ADDITIONS TO THE ACANTHACEAE OF PANAMA

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ABSTRACT

Nine species of Acanthaceae are added to the known flora of Panama, including the newly described species Aphelandra kuna. Range extensions into Panama are reported for A. scolnikea, Justicia ephemera, Odontonema cuspidatum, O. rubrum, Sanchezia lutea, and S. parvibracteata. Revised keys to all Panamanian species of Aphelandra, Odontonema, and Sanchezia are provided. Two cultivated species, Pachystachys lutea and Justicia betonica, are also recorded from Panama for the first time.

The treatment of Acanthaceae for the *Flora of Panama* (Durkee, 1978) is now 17 years old. It serves as an extremely helpful facilitator for recognizing additions to the acanthaceous flora of Panama. Most of the new taxa and distributional records discovered since 1978 have been in regions remote from the well-collected provinces of central Panama. Darién Province and the Comarca de San Blas in eastern Panama (adjacent to Colombia) and the Caribbean slope of western Panama (which is becoming increasingly accessible via new roads) have yielded most of the additions of Acanthaceae to the Panamanian flora. Further discoveries are to be expected in these regions as they become more thoroughly explored. On the other hand, because of abundant “geographic taxonomy” in the Neotropics, some species undoubtedly will be combined with others as more collecting and study make geographic patterns apparent.

In this paper, we add nine species to the Acanthaceae known from Panama. These include the description of a new species of Aphelandra; documentation and discussion of six species in four genera that are newly reported from Panama; and notes on the occurrence of two species that are cultivated in Panama. We also provide revised keys to all Panamanian species of Aphelandra, Odontonema, and Sanchezia.

A NEW SPECIES OF APHELANDRA

About 175 species are currently recognized in the wholly neotropical genus Aphelandra (Wasshausen, 1975; McDade, 1984; Daniel, 1991). The updated checklist for Panama (D'Arcy, 1987) included a number of nomenclatural changes and new taxa that had been recognized in the genus since Durkee's (1978) publication. D'Arcy (1987) listed a total of 19 species. McDade (1984) has argued that two of these do not actually occur in Panama. The two Panamanian specimens cited by Durkee (1978) as A. crenata Leonard (otherwise known only from South America) are readily referable to A. campanensis Durkee (Wedel 2501) and A. hartwegiana Nees (Allen 5094). These three species are part of a lineage with branched pedunculate inflorescences, obnate bracts, falcate bracteoles, and distinctive pollen (see McDade, 1984); the Central American taxa should be viewed as provisional pending revision of the entire group. Durkee (1978) identified a number of plants from the ridges of the low, central Panamanian ranges as A. pilosa Leonard. *Aphelandra pilosa* is a South American species with profusely branching inflorescences, short bracts (5–6 mm), and relatively short corollas (ca. 60 mm). It is unlike any *Aphelandra* that occur in Central America. On the basis of morphology and experimental hybridizations, McDade (1984) argued that specimens treated by Durkee (1978) as *A. pilosa* are likely to be hybrids between *A. sinclairiana* Nees and *A. gracilis* Leonard. With the removal of *A. crenata* and *A. pilosa* and the additions (see below) of a new species and a geographic range extension, there are a total of 19 species of *Aphelandra* in Panama and one putative hybrid.

*Aphelandra kuna* T. F. Daniel & McDade, sp. nov.

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R. Dressler 4667 (holotype, US; isotype, DUKE). Figure 1.

Herbae perennes usque ad 1.3 m altae. Folia opposita, petiolata, laminae ellipticae vel obovato-ellipticae, 125–240 mm longae, 48–91 mm latae, 2.2–2.9-plo longiores quam latiores. Spicæ dense bracteate, 60–100 mm longae. Bracteae subrostrate, ovata vel ligulatae, erectae, (26–)30–49 mm longae, 10–17 mm latae, margine dentata dentibus utroque latere 3–4. Corolla atropurpurea, 43–45 mm longa, extus dense sericea. Stamina inclusa, 4.5–5.5 mm longa, thecae 2.8–3.5 mm longae, apice pubescentes.

Monocaulous perennial herbs to 1.3 m tall. Young stems subquadrate (often somewhat collapsed in dried specimens) or flattened, sparsely pubescent with appressed eglandular trichomes to 1 mm long or nearly glabrate. Leaves opposite, petiolate, petioles to 50 mm long, blades elliptic to obovate-elliptic, 125–240 mm long, 48–91 mm wide, 2.2–2.9 times longer than wide, gradually attenuate to decurrent along petiole at base, acuminate at apex, the surfaces sparsely pubescent with appressed eglandular trichomes or becoming glabrate on adaxial surface. Inflorescence a terminal, sessile to short-pedunculate (peduncles to 5 mm long), densely bracteate spike, 60–100 mm long (excluding flowers), 32–45 mm wide (excluding flowers) near midspike, rachis pubescent with anthorsely appressed eglandular trichomes 0.4–1 mm long (sericeous). Bracts pinkish green to pinkish purple, ovate to strap-shaped, erect, (26–)30–49 mm long, 10–17 mm wide, attenuate to long-attenuate at apex, abaxial surface sericeous with eglandular trichomes, lacking nectariferous glands, margin conspicuously dentate (except for proximalmost bracts) with 3–4 teeth per side, the teeth 1.5–7 mm long. Bracteoles lance-subulate, strongly conduplicate, 19–31 mm long, 1.6–3 mm wide, pubescence similar to bracts. Calyx 5-lobed, 8–10 mm long, lobes lanceolate to subulate, unequal in size (i.e., one conspicuously longer and wider than others, the remaining lobes subequal to unequal in size), 6–9.7 mm long, 0.4–1 mm wide, abaxial surface sparsely pubescent to nearly glabrous. Corolla dark purplish with white on lower lip, 43–45 mm long, externally densely sericeous (especially the tube), upper lip 8–10 mm long, bilobed with rounded to acute lobes 3.5–5.5 mm long, 1.5–2.5 mm wide, lower lip 11–12 mm long, deeply trilobed, lateral lobes linear-elliptic, 8.5–11.5 mm long, 2.5–4 mm wide, lower central lobe elliptic, 9–12 mm long, 4.2–7.2 mm wide. Stamens inserted in distal ⅓ of corolla tube, included, 4.5–5.5 mm long, thecae 2.8–3.5 mm long, apically pubescent; staminode 1 mm long. Style 32 mm long, stigma asymmetrically funnelform, 1 mm long. Capsule and seeds not seen.

**Distribution and habitat.** Known only from the vicinity of the type locality in northeastern Panama (Panamá and Comarca de San Blas), in the Serranía de San Blas; plants occur along streams in a region of tropical wet forest at elevations from 300 to 400 m.

**Phenology.** Flowering: June–July, September, November.


Two of the known collections of Aphelandra kuna were identified as A. tridentata Hemsl., a species known only from Costa Rica that bears a superficial resemblance. Using keys to species of Aphelandra in southern Central America (Durkee, 1978, 1986), one might mistake A. kuna for either A. tridentata or A. aurantiaca (Scheidw.) Lindl. It differs from the former by its pinkish (vs. green) bracts with 3–4 (vs. 1–2) teeth per side, 19–31 (vs. 11–12) mm long bracteoles that are strongly (vs. slightly, if at all) conduplicate, purplish (vs. red) corollas that are externally densely sericeous (vs. pubescent with flexuose trichomes) and have a deeply (vs. shallowly) trilobed lower lip with lobes 8.5–11.5 (vs. up to 1) mm long, included (vs. exserted from mouth of corolla) stamens with smooth (vs. papillose) filaments, and thecae 2.8–3.5 (vs. 5.2–6.5) mm long. Aphelandra tridentata is presently known only from central and northern Costa Rica. Aphelandra kuna can be distinguished from the wide-ranging A. aurantiaca by its eglandular (vs. glandular) pubescent bracts with 3–4 (vs. 5–15) marginal teeth per side, eglandular (vs. glandular) bracteoles that vary from 19 to 31 (vs. 7–15) mm in length, purplish (vs. orangish or red) corollas that vary from 43 to 45 (vs. 50–63) mm in length, included (vs. exserted from mouth of corolla) stamens, and thecae 2.8–3.5 (vs. 4–5) mm long. Aphelandra dolichantha can be readily distinguished by its entire bracts subding flowers with minute calyx lobes and white corollas. Further elucidation of relatives within the genus must await a detailed subgeneric treatment.
Figure 1. Aphelandra kuna T. F. Daniel & McDade.—A. Habit (Dressler 4667).—B. Bract (Maas & Dressler 1706).—C. Bracteole (Maas & Dressler 1706).—D. Base of one bracteole and calyx (Maas & Dressler 1706).—E. Apex of bract and corolla (Dressler 4667).—F. Anthers (Dressler 4667).—G. Distal portion of style (Dressler 4667). Drawn by Sheva Myers.
of *Aphelandra*. None of the South American species examined by us or treated by Wasshausen (1975) is likely to be confused with *A. kuna*. A revised key to all of the Panamanian species is provided below.

Pollen of *Aphelandra* is generally 3-colpate (Wasshausen, 1975; McDade, 1984; Daniel, 1991). Pollen of *A. kuna* (i.e., *Maas & Dressler 1706*) was observed with a scanning electron microscope. All pollen was either partially collapsed or otherwise degraded. Although the number and type of aperatures from this collection could not be determined, the exine surface is reticulate as in some other species of the genus.

The specific epithet is derived from the Kuna people who live in the region where this species occurs and who are making concerted efforts to preserve native plant communities in the Serranía de San Blas.

**SPECIES NEWLY REPORTED FROM PANAMA**

*APHELANDRA SCOLNIKAE LEONARD*

This species was described by Leonard (1953) from plants collected at 1700–2500 m elevation in several passes in the mountains surrounding Medellín, Antioquia Province, Colombia. Until recently, the species was known only from this region. A collection from Panama (Darién: Cerro Mali, ca. 22 km E of Pucuro, 1250–1500 m, 20–26 Oct. 1987, G. de Nevers et al. 8475, CAS, MO) extends the range of this unusual species considerably. *Aphelandra scolnikae* is a member of the *A. pulcherima* (Jacq.) Kunth complex (McDade, 1984); within that group, it is a member of the lineage marked by patches of numerous small (less than 0.1 mm in diameter) extrafloral nectaries on the floral bracts. Plants of *A. scolnikae* can be distinguished from others in this lineage by their suffrutescent to treelet habit (vs. monocaulous herbs), relatively small leaves (up to about 22 cm long vs. up to 40 cm long in other species), and densely pubescent (vs. glabrous to puberulent) floral bracts with comparatively few extrafloral nectaries per glandular patch (mean of about 50 vs. more than 100 in other species).

The following key distinguishes all of the species of *Aphelandra* now known to occur in Panama:

1a. Floral bracts marginally toothed.

2a. Floral bracts with paired lateral patches of nectariferous glands.

3a. Floral bracts apically obtuse, 14–20 mm wide, usually entire, rarely with 2–3 pairs of minute marginal teeth each less than 1 mm long; corolla 65–71 mm long

4a. Corolla 36–41 mm long, thecae 3–4 mm long; plants of lowland deciduous forests and edges

1b. Floral bracts lacking nectariferous glands.

5a. Floral bracts less than 15 mm long; corollas less than 20 mm long.

6a. Mature cauline leaves less than 10 cm long; floral bracts imbricate, ovate, with 2–3 well-developed teeth on each side of margin

7a. Leaves glabrous to sparsely pubescent, apically acute; corolla red or pink

8a. Floral bracts pubescent with glandular trichomes, marginal teeth 5–15 per side; bracteoles glandular, 7–15 mm long; corolla orangish or red, 30–63 mm long; stamens exerted from mouth of corolla, thecae 4–5 mm long

9a. Floral bracts with paired lateral patches of nectariferous glands.

10a. Nectariferous glands numerous (at least 50, usually more than 100) per patch and minute (each ca. 0.1 mm diam.).

11a. Floral bracts more than 30 mm long, apically rounded and reflexed; calyx segments much shorter than floral bracts; capsules ca. 35 mm long

12a. Floral bracts distinctly spaced along rachis, lax

1b. Floral bracts closely adjacent or imbricate, rachis not visible during anthesis.