Anthurium anomalum (Araceae), A New Species in sect. *Urospadix*, subsect. *Obscureviridia* from Cultivation

DONALD R. HODEL

I am unsure how he got my phone number or even knew of me, but in 2015 the larger-than-life, effervescent, and irrepressible raconteur, the late Douglas Bruce Himmelfarb (1952–2017), who was embroiled in a perpetual struggle to authenticate a Mark Rothko painting that he valued at US $40 million, called and urged me, with great haste, to come to the house where he lived with two nonagenarian sisters, Ruth and Ella Hirshfield, in the exclusive Bel Aire neighborhood of Los Angeles, to pick up some plants of which they had to dispose because they were moving.

Thus, I made the long trip in rush-hour traffic across town to the Westside of Los Angeles where Douglas, even though we had never met, cheerfully if not gleefully greeted me at the door. Because we both had a common thread, Hawaii, and a love of tropical ornamental plants like palms, cycads, aroids, and "rubes" (handsome and striking plants in the Rubiaceae or coffee and gardenia family), we hit it off right away. Instead of looking for the plants he wanted me to take, he first spent over an hour regaling me with tales, always punctuated with his infectious humor, of his former estate Kamaaina on Old Pali Highway in Honolulu and how he wanted to sell his Rothko and use the proceeds to return to his estate and start a world-class botanical center focused on the plants he loved, especially his beloved rubes.

We finally made it out to the garden and Douglas just started pointing at plants, nearly ordering me to take them. While I was able to take only a few of the plants, one that stood out to me was an *Anthurium* (one of his beloved aroids) with a short, compact stem, short petiole, and erect, long, moderately wide, flat, thick, fleshy, obscurely veined leaf blades. Despite being sterile, its distinctive leaves alone were striking and sufficient to set it apart; I had never seen an *Anthurium* like it.

I held this *Anthurium* in a container for several years until it was about 75 cm tall and wide, then planted it in the ground in 2018 in the *Chamaedorea* palm "rain forest" section of my garden. Growing slowly but steadily, it formed that handsome, striking, rosette of erect to ascending leaves (**Fig. 1**) but did not produce inflorescences until 2020; nonetheless, the latter were worth the wait. Thick, robust, erect spadices were set on short, dark purple peduncles, each subtended by a leathery, dark purple, nearly black spathe. They set fruits easily and unaided, and by the time

1. *Anthurium anomalum* is a stunning, spectacular plant with its rosette of erect to ascending, coriaceous, obscurely veined leaf blades held on short petioles on a short stem, making them appear as if they are arising directly from the ground. Note the fruiting spadices lying on the ground. All photographs of living material are of the type plant (*Hodel 4013*) at Chamaedorea House, Lakewood, California, U. S. A.

2. *Anthurium anomalum*, Holotype (sheet 1 of 2), *Hodel 4013* (LASCA). © 2024 by Marlyn S. Woo and Joanne Wilborn, LASCA.

3. *Anthurium anomalum*, Holotype (sheet 2 of 2), *Hodel 4013* (LASCA). © 2024 by Marlyn S. Woo and Joanne Wilborn, LASCA.

4. *Anthurium anomalum* has a short, compact stem and short petioles holding thick, coriaceous leaf blades. The latter are broadest proximal of the middle.

5. Stems of *Anthurium anomalum* are short, thick and with short internodes concealed by cataphylls and spongy, white, mostly downward-growing roots.

the fruits had matured, were soft-ripe, and falling off the spadix, the entire inflorescence was lying flat on the ground.

After some investigation and correspondence with several aroid researchers, I concluded that this plant was a new, undescribed species, likely from the Atlantic forest of southeastern Brazil. Here, I provide a comprehensive, illustrated account of this handsome, distinctive, unusual, and anomalous species and its cultivation.

Taxonomy and Description

Anthurium anomalum Hodel sp. nov. Figs. 1–35. TYPE: CULTIVATED. U. S. A. California. Los Angeles County. Lakewood: garden of Marianne and Donald Hodel, 1 May 2022, *Hodel 4013* (Holotype LASCA [comprised of two, as yet unmounted sheets without barcodes but numbered sequentially “1 of 2” and “2 of 2” and each collected from the same plant on the same date and bearing a single original label in common]; Isotype MO). (**Figs. 2–3**).

Anthurium anomalum is in section *Urospadix*, which has short stems with short internodes; leaf blades much longer than broad with numerous, close-set primary lateral veins scarcely more prominent than the interprimary veins, and supervolute vernation; and subsection *Obscureviridia*, which has chartaceous to coriaceous, concolorous leaf blades with scarcely visible lateral veins. It is most similar to *A. lacerdae* but differs primarily in its leaf blade with fewer primary veins (24 vs. 30–45), more flowers in the spirals of the spadix (32–37 vs. 6–19), significantly larger fruits (17–18 × 8–9 mm vs. 8–11 × 4–6), and a fruiting spadix twice the diameter (5 vs. 2.3 cm).

Etymology: The specific epithet is derived from the Latin *anomala*, meaning deviating from what is standard, normal, or expected, and refers to its unusually close similarity to *Anthurium lacerdae* yet still different in several, significant characters.

Habit: solitary or occasionally clustered, non-climbing, erect, epiphytic or sometimes epilithic(?) or terrestrial(?), perennial aroid, forming dome-shape clumps up to 1.3 × 1.25 m (**Figs. 1, 4**).

Stems (caudex): to 15 cm tall, 6–8 cm diam. with leaf bases and roots, erect, occasionally branched, leaf bases, roots, and cataphylls obscuring nodes and noticeably short internodes (**Fig. 5**).

Roots: numerous, 6 mm diam., descending, spongy, whitish (**Fig. 5**).

Cataphylls: to 15 cm long, lanceolate, acute, coriaceous, midvein raised and knife-like abaxially, other longitudinal veins faint, initially green (**Fig. 6**) but aging and drying brown and fibrous, then splitting at base to become reticulate or net-like, persistent **(Fig. 7**).

Leaves: 9–12 per stem, erect to mostly ascending, eventually spreading slightly, to 1.2 m long, simple, vernation supervolute (**Fig. 8**); **base** to 8 cm long, long-open, briefly tubular only near the base, light green with yellow-green margins (**Fig. 9**); **petiole** to 25 cm long, 1.8 × 1.2 cm diam., generally rounded but oval-shaped in transverse section (**Fig. 10**) with the long axis vertical, smooth, green with densely placed, small, yellow-green spots (**Fig. 11)**; **geniculum** to 1.5 × 2.4 cm, conspicuous, swollen, light green (**Fig. 11**); **blade** to 86 × 26.5 cm, ovate- to elliptic-lanceolate, unlobed, widest just proximal of middle (**Figs. 12–13**), +/- equally tapered at both ends, apex short-acuminate with a slightly recurved, spine-tip 5 mm long (**Fig. 14**), base acute-acuminate with extremely narrow, wing-like margins continuing to geniculum (**Fig. 11**), flat, thick, coriaceous, very slightly glaucous gray, +/- matte, weakly glossy dark green and sparsely white-spotted adaxially (**Fig. 15**), +/- concolorous but slightly paler abaxially, epunctate but distinctly very densely and minutely white-spotted abaxially (**Fig. 16**), these 0.06–0.1 mm diam., intermingled with very sparsely distributed, larger, green, slight depressions abaxially, these 1–

6. Cataphylls of *Anthurium anomalum* are coriaceous and with a raised midvein or costa and initially green. Note the densely yellow-green-spotted petiole.

7. Cataphylls of *Anthurium anomalum* become brown, fibrous, and persistent with age, then split at the base to become reticulate or net-like. Note the purple peduncle and yellow-green-spotted petiole.

8. Leaf vernation or unfurling is supervolute in *Anthurium anomalum*, where one blade margin is wrapped around the other like an ice cream cone.

9. The leaf base of *Anthurium anomalum* is short, long-open, and yellow-green to yellowish with whitish margins. Note it is also clasping the base of a peduncle here.

10. Petioles of *Anthurium anomalum* are generally rounded but oval-shaped in transverse section from lateral compression.

11. Petioles of *Anthurium anomalum* are green and densely yellow-green-spotted. Note the swollen geniculum (center) and the proximal margins of the leaf blade extending to the geniculum (left).

12. Leaf blades of *Anthurium anomalum* are elliptic-lanceolate, simple, unlobed, obscurely veined, more or less equally tapered at both ends, widest proximal of middle (adaxial surface), matte, and weakly glossy green.

13. The abaxial leaf blade surface of *Anthurium anomalum* is slightly paler than the adaxial surface, weakly glaucous, and matte green.

14. Lea blades of *Anthurium anomalum* are short-acuminate apically with a slightly recurved, spine-tip.

15. The adaxial leaf blade surface of *Anthurium anomalum* is weakly glossy dark green and sparsely and weakly white-spotted. Note the obscure veins.

16. The abaxial leaf blade surface of *Anthurium anomalum* is densely and minutely white-spotted, a character much more conspicuous on living material.

17. The leaf blade midrib of *Anthurium anomalum* is scarcely raised adaxially but raised and prominent abaxially and densely yellow-green-spotted on both surfaces.

18. Inflorescences of *Anthurium anomalum* are two to three per stem, robust, and erect in flower during the first year. Note the dark purple adaxial surface of the spathe.

19. Inflorescences of *Anthurium anomalum* lie flat on the ground or nearly so in fruit during the second year. Note the dark purple, curved peduncle.

20. The peduncle of *Anthurium anomalum* is short, smooth, erect, and glossy dark purple, nearly black in flower.

1.5 mm diam. and slightly raised adaxially, midrib scarcely raised adaxially, broadly rounded to flat, 1 cm wide at base and tapering to apex, raised to 1.5 cm high and 1.3 cm wide at base abaxially, with densely placed small, yellow-green spots abaxially and adaxially (**Fig. 17**), up to 24 distally curving primary veins on each side of midrib, 2–3 secondary veins between each pair of primaries proximally, 6–7 secondary veins between each pair of primaries distally, all veins ending in collective marginal veins, this near margin proximally to 1.5 cm from margin distally, all veins +/- inconspicuous.

Inflorescences: 2–3 per stem, robust, erect in flower during first year (**Fig. 18**), reclining and lying flat on the ground or nearly so in fruit during the second year (**Fig. 19**), slightly longer than petiole, to 41 cm long; **peduncle** to 17 cm long, 1.8 × 1.4 cm diam. at base, rounded, laterally compressed and oval in transverse section, 2.3 × 1.9 cm at apex, smooth, erect and glossy dark purple nearly black in flower (**Fig. 20**), curved downward and dark purple to greenish brown in young fruit (**Fig. 19**) becoming greenish brown in mature fruit; **spathe** 21 × 6–7 cm, shorter than to ca. equaling spadix in flower (**Fig. 21**), considerably shorter than spadix in fruit (**Fig. 22–23**), oblong-lanceolate, mostly ascending, sometimes recurved distally, apex acuminate, nearly beak-like, base straight and there attached at an obtuse to shallow angle and nearly completely encircling peduncle except for a 1 cm gap (**Fig. 24**), coriaceous, persistent, abaxially green with a barely raised and broadly rounded, purplish costa and purple streaks and spots (**Figs. 25–26**), this later knife-like, (**Fig. 28**) adaxially with numerous, close-set, rounded, mostly inconspicuous veins adaxially, dark purple nearly black adaxially (**Figs. 21–22, 26**); **spadix** at anthesis erect (**Figs. 18, 21, 27**), to 19 cm long, equaling to exceeding spathe in flower, 2.5 cm diam. at base, tapering to 1.5 cm diam at apex, abruptly rounded-truncate at apex, +/- robust, tan to brownish purple in flower, post anthesis enlarging to 27.5 cm long, much longer than spathe, 3 cm diam. at base, tapering to 2 cm diam., spreading to reclining (**Figs. 19, 23, 26**), in mature, soft-ripe fruit, robust, stipitate 3–4 mm, lying or reclining and prostrate on ground, then to 5 cm diam. with fruit being shed (**Fig. 28**).

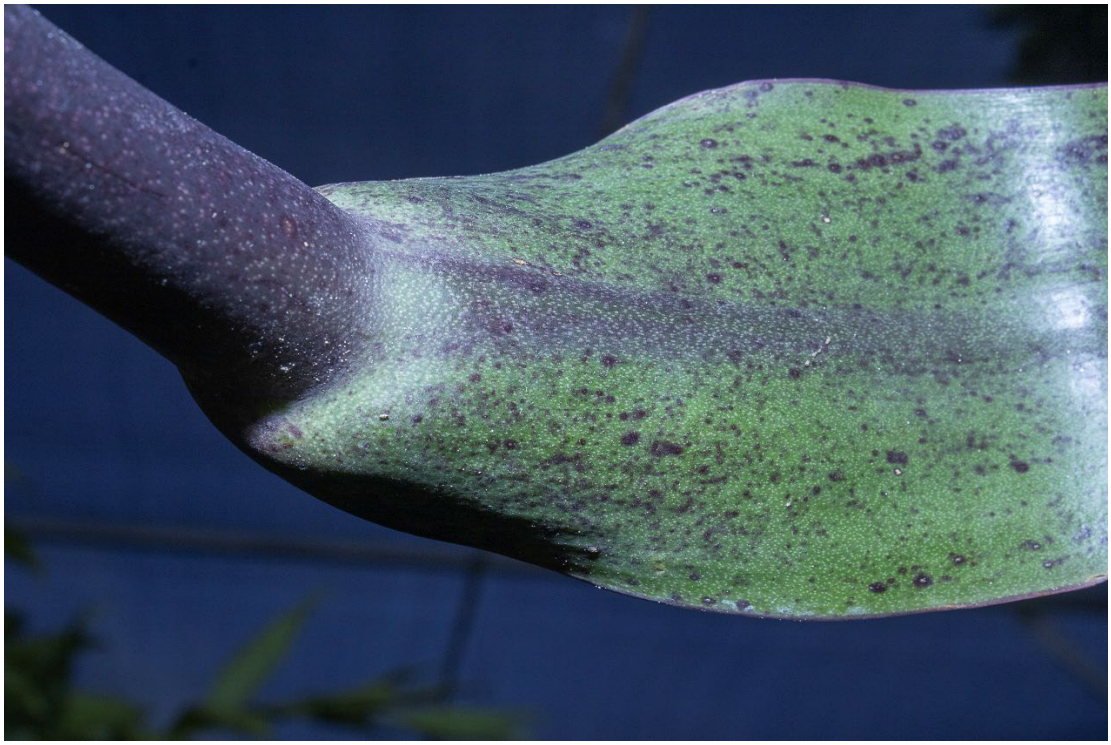
Flowers: densely arranged in 16–18 left and right spirals, each with 32–37 flowers in a 360° spiral or revolution to the common axis, 4.5 mm high, 3 × 3 mm at apex, 2.8 × 2.8 mm at base, cube-like, 4-sided from dense packing and mutual pressure, sides straight (**Fig. 29**), faintly fragrant to aromatic; tepals 4 × 3 mm, shorter than anthers and stigma, broadly ovate-oblong, broadly rounded and truncate apically, thick, fleshy, greenish yellow in proximal 3.5 mm, brownish purple in distal 0.5 mm (**Fig. 29**); stamens 4.5 mm high; filaments connate in pairs of 2 and encircling the pistil, 4 × 1.5 mm, ca. equaling tepals, broadly ovate to awl-shaped, flattened, clear-colored, adnate to pistil in proximal 1–1.5 mm; anthers 0.6 × 0.4–0.5 mm, paired in 2s, barely exceeding tepals, equaling and surrounding stigma, bilobed, white (**Fig. 29**), pollen white to pale yellow; ovary 4 × 2.5–2.8 mm, broadly oblong-ovoid, clear colored proximally, greenish distally (**Fig. 30**); style short or lacking; stigma 0.5 × 0.5 mm, exserted above tepals and equaling anthers, truncate apically, dark colored.

21. The spathe of *Anthurium anomalum* is shorter than to nearly equaling the spadix in flower. Note the dark purple adaxial surface and erect spadix.

22. The spathe of *Anthurium anomalum* is shorter than to nearly equaling the spadix in flower and is dark purple adaxially.

23. In young fruit, spathes of *Anthurium anomalum* are considerably shorter than the spadix. Note the entire inflorescence lying flat on the ground, the greenish brown peduncle, and the green abaxial surface of the spathe.

24. The spathe of *Anthurium anomalum* a base with an obtuse to shallow angle and nearly completely encircling peduncle except for a 1 cm gap.

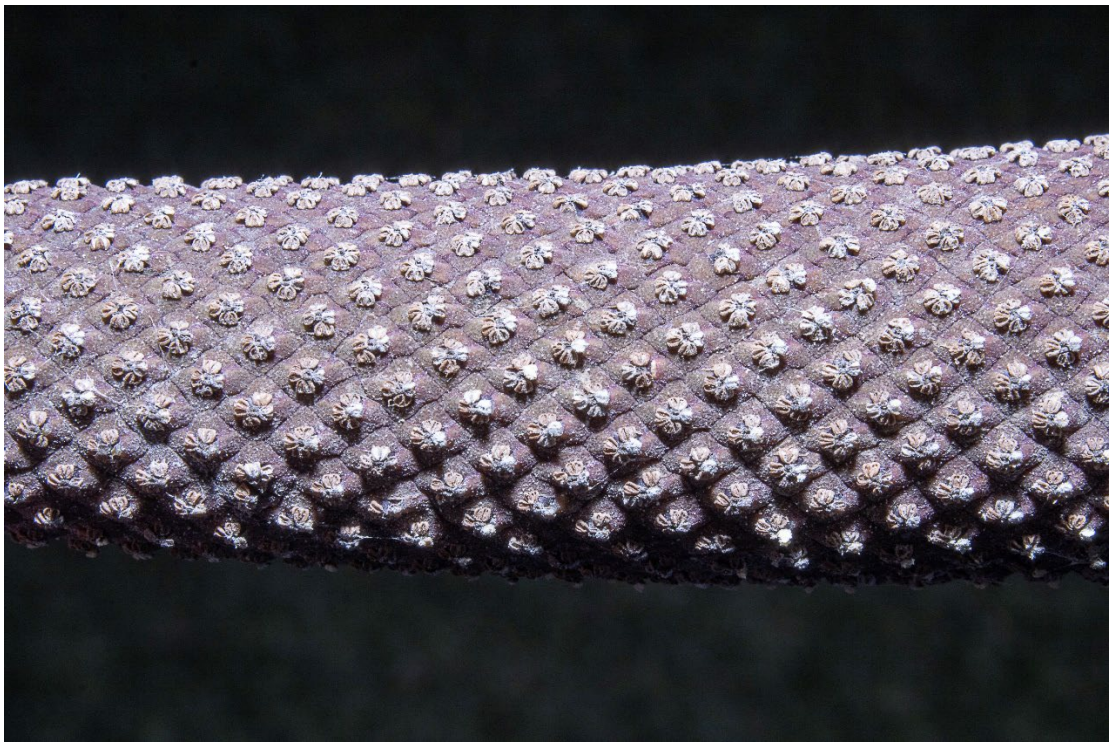


25. The spathe of *Anthurium anomalum* is coriaceous, persistent, and abaxially with a barely raised and broadly rounded, purplish costa, and purplish streaks and spots.

26. The adaxial surface of the spathe of *Anthurium anomalum* is purple to nearly black while the abaxial surface is initially green.

27. The spadix of *Anthurium anomalum* is erect at anthesis.

28. In mature, soft-ripe fruit, spadices of *Anthurium anomalum* are lying or reclining on ground and shedding fruit. Note the well defined and knife-like costa on the abaxial surface of the spathe.



29. Flowers of *Anthurium anomalum* are cube-like and 4-sided from dense packing and mutual pressure, and have tepals brownish purple distally with exserted anthers.

30. The tepal bases, filaments, and ovary of *Anthurium anomalum* are clear-colored to whitish while the latter is greenish distally and the stigma is dark colored.

Fruits: 17–18 × 8–9 mm, elliptic-obovoid, tightly packed and angled from mutual pressure, clear colored in proximal half gradually changing to dark green at apex (**Figs. 31–32**), 1–2-seeded; **seeds** 8–9 × 4–5 mm fresh from fruit with mucilaginous covering, whitish, 5 × 3 mm when completely cleaned, light brown, oblong-obovoid, moderately flattened, base truncate-rounded, apex rounded (**Fig. 32**); seedlings with cordate leaves (**Figs. 33–34**).

Distribution and Ecology: *Anthurium anomalum* is undocumented from the wild, but as Ferneda Rocha et al. (2014) pointed out for the similar *A. lacerdae* and other related species in subsection *Obscureviridia*, it might occur in dense, lowland and submontane, evergreen, wet Atlantic forest across the states of Espírito Santo, Paraná, Rio de Janeiro, São Paulo, and Santa Catarina in southeastern Brazil. Similarly, it probably occurs as an epiphyte and lithophyte and also perhaps terrestrially.

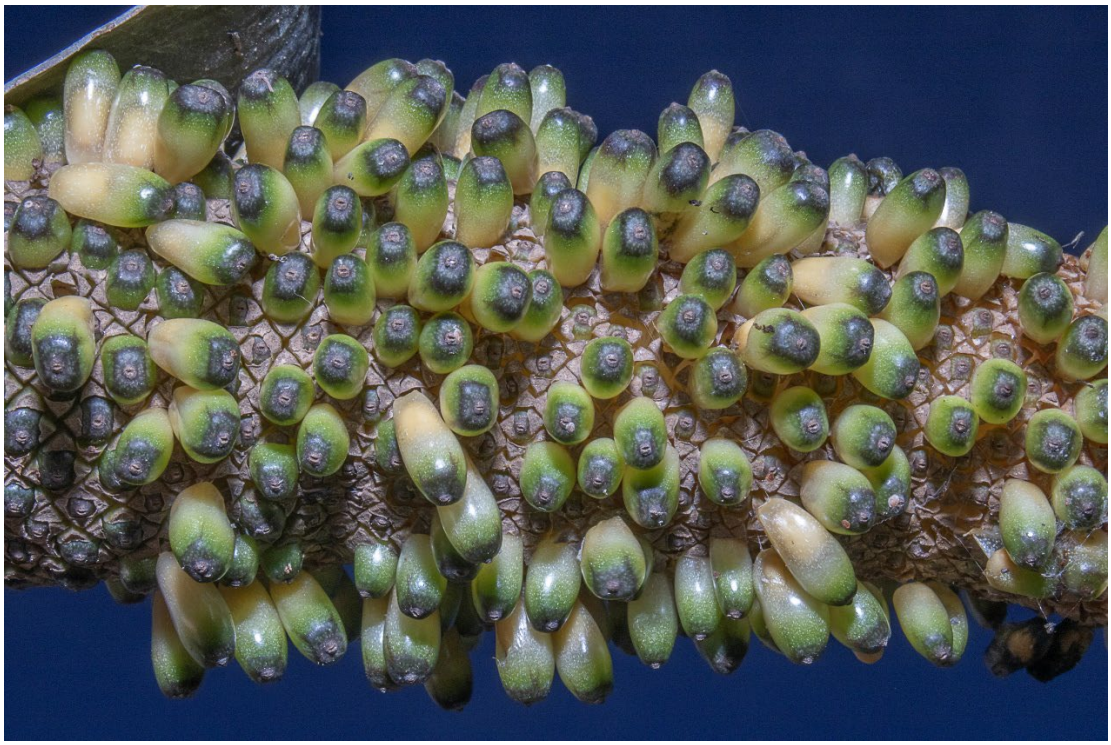
Conservation Status: The conservation status of *Anthurium anomalum* is difficult to determine because it is known only from cultivation and its status in the wild in unknown; thus, according to IUCN criteria (IUCN 2024), its status should be DD (data deficient). Nonetheless, Vas et al. (2022) noted that the Atlantic forest of southeastern Brazil, where *A. anomalum* likely occurs, is one of the country's most threatened and highly fragmented ecosystems because of logging, invasive species, fire, and deforestation for agriculture and other development. Coelho and Valadares (2019) stated that 92.5% of the original Atlantic forest has been lost. Thus, future work might show that *A. anomalum* should be listed in a threatened status category, at least on a local basis.

Discussion

The description is based nearly entirely on fresh, living material. Other than color, the only significant difference between fresh and dried material is primarily in the dimensions of the various organs, especially the spadix, which seem to be reduced about 20 to 40% in dried versus in fresh material. Also, the leaf blade veins are more conspicuous in dried material.

Unfortunately, Himmelfarb provided no information on the provenance of this plant; thus, I am left to surmise its natural range and habitat based on that of related, similar species and discussions with aroid researchers.

Anthurium anomalum is an unusual and curious plant. The mostly upright leaves with thick, coriaceous, obscurely veined, unlobed blades are set on short petioles held on a short, thick, erect stem. The short inflorescences with a thick, dark purple peduncle, coriaceous spathe, green abaxially and dark purple nearly black adaxially, and robust spadix, erect in flower and reclining flat on the ground in mature fruit, are distinctive.



31. Fruits of *Anthurium anomalum* are tightly packed, angled from mutual pressure, and clear colored in proximal half gradually changing to dark green at the apex.

32. Fruits of *Anthurium anomalum* are large and dark green at the apex while seeds are light brown.

Anthurium anomalum is in section *Urospadix*, which has short stems with short internodes; leaf blades much longer than broad with numerous, close-set primary lateral veins scarcely more prominent than the interprimary veins; and supervolute vernation (Croat and Scheffer 1983). It is in subsection *Obscureviridia*, which has chartaceous to coriaceous, concolorous leaf blades with scarcely visible lateral veins (Engler 1898, Valadares and Sakuragui 2014). At least 23 species in subsection *Obscureviridia* occur in the Atlantic forest in southeastern Brazil (Valadares and Sakuragui 2014).

Morphological characters primarily delineated the previously recognized 20 sections of *Anthurium* (Croat and Scheffer 1983). However, Carlsen and Croat (2019) found that in a comparison of a molecular phylogeny of 13 sectional groupings of *Anthurium* (Carlsen and Croat 2013) and morphology-based sectional groupings, four were monophyletic, eight were non-monophyletic, and one, *Urospadix*, was inconclusive. These results reflect the fact that morphology-based sectional groupings relied heavily on homoplasious leaf characters. Indeed, of the 14 leaf characters evaluated, only two, leaf blade vernation and punctation, supported monophyletic groupings in *Anthurium*.

Anthurium anomalum bears an uncanny resemblance to *A. lacerdae*, the species with which I had originally identified my plant. Both are in section *Urospadix* and subsection *Obscureviridia*. However, differences between the two seem significant. When comparing data in Coelho et al. (2020), Ferneda Rocha et al. (2014), and Reitz (1957) for *A. lacerdae*, the leaf blade of *A. anomalum* has fewer primary veins (24 vs. 30–45), more flowers in the spirals of the spadix (32–37 vs. 6–19), significantly larger fruits (17–18 × 8–9 mm vs. 8–11 × 4–6), and a fruiting spadix twice the diameter (5 vs. 2.3 cm). Also, none of these sources noted living material of *A. lacerdae* having the densely and small to minutely, yellow-white-spotted petiole and leaf blade midrib and white-spotted leaf blade surfaces, especially the abaxial surface, which *A. anomalum* has. However, I am reluctant to describe this feature as a reliable, distinguishing character because it is much less conspicuous in dried material and perhaps was simply overlooked, if it was present at all, on *A. lacerdae*, although Reitz (1957) specified that he saw and based his description on living material and the lectotype is a photograph of a living plant in Reitz's article.

The densely and minutely white-spotted abaxial surface of the leaf blade of *Anthurium anomalum*, giving the impression that one is observing a multitude of stars on a cold, clear, dark winter's night far from urban light pollution, occurs on other species of *Anthurium*. They appear to be granular in nature, might be silica crystals formed near the leaf surface, and often can be quite diagnostic in the Araceae, especially in some sections of *Anthurium*, such as section *Calomystrium* (T. B. Croat, pers. comm., 9 June 2024). As noted earlier, they are much more conspicuous on fresh, living material than on dried material although they are still detectable on the latter.

33. Seedlings of *Anthurium anomalum* have cordate leaves. Note the attached brown seeds.

34. Seedlings of *Anthurium anomalum* have cordate leaves. These seedlings sprouted after they were shed from the spadix where it was once lying next to the adult plant.

Aroid researchers (Coelho, pers. comm., 7 June 2024; Croat, pers. comm., 9 June 2024) do not consider these densely placed, minute white spots on the leaf blade surfaces to be punctations, at least as they use this term for *Anthurium* spp. Nonetheless, these dots seem to fit the definition of punctations (punctate) in botanical glossaries: Benson (1959), "dotted with depressed glands or colored spots"; Harrington and Durrell (1957), "dotted with depressions, or with translucent internal glands or colored dots"; and Wikipedia Glossary of Botanical Terms (2024), "marked with an indefinite number of dots, or with similarly small items such as translucent glands or tiny hollows." As I noted earlier, not only does the literature (Coelho et al. 2020, Ferneda Rocha et al. 2014, Reitz 1957) not mention these white dots on *Anthurium lacerdae* (the species to which I compared *A. anomalum*), they state that the leaf blades are epunctate and without glandular punctations. Thus, I suspect that aroid researchers interpret a punctation as a prick, hollow, depression, or some other object with an elevation change, not simply a white dot. Nonetheless, whatever the white dots are called is a moot point here because the aroid researchers do not consider the white dots to be punctations and, for that reason, neither do I when developing a set of characters to distinguish these species.

Another species that I briefly considered for my plant is *Anthurium coriaceum*, also from the Atlantic forest in southeastern Brazil; however, while the two share the thick, coriaceous leaf blades with obscure veins and a matte to weakly glossy surface and an inflorescence considerably shorter than the leaves, *A. coriaceum* differs in its undulate leaf blade margins, erect infructescence, green spathe, smaller inflorescence and fruit, and its involute leaf vernation, the latter of which clearly shows its affinity to section *Pachyneurium* (Croat 1991). Carlsen and Croat (2019) noted that leaf vernation, along with leaf punctation, was a valuable and strong taxonomic character.

Cultivation

While its typically long, moderately wide, coriaceous, simple, obscurely veined, matte to weakly glossy, dark green leaf blades, held erect to spreading on short petioles and stems, forming a uniquely handsome rosette seemingly to arise directly from the ground, are distinctive, the short, robust, heavy inflorescences with dark purple, nearly black spathes, erect in flower and lying prostrate on the ground when heavily laden with mature fruits, are spectacular and outstanding, making *Anthurium anomalum* an especially curious but appealing horticultural subject (**Fig. 35**).

Anthurium anomalum has performed superbly in the *Chamaedorea* research collection near Los Angeles, which is in a Mediterranean-type climate with long, warm, rainless summers and short, mild, sometimes moist winters, averaging about 300 mm of rain annually although global warming has led to generally reduced rainfall, increased temperatures, and stubborn aridification. By 2024, after about six years in the ground, the plant has grown slowly but steadily

35. *Anthurium anomalum* is a striking and spectacular if not curious horticultural subject. Note the two inflorescences lying on the ground.

to form a handsome, sparsely clustering, clump of erect to spreading leaves about 1.25 m tall and wide.

Anthurium anomalum is likely an epiphyte or lithophyte, but is often the case in the dry and arid environment of southern California where I live and garden, such plants, especially aroids, are best planted in the ground for optimal performance. Thus, in 2018, during a garden remodel, I positioned the plant of *Anthurium anomalum* in the ground among several *Chamaedorea* spp. and ferns *i*n the *Chamaedorea* research collection under a 70% shade cloth structure. It receives ample irrigation once a week in the summer and once every three to four weeks in the winter if no rain occurs. Typical summer daytime temperatures range from 26 to 32 C while nighttime temperatures range from 16 to 21 C. Typical winter daytime temperatures range from 15 to 20 C while nighttime temperatures range from 5 to 10 C. Over the nearly 10 years the plant has been in the *Chamaedorea* research collection, it has tolerated a high temperature of 45.5 C in July 2018 and again in July 2019 and numerous, near-freezing nights every winter without any obvious damage. The last two winters of 2022–2023 and 2023–2024 were unusually moist and cool, and

although freezing temperatures did not occur, numerous nights from November through March had temperatures from 2 to 5 C while daytime temperatures frequently did not exceed 15 C, which might be responsible for the slight marginal chlorosis that was evident in the spring of 2024.

The thick, leathery leaf blades suggest that *Anthurium anomalum* is probably somewhat drought and arid tolerant. Indeed, it has tolerated many days with relative humidity of 5 to 10% in the *Chamaedorea* research collection and, that it can go weeks, especially in the winter, with no water supports the supposition that it is somewhat drought tolerant for short periods.

Anthurium anomalum is easily propagated by fresh seeds, which germinate readily in a porous, moist medium at a temperature of 24 to 27 C; however, the seeds from the shed fruits lying on the ground germinate readily in the mulch directly under the plant, making a carpet of seedlings, which suggests that lower temperatures are sufficient for germination (**Fig. 34**). Propagation by division of the stems is possible but they are naturally so sparsely clustered that this method would offer few opportunities and be a lengthy process. Making tip cuttings and/or cutting up the stem into numerous sections, each of which could be rooted and then form shoots, theoretically could be another way to propagate *A. anomalum*, but the short stems would offer little propagative material.

Other than providing an appropriate environment, including light, temperature, and moisture, little care is necessary for *Anthurium anomalum* to develop into a fine and handsome specimen. Occasional applications of an organic or time-release inorganic fertilizer and maintaining 2 to 5 cm of good quality mulch would be beneficial. Regularly removal of dead or yellowing leaves and inflorescences will achieve a neat and tidy appearance, making a plant that is sure to garner attention in the garden.

Acknowledgements

I sincerely thank James E. Henrich of the Los Angeles County Arboretum and Botanic Garden in Arcadia, California who helped with preparing and drying the type specimens of *Anthurium anomalum*; Marlyn S. Woo and Joanne Wilborn, volunteers at the Los Angeles County Arboretum and Botanic Garden in Arcadia, who took the excellent photographs of the holotype at LASCA; Melanie Thorpe of the Huntington Library, Art Museum, and Botanical Gardens in San Marino, California for help with tracking down several publications; Marcus A. Nadruz Coelho of the Instituto de Pesquisas, Jardim Botânico, Rio de Janeiro, Brazil for discussions of *Anthurium lacerdae* and related species and the nature of leaf punctations and for sharing some hard-to-find literature; and Michael H. Grayum and Thomas B. Croat of the Missouri Botanical Garden for information on nomenclatural matters and the nature of leaf punctations. Croat also reviewed the manuscript.

Literature Cited

Benson, L. 1959. Plant Classification. D. C. Heath and Company, Lexington, Massachusetts, U. S. A.

Carlsen, M. M. and T. B. Croat. 2013. A molecular phylogeny of the species-rich neotropical genus *Anthurium* (Araceae) based on combined chloroplast and nuclear DNA. Systematic Botany 38(3): 576–588. doi: *10.1600/036364413X670287*

Carlsen, M. M. and T. B. Croat. 2019. An analysis of the sectional classification of *Anthurium* (Araceae): comparing infrageneric groupings and their diagnostic morphology with a molecular phylogeny of the genus. Annals Missouri botanical Garden 104: 69–82. *doi.10.3417/2018215*

Coelho, M. A. N., Temponi, L. G., Camelo, M. C., Mayo, S. J., Pimenta, K. M., Pontes, T. A., and I. M. Andrade. 2020. *Anthurium* in Flora do Brasil 2020. Jardim Botânico do Rio de Janeiro. *https://floradobrasil2020.jbrj.gov.br/FB33815*

Coelho, M. A. N. and R. T. Valadares. 2019. Three new species of *Anthurium* (Araceae) from the Atlantic forest of Rio de Janeiro, Minas Gerais, and Espírito Santo, Brazil. Novon 27(1): 22–32.

Croat, T. B. 1991. A revision of *Anthurium* section *Pachyneurium* (Araceae). Annals Missouri Botanical Garden 78: 539–855.

Croat, T. B. and R. D. Scheffer. 1983. The sectional groupings of *Anthurium* (Araceae). Aroideana 6(3): 85–123. Available on-line: *https://www.aroid.org/gallery/croat/0060308.pdf* (Updated: *https://www.aroid.org/genera/anthurium/anthsections.php*).

Engler, A. 1898. Revision of the genus *Anthurium* Schott. Botanishe Jahrücher fur Systematik 25: 352–476.

Ferneda Rocha, L. C., E. C. Smidt, M. A. N. Coelho, and L. G. Temponi. 2014. O gênero *Anthurium* (Araceae) no estado de Paraná—Brasil. Rodriguésa 65(4): 917–937. doi: *10.1590/2175-7860201465407*

Harrington, H. D. and L. W. Durrell. 1957. How To Identify Plants. The Swallow Press, Chicago.

IUCN. 2024. IUCN Red List. *IUCN Red List of Threatened Species* Accessed: 1 June 2024.

Reitz, R. 1957. Araceas catarinenses. Sellowia 8: 20–70.

Valadares, R. T. and C. M. Sakuragui. 2014. A new species of *Anthurium* (Araceae) sect. *Urospadix* subsect. *Obscureviridia* from Espírito Santo, eastern Brazil. Systematic Botany 39: 31–35.

Vas, D. R., M. Dobner, Jr., M. C. Scipiani, M. F. Nicoletti, and J. E. Arce. 2022. Old growth and secondary Araucaria forest characterization. Trees, Forests and People 9: (September) 100306. *https://doi.org/10.1016/j.tfp.2022.100306*

Wikipedia. 2024. Glossary of Botanical Terms. *Glossary of botanical terms - Wikipedia* Accessed: 16 June 2024.

Donald R. Hodel is the Emeritus Landscape Horticulture Advisor for the University of California Cooperative Extension in Los Angeles County and specializes in the taxonomy, selection, and management of palms and trees. *drhodel@ucanr.edu*

Publication Date: 18 June 2024.
PalmArbor: *http://ucanr.edu/sites/HodelPalmsTrees/PalmArbor/*
ISSN 2690-3245
Editor-In-Chief: Donald R. Hodel
Hodel Palms and Trees: *http://ucanr.edu/sites/HodelPalmsTrees/*