

STUDIES IN ARACEAE II:
ANTHURIUM SECTION POLYPHYLLIUM

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Anthurium section *Polyphyllum* was established by Engler in 1879 to accommodate his species *A. mexicanum*. A translation of his Latin diagnosis for the section follows:

Sympodial branchlets multileaved, bearing, after one cataphyll¹, 4-6 leaves and a long pedunculate spadix, the lowermost internode of each branchlet adnate to the internode between the next to last leaf (Ln-1) and the last leaf (Ln) of the preceding branchlet. Blade oblong-lanceolate, base cordate, primary lateral nerves 2 and borne from the base, the interior collective nerve remote from the margin. Fruit oblong, subconoid, 2-locular with each locule one-seeded.

Engler (1905), in his key to sections, distinguished section *Polyphyllum* by the occurrence of flowering branches bearing more than one leaf, in contrast to flowering branches bearing only a single leaf for all other sections.

According to Engler (1876, 1879), the growth pattern (diagrammed in Table 1) in both forms is similar from cotyledon to flowering, which terminates the original axis and, in each form, the first renewal shoot is born in the axil of the penultimate leaf (Ln-1) and initially bears a bicarinate prophyll (N). In all sections, except section *Polyphyllum*, a 1-ribbed cataphyll (Nn-1) follows the bicarinate prophyll (N) and, in turn, is followed by a single leaf (Ln) and a single inflorescence (S) which terminates the renewal shoot (Diagram 1). In the axil of the 1-ribbed cataphyll (Nn-1) of the renewal shoot, a second renewal shoot develops which is similar to the first; and so on. In addition, side branches (N,N,L...) of the sympodium may develop from axillary buds which may, again, grow into sympodia.

In contrast, in section *Polyphyllum* (Diagram 2), the first renewal shoot bears, after the bicarinate prophyll, a series of 1-6 leaves before terminating in an inflorescence. One-ribbed cataphylls are not produced; the leaf sheath performs the protective functions of the 1-ribbed cataphylls. A second renewal shoot, which is similar to the first, develops in the axil of the penultimate leaf (Ln-1) of the first renewal shoot; and so on. The difference given in Engler's dichotomy, i.e., flowering branches bearing more than one leaf vs. flowering branches bearing only a single leaf, is not easily detected, nor does it appear to be always true. The most easily observed and perhaps most significant character of section *Polyphyllum* is the lack of 1-ribbed cataphylls. Other differences will be outlined in our emended description of the section.

At present our concept of the section includes *A. clidemioides* Standley, and two subspecies of *A. flexile* Schott, subsp. *flexile* and subsp. *muelleri* (formally known as *A. mexicanum* Engler). *Anthurium exstipulatum* Sodiro, from Ecuador, was described as having no cataphylls and based on a sterile collection. In 1903, Sodiro suggested that his species may be a juve-

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¹In his Latin descriptions, Engler used the term cataphyll but did not distinguish between the two kinds. For the purposes of this paper, we will refer to the two-keeled cataphyll (zweikieliges Niederblatt, see Engler, 1876) as the bicarinate prophyll and the one-keeled cataphyll (einkieliges Niederblatt) as the 1-ribbed cataphyll. In this instance Engler is referring to the bicarinate prophyll.

nile of *A. dictyophyllum* Sodiro, or of a related species. Until this taxon is better known, we prefer to exclude it from consideration in this section.

ANTHURIUM SECTION *POLYPHYLLIUM* ENGLER

Sympodial branchlets bearing 1-6 leaves above the bicarinate prophyll and terminating in an inflorescence, the lowermost internode of each renewal shoot adnate to the internode between the penultimate leaf and the last leaf of the preceding shoot; caudex slender, sinuous, the internodes elongate, with scattered adventitious roots; 1-ribbed cataphylls lacking. Leaves epunctate, cordate to narrowly subcordate at the base with 2-4 pairs of veins originating at the base of the leaf and at least the inner pair extending to the apex of the blade. Peduncle very short to twice as long as the petiole; spadix linear-tapered; fruits oblong, orange to red, apparently borne on the lower one-half of the spadix.

The members of section *Polyphyllum* exhibit three characters that are unique among the known species of *Anthurium*: (1) the unusual growth pattern discussed above, (2) the lack of 1-ribbed cataphylls, and (3) the adventitious roots scattered along the internodes. Further, the vining, flexible caudex and melastome-like venation are rather rare in the genus.

KEY TO SPECIES

Caudex with lenticel-like tubercles; leaves bullate; peduncle extremely short, almost obscured by the base of the spathe; endemic to Costa Rica
 *A. clidemioides*.

Caudex relatively smooth; leaves not bullate; peduncle 1-2 times as long as the subtending petiole; Panama to Mexico *A. flexile*.

Anthurium clidemioides Standley, Field Mus. Nat. Hist., Bot. Ser. 22(1):3. 1940. Figures 1 & 2.

Epiphyte, the caudex scandent, vine-like, bearing numerous adventitious roots, the internodes elongate, 2-15 cm long, 2-3 mm thick, covered with corky, lenticel-like tubercles; 1-ribbed cataphylls absent; bicarinate prophyll ca. 2 cm long. Leaves chartaceous, epunctate, dull; petiole 2-5.5 cm long, vaginate half its length or less, the base encircling the stem, the upper side narrowly flattened with a medial ridge, the remainder of the circumference faintly multi-ridged, the geniculum less than 5 mm long, weakly tuberculate as on the stem, scarcely differentiated from the petiole (on dried specimens); blade ovate-cordate, acuminate at the apex, cordate at the base, (7) 8-14 cm long, 4-9.5 cm wide, the apical lobe 6-11 cm long, broadest 1-2 cm above the point of petiole attachment, the basal lobes rounded, 1-2 cm long, the sinus open, about as broad as long; venation resembling that typical of the Melastomataceae, with 4 or 5 pairs of basal veins, the lower 4 pairs scarcely or not at all fused, the bottom 2-4 pairs of basal veins arcuate ascending, running to the margin, the upper two pairs running parallel to the margin and meeting at the apex, the upper leaf surface dark green, bullate, all the veins sunken, the lower surface paler. Inflorescence solitary; peduncle to 5 mm long; spathe spreading, ca. 5 cm long, ca. 1 cm wide, lanceolate, yellow or greenish when dry, gradually tapering to the long-acuminate apex, the base clasping; spadix 4.2-6 cm long, 0.5 cm in diameter, broadest at or near the base, tapering to the apex, ca. 3 mm in diameter near the tip; flowers proto-

gynous, to 5.3 mm wide in the direction of the spadix axis, to 3.5 mm wide perpendicular to the spadix axis; tepals semi-glossy, drying dark reddish-brown, the inner margins of the lateral tepals ca. 2.5 mm broad perpendicular to the axis, usually broadly curved to almost straight; pistil scarcely exceeding the tepals; stigma punctiform, ca. 0.6 mm in diameter; stamens exceeding the tepals by the length of the anther; thecae 0.4 mm long and 0.4 mm wide; berry obovoid to oblong-ellipsoid, (5) 8-9 mm long, 4-6 mm wide, orange, drying dark maroon; seeds (1) 2-6 per berry, obovate-elliptic, flattened, brown or black, 7 mm long, 3.5 mm wide (based on dried fruit).

TYPE: Costa Rica, Alajuela Prov., Villa Quesada, San Carlos, altitude 800 m. *Valerio 1726* (HOLOTYPE: F).

DISTRIBUTION: *COSTA RICA*: Plants of the tropical wet forest formations from 100 to 800 m altitude. Apparently endemic to the Atlantic lowlands of Costa Rica. Known to us from only 5 collections. Collected in flower and fruit in March, September, and November.

COSTA RICA: ALEJUELA: Villa Quesada, *Valerio 1726* (HOLOTYPE: F). HEREDIA: Sarapaquí Valley on Río Puerto Viejo, *Moore 9998* (BH); Finca La Selva, 3 km SE of Puerto Viejo, *Opler 2091* (F); *Hartshorn 939* (MO). Cultivated at the home of Roberto Burle Marx outside of Rio de Janeiro, Brazil, *Daniels & Reed 3619* (US).

Anthurium clidemioides is easily one of the most distinctive species of *Anthurium* due to the bullate leaves and near absence of a peduncle. In its sterile state, it could easily be mistaken for species of *Piper*, *Dioscorea*, *Pilea*, or even some Melastomataceae.

Anthurium flexile Schott, Oesterr. Bot. Zeitung 8:180. 1858.

Scandent epiphyte, the caudex elongate, the internodes 2-6 cm long, ca. 3 mm thick, thinly striate on dried specimens, lacking tubercles; adventitious roots present along the internodes; 1-ribbed cataphylls lacking; the bicarinate prophylls 1-3.5 cm long, deciduous. Leaves membranaceous to chartaceous, epunctate; petiole 4-11 cm long, the sheath 1-2.5 cm long, encircling the caudex at the base, flattened to canaliculate on the upper surface distally; geniculum inconspicuous on dried specimens; blade elliptic, narrowly elliptic, or lanceolate, narrowly truncate, narrowly subcordate, or cordate at the base, acuminate to long-acuminate at the apex, (10) 13-26.5 (30) cm long, (2.5) 3.2-9 (10.5) cm wide, the upper surface semi-glossy (fresh), the midrib sunken (undulate on drying), the primary lateral veins weakly sunken, forming an angle of 30-40° with the midrib, straight, joining the inner collective vein; the collective veins 2 on each side (rarely a third which joins the margin near base of blade), arising from the base of the blade, the outer (lower) pair faint, paralleling the inner pair, but usually joining the margin in the lower half of the blade, at most 1-10 mm from the margin (sometimes extending to apex very close to margin), the inner collective veins originating from the base or fused with the midrib for 0.2-2.5 cm from the base and ascending from the midrib at an acute angle, extending to the apex of the blade, 6-25 mm from the margin at maximum, as prominent as major lateral veins above, more prominent than major lateral veins beneath. Inflorescence solitary, usually arching-pendent; peduncle terete, 4-23 cm long; spathe 3.5-9.5 cm long, 0.7-1.8 cm wide, lanceolate, long-acuminate at the apex, decurrent for 0.3-0.5 cm at the base, subcordate and partly clasping, usually spreading at a

90° angle, drying green; stipe absent or up to 2 cm long; spadix linear-tapered, 4.5-13 cm long, 0.3-0.5 cm diameter at the base, gradually tapering towards the sharp apex, usually less than 1 mm in diameter near the apex; flowers protogynous, 3-5 visible in full face view from any angle, 2.2-2.7 mm wide in the direction of the spadix axis, 2-2.4 mm wide perpendicular to the spadix axis; tepals yellow-brown, drying tan to dark brown, semi-glossy, with a few somewhat elongated cystoliths; stamens with thecae fully exerted at anthesis, held just above the tepals; thecae 0.4-0.5 mm long, 0.5-0.7 mm wide, pollen (white ?); stigma round, ca. 0.3 mm in diameter, held at the level of the tepals at anthesis. Fruiting spadix to 2 cm thick; berries oblong-ellipsoid to narrowly ellipsoid or narrowly ovoid (with four longitudinal ridges on dried specimens), 0.5-1.2 cm long, orange to red at maturity, often with numerous round to slightly elongated cystoliths visible on drying; mesocarp orange, pulpy, sweet; seeds (1) 2 (3) per berry, black, suborbicular, flattened, ca. 6-9 mm long.

TYPE: Costa Rica, Prov. Heredia, Pedregal, *Wendland 932* (probably destroyed at Vienna or Berlin). Type photo seen, Field Museum Neg. No. 29814. This photo is of a specimen previously in the Vienna herbarium (W). It was no doubt taken from the living type collection in Vienna.

DISTRIBUTION: Mexico to Panama, sea level to 1700 m altitude.

KEY TO SUBSPECIES

Leaves usually palminerved, cordate at the base and broadest below the middle of the blade, lanceolate in shape; spadix usually with a conspicuous stipe 0.1-2.0 cm long; northern Guatemala to Mexico, 1000-1700 m elevation subsp. *muelleri*

Leaves plinerved, narrowly subcordate at the base, broadest at or above the middle of the blade, elliptic to narrowly elliptic in shape; spadix sessile or with the stipe to 0.2 cm long; Mexico to Panama, 0-1000 m elevation subsp. *flexile*

Anthurium flexile subsp. **flexile** Figure 3.

? *A. myosuroides* var. *angustifolia* Engler, Bot. Jahrb. 25:382. 1898.

TYPE: Costa Rica, Prov. Limon, Matina, *Pittier 9797* (?*Pittier 9767*, BR, CR, US).

Leaves elliptic to narrowly elliptic, broadest at or above the middle of the blade, the base narrowly subcordate, the inner pair of basal veins fused with the midrib for 0.2-2.5 cm. Stipe 0-2 mm long. Flowering throughout the year.

DISTRIBUTION: Mexico to Panama; plants of the tropical wet forest life zones from sea level to 1000 m elevation.

MEXICO: CHIAPAS: Municipio of Palenque, 6-12 km S. of Palenque on road to Ocosingo; elev. 300 m, *Breedlove 24248, 26513, 28889* (all CAS); Municipio of Palenque, Aqua Salud, *Breedlove 35342* (CAS); ruins of Palenque, forest area along trail behind temple of Inscriptions, *Hoover 135* (MO); selva densa húmeda Jauarineró, orillas del Río Charamas, 35 km E. de Palenque, 80 m elev., *Matuda 3644* (MEXU). TABASCO: Cerro las Campanas, 3 km E. of Teapa, ca. 50 km S. of Villahermosa, elev. 50-100 m, *Conrad et al. 2881* (MO). VERA CRUZ: Cerro al e. de Coyame, lado NE

de Lago Catemaco, elev. 700 m, *Beaman 5304* (F); Estación Biologica Los Tuxtlas, Montepio, *Gómez-Pompa 4565* (F); between Catemaco and Zontecompan, on road to Monte Pio, 400 m, *Moore & Cetto 6253* (BH).

GUATEMALA: IZABAL: Río Chacon, *Johnson 1257* (F); Cerro San Gil, along Río Bonita, elev. 30-150 m, *Steyermark 41693* (F); Cerro San Gil, damp forested slopes and barrancos, elev. 300-900 m, *Steyermark 41886* (F).

HONDURAS: ATLÁNTIDA: Montaña Lancetilla, cerca de El Portillo, 3 km al sur de Lancetilla, alt. 500 m, *Molina R. 10454* (F); Lancetilla Valley near Tela, alt. 20-600 m, *Standley 53105, 53349, 56544* (all F, US); ridge above Lancetilla, elev. 800 ft., *Yuncker 4615* (F, MO); vicinity of La Ceiba, *Yuncker et al. 8202* (F, MO, US). GRACIOSA DIOS: Mosquitia Region Río Plantano, 0-4 hours upriver from village of Ras, near sea level, *Gentry et al. 7518* (MO).

BELIZE: TOLEDO: near Monkey River, high ridge, *Gentle 3852* (MO); Cockscomb Mts., Maya mounds, 400 ft. elev., *Schipp S-192* (MO); Silter River, Kendal, 150 ft. elev., *Schipp 192* (F); 1928 Camp, Río Blanco branch (Museum Yale School of Forestry), *Stevenson 110* (F).

COSTA RICA: ALAJUELA: 3 km NNE of Bijagua along the road to Upala, 450 m alt., *Burger & Baker 9871* (F); along road between Cañas and Upala, 10 km N. of Bijagua, elev. 200 m, primary forest, *Croat 36437* (MO); Llanura de San Carlos, alt. 100 m, *Molina et al 17658* (EAP, F). GUANACASTE: Tilarán, ridge ca. 2.5 miles above town, *Gentry 2025* (MO); vicinity of Tilarán, alt. 500-650 m, *Standley & Valerio 45020* (US); Quebrada Grande, SE of Tilarán, alt. 650 m, *Standley & Valerio 46112* (US); La Tejona, N. of Tilarán, alt. 600-700 m, *Standley & Valerio 45997* (US); vicinity of Tilarán, alt. 500-650 m, *Standley & Valerio 44253, 44290* (US). HEREDIA: bei Pedregal, *Wendland 932* (Photo of type F, Photo of drawing F, MO, NY, US). LIMON: Matina, *Pittier 9767* (BR, CR, US); Forest Road, Los Diamantes, *Schubert 1133* (US). PUNTARENAS: 1 km SE of the Río Claro along the NE side of the Interamerican Hwy (to Panama), 20-30 m elev., *Burger & Matta 4803* (F). CARTAGO: sur les arbres á La Vueltas, Tucurrique, 635 m elev., *Tonduz 12750* (US).

NICARAGUA: CHONTALES: *Tate 405* (B).

PANAMA: BOCAS DEL TORO: Along railroad between Almirante and Chanquinola at Mile 7.5 on forested hill, elev. ca. 100 m, *Croat & Porter 16365A, 16405* (both MO); Almirante, Filo de Almirante, *Kennedy 1307* (F). Water Valley, near sea level, *von Wedel 713, 978* (both MO). CANAL ZONE: Barro Colorado Island, *Bailey & Bailey 517, 625* (both F); *Starry 60* (F, MO). CHIRIQUÍ: vicinity of San Bartolomé, Burica Peninsula, elev. 0-50 m, *Woodson & Schery 921* (MO). COCLÉ: mountains beyond La Pintada, 400-600 m, *Allen 584* (MO); vicinity of El Valle, elev. 600-1000 m, *Allen 1186* (MO); region of El Valle de Antón, trail to Las Minas, ca. 1000 m elev., *Allen 2715* (F); El Valle, *Ebinger 1123* (MO). DARIEN: trail between Pinogana and Yavisa, ca. 15 m, *Allen 290* (F, MO); near mouth of Río Yape, ca. 20 m, *Allen 345* (MO); road from El Real to Pinogana, *Duke 5016* (MO); 1-4 miles N of Pucro, *Duke 13035* (MO); between Paya and Palo de las Letras, *Duke & Kirkbride 14021* (MO); Boca de Pauarandó, on Sambu River, alt. 20 m, *Pittier 5574* (US); vicinity Campamiento Buena Vista, Río Chucunaque above confluence with Río Tuquesa, *Stern et al 869* (MO).

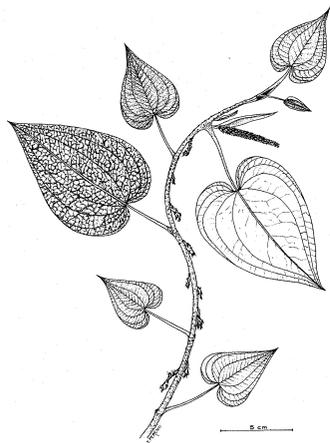


Figure 1



Figure 2

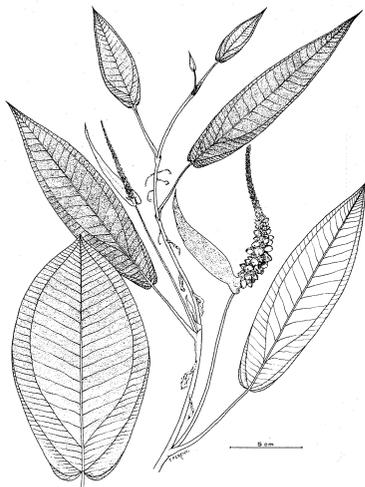


Figure 3

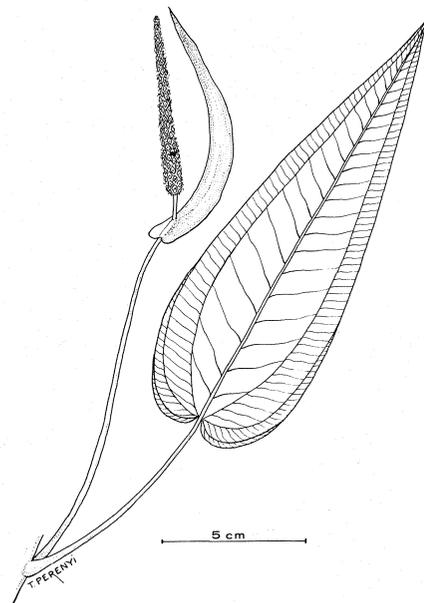


Figure 4

Figure 1. *Anthurium clidemioides* Standley (semi-diagrammatic, based on Daniels & Reed 3619 and Opler 2091).

Figure 2. *Anthurium clidemioides* Standley (Daniels & Reed 3619).

Figure 3. *Anthurium flexile* Schott subsp. *flexile* (semi-diagrammatic, based on Schipp S-192, Molina R. 17658, and Allen 2715).

Figure 4. *Anthurium flexile* subsp. *muelleri* (Macbride) Croat & Baker Steyermark 37414).

Subsp. *flexile* differs from subsp. *muelleri* in having the leaves narrower at the base, the stipe lacking, and in its distribution and altitude range.

Anthurium flexile subsp. *flexile* has been generally known under the name *A. myosuroides* (HBK) Endl., described from Quindiu, Colombia. However, our examination of the illustration of *Pothos myosuroides* HBK and two Colombian specimens referable to that species (*Cuatrecasas* 22286, 15399) leads us to believe that this name is not applicable to the widespread Central American taxon. Although there are some similarities in leaf shape between our species and *A. myosuroides*, the illustration of *Pothos myosuroides* shows the presence of a rather large 1-ribbed cataphyll and that species clearly does not belong to *Anthurium* section *Polyphyllum*. True *A. myosuroides* appears to be closely related to the *A. microspadix* complex and is restricted to Colombia and adjacent Panama.

The excellent Schott illustration of *A. flexile* matches the Central American taxon very well (Icon. Herb. Palat. Vinob. Schott Aroideae 317, 318; NYBG Neg. 3814 and 3815). Also seen was a photograph (FM 29814) of loose leaves and inflorescences deposited at Vienna by Schott (now destroyed) and no doubt taken from the living type collection in Vienna.

Engler's concepts of *A. myosuroides* and *A. flexile* appeared to be basically correct. His citation of *Tate* 405 as *A. flexile* is accurate; however, the confusion (compounded by later workers) may have started with his description of *A. myosuroides* var. *angustifolia*, from Matina, Costa Rica, and his misidentification of *Pittier* 3863 as *A. myosuroides*. This collection, from El General, appears to be one of the myriad forms of *A. microspadix* Schott. *Pittier* 9797, the type of *Anthurium myosuroides* var. *angustifolia*, has not yet been located². The type locality, Matina, is in Limon Province and at very low elevation (ca. 50 m), the habitat of *A. flexile*. No specimens of *A. microspadix* or its relatives have ever been found below 600 m elevation (they are rarely found below 1000 m). It seems likely that *A. myosuroides* var. *angustifolia* is actually *A. flexile*.

In the Flora of Costa Rica (1937), Standley recognized both *A. flexile* and *A. myosuroides*. Standley's material (at US) from near Tilarán that he annotated as *A. flexile* is indeed that species; however, most of the specimens he annotated as *A. myosuroides* are also *A. flexile* (a few of these are referable to *A. microspadix*). In the Flora of Panama (1944), he treated only *A. myosuroides*, but, again, the cited Panamanian material is clearly referable to *A. flexile*. The name *A. flexile* has been overlooked by workers since Standley. Matuda (1954), Standley and Steyermark (1958), and Bunting (1965) also applied the name *A. myosuroides* to specimens of *A. flexile* subsp. *flexile*.

***Anthurium flexile* subsp. *muelleri* (Macbride) Croat & Baker, stat. nov.**
Figure 4.

A. muelleri Macbride, *Candollea* 5:348. 1934.

TYPE: *A. mexicanum* Engler, non Liebmann.

A. mexicanum Engler, DC. Mon. Phan. II:105. 1879, non Liebmann.

TYPE: Mexico, Veracruz, Orizaba, *Mueller* 993 (LECTOTYPE: NY; ISOTYPES: BR, LE).

²*Pittier* 9767 (BR, CR, US), from Matina, is referable to *A. flexile*. The specimen at CR is identified as *A. myosuroides* forma *angustifolia* by Engler. It is possible that the citation of *Pittier* 9797 as the type of *A. myosuroides* var. *angustifolia* was in error.

Leaves lanceolate, broadest below the middle, the base cordate, the inner pair of basal veins not fused with the midrib or only very rarely so. Stipe 1-20 mm long. $2N=60$ (Sheffer & Kamemoto, 1976).

DISTRIBUTION: Northern Guatemala and Mexico, 1000-1700 m elevation. Flowering throughout the year.

MEXICO: CHIAPAS: Municipio of Pueblo Nuevo, Solistahuacán, near Rincon Chamula, elev. 5800 feet, *Clark 289* (DS); Selva Negra, 10 km above Rayón Mezcalapa along road to Jitotol, elev. 1700 m, *Breedlove 26132* (CAS). VERA CRUZ: Vertiente sur del Volcán San Martín Tuxtla, alt. 1250 m, *Beamon & Alvarez 5349* (F); Cerro de San Martín, *Calzada 207, 577* (both F); Orizaba, *Mueller 993* (LECTOTYPE: NY. ISOTYPES: BR, LE); Volcán San Martín, alt. 1600 m, *Neuling & Gomez-Pompa 2475* (F); Volcán San Martín, alt. 1250 m, *Neuling & Gomez-Pompa 2503* (F).

GUATEMALA: CHIMALTENANGO: Panajabal, ca. 1350 m elev., *Standley 62121* (F); near Sibajá, about 1050 m elev., *Standley 62281* (F). ESCUINTLA: *Aguilar 1655* (F). QUEZALTENANGO: Finca Pirineos, below Santa María de Jesús, alt. 1350-1380 m, *Standley 68324* (F); above Santa María de Jesús, alt. 1680 m, *Standley 84858* (F); along old road between Finca Pirineos and Patzulín, alt. 1200-1400 m, *Standley 86955, 86977, 86990* (all F); along Quebrada San Gerónimo, Finca Pirineos, lower south-facing slopes of Volcán Santa María, between Santa María de Jesús and Calahuaché, alt. 1300-2000 m, *Steyermark 33336, 33450* (both F). QUICHÉ: *Aguilar 743* (F). SAN MARCOS: above Finca El Porvenir, up Cerro de Mono, south-facing slopes of Volcán Tajumulco, alt. 1400-1700 m, *Standley 37414* (F); above Finca El Porvenir on Todos Santos Chiquitos, lower south-facing slopes of Volcán Tajumulco, alt. 1300-1500 m, *Steyermark 37212, 37240* (both F). SOLOLÁ: Volcán Atitlán, above Finca Mocá, 1000-1250 m, *Steyermark 47925* (F, MO).

Steyermark 33336, 37414, and Standley 86990 are somewhat intermediate between subsp. *flexile* and subsp. *muelleri* in stipe length and venation pattern.

It seems significant that the characteristics mentioned above for subsp. *muelleri* have never been observed on specimens of *A. flexile* collected south of northern Guatemala. Further, the species has never been collected above 1000 m in its southern range.

As noted by previous workers (Standley, 1944; Bunting, 1965), the name *A. mexicanum* Engler is invalidated by the earlier homonym *A. mexicanum* Liebmann. Macbride (1934) published a new name, *A. muelleri*, for Engler's taxon. Macbride's name has been overlooked since its publication, but must be considered the valid name for that taxon. As a result of this oversight, this taxon has also been known under the name *A. myosuroides* (HBK) Endl. Standley and Steyermark (1958) and Bunting (1965) called this form *A. myosuroides*. Matuda (1954) recognized two species from Mexico, *A. myosuroides* (*A. flexile* subsp. *flexile* of this paper) and *A. mexicanum* Engler (*A. flexile* subsp. *muelleri* of this paper).

TABLE 1

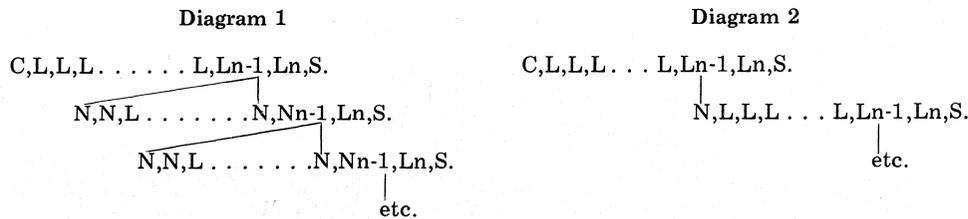


Table 1. **Diagram 1.** Engler's schematic representation of the usual sympodial growth in all species of *Anthurium* except those in *Anthurium* section *Polyphyllum* (1876). **Diagram 2.** Engler's schematic representation of the sympodial growth in *Anthurium* section *Polyphyllum* (1879). C = cotyledon, L = leaf, Ln-1 = penultimate leaf of each branchlet, Ln = last leaf of each branch, S = inflorescence, N = bicarinate prophyll, and Nn-1 = 1-ribbed cataphyll.

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