mm long; ovary 5-6-locular; ovules 1 per locule.

Eponymy. – The species is named in honour of Dr Wade Davis who made the second collection of it. Davis was a student of Dr Richard Evans Schultes of Harvard University who conducted ethnobotanical studies in S Colombia. Schultes made the type collection but another species will be named in his honour. Wade Davis, famous in his own right as an ethnobotanist, followed in the footsteps of Schultes into the same region and collected the species on the Río Pirapirana.

Distribution. – *Philodendron wadedavisii* is known from NW Brazil along the upper Río Solimões and from SE Colombia in Vaupes Department along the Río Apaporis and the Río Piraparana (which lies somewhat to the north) between 00º36-38'S and 70º74-76'W at 250-700 m.

Relationships. – The species is a member of *Philodendron* sect. *Macrobelium* subsect. *Glossophyllum* ser. *Glossophyllum* and is recognized by its epiphytic habit, internodes slightly longer than wide, unribbed, deciduous cataphylls, short, yellowish brown dried petioles, the narrow, ± oblong-elliptic narrowly acuminate blades, which are acute to narrowly rounded at the base, and the 1-2 small greenish inflorescences. In addition, the species has leaves usually less than 40 cm long and the inflorescence has a peduncle 3.5-4.5 cm long and a spathe 6.3-6.6 cm long. The lower blade surfaces are minutely dark glandular-punctate and have short linear cellular inclusions visible on dried leaves.

The species is closest to *Philodendron acutifolium* K. Krause, the latter, however, has elongated blades of similar colour but being 45-90 cm long (versus 32-43.5 cm in *P. wadedavisii*) and 10 cm wide, and has a much larger inflorescence with peduncles to 10 or 15 cm long and spathes

regularly to more than 10 cm long. In addition *P. acutifolium* has blades that have conspicuous cross-veins on drying and lack the minutely glandular lower blade surfaces with minute pale linear cellular inclusions.

Paratypes. – BRAZIL: AMAZONAS: Upper Río Solimões, Municipio São Paulo de Olivença, 8 km from main square, 3°30'S, 68°57'W, 5.12.1986, *Daly & al. 4480* (NY). — COLOMBIA: VAUPES: Río Piraparana, environs of the Catholic mission of San Miguel, trail beyond the airstrip to the chacras beyond, 24.10.1976, *Davis 160* (GH, SEL).

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