

m, *Knapp et al.* 8544 (holotype, MO 3483655; isotypes, B, US, USM).

Planta epiphytica; caulis ignotis; cataphyllum persistens in fibris pallidus; petiolus 34.5–42 cm longus, 6–7 mm diam., sulcatus; lamina late elliptica, 57–61 cm longa, 18–19.5 cm lata, basi attenuata; pedunculus 74–93 cm longus, 4–5 mm diam.; spathe lanceolata, viridis, 10–12 cm longa, 1–1.3 cm lata; spadix cremeus vel viridis, cylindroidius, 6–11 cm longus, ca. 4 mm diam.

Description based on dried material only. Epiphytic on rotten logs; stem unknown; cataphylls ca. 7 cm long, apparently persisting as weathered pale fibers. *Leaves* erect-spreading; petioles 34.5–42 cm long, 6–7 mm diam., sulcate with the margins apparently acute, apparently acutely 1-ribbed abaxially; geniculum ca. 1 cm long; sheath 4.5 cm long; blades subcoriaceous, broadly elliptic, acuminate at apex, long-attenuate at base, 57–61 cm long, 18–19.5 cm wide, broadest at or near the middle, the margins flat, both surfaces yellow to olive-green; midrib convexly raised above, prominently raised and apparently acutely angled toward the base below; primary lateral veins 12–16 per side, departing midrib at 50–80° angle, slightly arcuate to the collective vein, weakly raised above and below; interprimary veins much less to almost as conspicuous as primary lateral veins; reticulate veins weakly raised; collective vein arising from the base, equally as prominent as primary lateral veins, 10–16 mm from margin. *Inflorescences* erect; peduncle 74–93 cm long, 4–5 mm diam., 1.8–2.4× as long as petiole, green, terete; spathe spreading to reflexed, subcoriaceous, green, lanceolate, 10–12 cm long, 1–1.3 cm wide, broadest near the base, inserted at ca. 20° angle on peduncle, acuminate at apex (the acumen with apiculum 4 mm long, inrolled and recurled), prominently decurrent for 2–3 cm at base; spadix “creamy,” probably somewhat greenish (post anthesis), cylindroid, sessile, 6–11 cm long, 4 mm diam.; flowers square, ca. 4 mm in both directions; 5–6 flowers visible in principal spiral, 4–5 in alternate spiral; tepals with conspicuous pale raphide cells; lateral tepals 1–2 mm wide, the inner margins broadly rounded, the outer margins 2-sided; anthers 0.8–1 mm long, 1.4–1.8 mm wide, inclined over the pistil; thecae ovoid, slightly divaricate. *Infructescence* (immature) erect-spreading; spathe persisting, green; spadix 8 cm long, 1 cm diam.; berries green, ellipsoid.

Anthurium knappiae is endemic to Peru, known only from the type locality, at 400 to 500 m, probably in an area of premontane wet forest. The type specimen was collected in the Tarapoto region,

about 20 km north of Tarapoto. It is one of six or more *Pachyneurium* species from this region.

This species is distinguished by its broadly elliptic, long-petiolate leaves which dry green and have the collective vein arising from near the base, and by its long-pedunculate inflorescence with a greenish spadix.

This species is most closely related to *A. oxycarpum*, differing in its petiole being 2–3× longer, its attenuate leaf base (only rarely attenuate for *A. oxycarpum*), its much longer peduncle (74–93 cm long vs. 18–55 cm long for *A. oxycarpum*), and its pale, raphide-cell-covered, nonglaucous tepals (vs. conspicuously glaucous and apparently free of raphide cells in *A. oxycarpum*).

The new species is named in honor of Sandra Knapp, who made the type collection.

PERU. SAN MARTÍN: Cerro Isco, lower slopes, old trail from Yumbatos to San Antonio de Cumbasa, Lumas, S of Shapajilla, 400–500 m, 6°20'S, 76°24'W, *Knapp et al.* 8544 (B, MO, US, USM).

Anthurium krukovii Croat, sp. nov. TYPE: Brazil. Amazonas: Maraa, Rio Japurá, Lago Maraa, vic. of Maraa, 1°51'S, 65°36'W, *Plowman et al.* 12211 (holotype, INPA; isotype, MO 3117449).

Planta terrestris aut epiphytica; internodia brevis, 5–10 mm diam.; cataphyllum lanceolatum, persistens intactum; petiolus 19.5–38 cm longus, 3–7 mm diam., subterete, anguste sulcatus; lamina ovato-elliptica, 26–40 cm longa, 11–18 cm lata; geniculum remotus 4–11 cm; pedunculus 31–57.5 cm longus, 3–4 mm diam.; spathe oblongo-lanceolata, 8 cm longa, 7 mm lata; stipes 1.5–3.5 cm longus; spadix atrorubens ad brunneus, 12–15 cm longus, 4–5 mm diam.; baccae violaceae.

Description based on dried material only. Terrestrial or epiphytic; stem 5–10 mm diam.; roots dense, numerous, spreading, pubescent, relatively short, bluntly pointed, 1–5 mm diam.; cataphylls lanceolate, thin, 4–8 cm long, acute at apex, brown, persisting intact, eventually deciduous. *Leaves* with petioles 19.5–38 cm long, ca. 3–7 mm diam., subterete, narrowly sulcate with rounded margins adaxially, rounded abaxially; geniculum darker than petiole, 0.6–1.5 cm long; blades subcoriaceous, ovate-elliptic, long-acuminate at apex, acute to semi-rounded at base, then narrowing abruptly to the geniculum (making geniculum seem remote from base by 4–11 cm), 26–40 cm long, 11–18 cm wide, broadest below or near the middle, the margins concave toward the base, apparently shallowly undulate; surface semiglossy, green to yellowish green; midrib narrowly convex above, sharply acute below; primary lateral veins 7–10 per side, de-

parting midrib at 40–65° angle, ± straight, raised above and below, more sharply so below; tertiary veins weakly raised; reticulate veins obscure above, weakly raised below; collective vein arising from near the base to about the middle of the blade, equally as prominent as primary lateral veins, 5–15 mm from margin. *Inflorescences* with peduncle 31–57.5 cm long, ca. 3–4 mm diam., equaling or to 1.8× longer than petiole, light to olive-green, terete; spathe recurled, membranous, pale reddish green, oblong-lanceolate, to 8 cm long, ca. 0.7 cm wide, broadest near the base, narrowly acute at apex, acute and decurrent at base; stipe 1.5–3.5 cm long in front, (0)8–17 mm long in back; spadix dark red to brown, long-tapered, usually long-stipitate, 12–15 cm long, 4–5 mm diam. near base, ca. 2 mm diam. near apex; flowers ± square or rhombic when dried, 1.2–1.8 mm in both directions, the sides straight to smoothly sigmoid; 5–7 flowers visible in principal spiral, 8–9 in alternate spiral; lateral tepals 0.9–1.2 mm wide, the inner margins straight to broadly rounded, the outer margins 2-sided; pistils emergent, not raised; stigma ellipsoid, 0.5–0.7 mm long; anthers 0.2–0.3 mm long, 0.4–0.5 mm wide, inclined over pistil; thecae ovoid, slightly divaricate. *Infructescence* with spathe deciduous; spadix ca. 1 cm diam.; berries violet, (rehydrated) globose to oblong-ovoid, rounded at apex, 3.5–3.7 mm long, 2.6–3.5 mm diam.; pericarp somewhat thickened with moderately numerous pale raphide cells; seeds 1 or 2 per berry, brown, oblong-ovoid, somewhat flattened laterally, 2.5–2.8 mm long, 1.8–2 mm diam., 1.2–1.4 mm thick.

Anthurium krukovii is known from a few collections made in the central, northern and southwestern parts of Amazonas, Brazil, below 150 m, probably in a tropical moist forest life zone.

The species is characterized mainly by the shape of its leaf blades, which are rounded and abruptly attenuate at the base and narrowed even further to the geniculum in a manner that makes the latter seem remote from the base of the blade by 4–11 cm.

Anthurium krukovii is mostly closely allied to *A. atropurpureum* var. *arenicola*, which differs in having more coriaceous and usually narrower leaf blades which are long-attenuate (with more or less parallel margins) toward the base, and in having mostly shorter petioles. The same general differences apply to the typical variety of *A. atropurpureum*, which is smaller in overall size.

The occurrence of clear pustules on the under-surface of the dried leaf blades in the present

species is of interest. The same feature occurs, albeit rarely, in *A. atropurpureum*, the presumed closest relative of *A. krukovii*. The two collections of *A. krukovii* which show this feature are *Byron et al. 621* and *Duarte 6958*.

The new name *Anthurium krukovii* honors Boris Alexander Krukoff, one of the first major American collectors to explore Amazonian Brazil, and whose philanthropy funds many important botanical functions to this day. In addition, Krukoff was the first known collector of the present species.

BRAZIL. AMAZONAS: Barcelos, *Duarte 6958* (RB); Rio Embira (tributary of Rio Tarauaca), 7°30'S, 70°15'W, *Krukoff 4927* (NY); Mpo. Maraa, Rio Japurá, vic. Maraa, Lago Maraa, *Plowman et al. 12211* (MO, INPA); Sitio Fortaleza, 7 km NW of Maraa, *Plowman et al. 12278* (INPA, NY); mouth of Igarape Maraa and Lago Maraa, *Plowman et al. 12380* (NY, INPA); Mpo. Tefe, Lago Tefe, Vila Nogueira, Porto Camanaus, *Byron et al. 621* (MO, INPA); Lago Tefe, NW shore, *Plowman et al. 12442* (MO, INPA).

Anthurium lanjouwii Jonk. & Jonk., *Acta Bot. Neerl.* 15: 133. 1966. TYPE: Surinam. Emma Mountains, S slope, 850 m, *Daniels & Jonker 1101* (holotype, U). Figure 348.

Terrestrial; stem to 15 cm long; internodes short, 1–1.5 cm diam.; roots moderately dense, spreading, to 25 cm long, the younger roots light brown, villous; cataphylls narrowly triangular, 3.4–5 cm long, persisting semi-intact toward apex, as fibers toward base. *Leaves* with petioles 7–23 cm long, drying 3–7 mm diam., subterete, sulcate adaxially, drying with sharp margins, rounded abaxially; geniculum sharply sulcate, 0.5–1 cm long; blades subcoriaceous, elliptic to ovate-elliptic, acuminate and apiculate at apex, obtuse to rounded or sometimes cuneate at base, 23–36 cm long, 12–19 cm wide, drying yellow-green to yellow-brown; midrib prominently raised on both surfaces, drying angular and paler than surface below; primary lateral veins 6–9 per side, departing midrib at 40–60° angle, moderately straight to the margin, then markedly ascending and merging with the margin or loop-connecting with the next higher vein, raised on both surfaces; tertiary veins drying prominulous below; collective vein lacking or arising below the middle of the blade. *Inflorescences* erect, shorter than leaves; peduncle 17–39 cm long; spathe promptly withering and soon deciduous, green tinged with purple, lanceolate, 2.5–4.5 cm long, 0.7–0.8 cm wide, inserted at ca. 45° angle on peduncle, mucronate at apex, acute at base; spadix purplish brown, weakly tapered, short-stipitate, 5–14 cm long, drying 4–6 mm diam.; flowers rhombic, 2.5–