

**STUDIES OF NEOTROPICAL COMPOSITAE–XIV.
BISHOPANTHUS WERFFII (LIABEAE),
A NEW SPECIES FROM CHACHAPOYAS, PERU**

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ABSTRACT

The genus *Bishopanthus* H. Rob. (Compositae: Liabeae: Liabinae) has been rediscovered near Chachapoyas (Amazonas, Peru) and is expanded here to include a second leafy-capitulate species, *Bishopanthus werffii* Pruski & R. Ortiz., **sp. nov.** Key distinguishing features of the new species are opposite trinerved smooth leaves connected by tubular to cupular sheaths, paucicephalous capitulescences of yellow-flowered radiate capitula, and herbaceous-tipped obgraduate phyllaries. A key to the two species of *Bishopanthus*, a distribution map, and microscopic images of critical features of *B. werffii* are given. A table listing distinguishing characters of north Peruvian Liabeae with sheathing leaf bases is provided.

The genus *Bishopanthus* H. Rob. (Compositae) is a shrub belonging to tribe Liabeae (subtribe Liabinae), and is endemic to northern Peru. The generitype *Bishopanthus soliceps* H. Rob. was collected and photographed (Fig. 1) in January 1983, but only the poor fragmentary holotype sheet remains from the original duplicates. *Bishopanthus* was collected too late for inclusion in the then-inpress generic review of tribe Liabeae (Robinson 1983a: April). Shortly after collection, this material was described as a new genus and species, *B. soliceps* (Robinson 1983b: September), and placed in subtribe Liabinae. The microcharacters of *B. werffii*—linear, mid-sized style branches (Fig. 8A) and short-hexagonal pericarp raphide crystals (Fig. 9B)—support placement of *Bishopanthus* in subtribe Liabinae, as in Robinson (1983b). *Bishopanthus* and most Liabeae are characterized by opposite discoloured leaves, yellow-flowered radiate capitula, papillose style trunks, style branches with stigmatic surfaces continuous, and pappus mostly of elongate scabrous bristles. *Bishopanthus* is further distinguished by leaves with tubular to cupular sheathing bases, relatively few-capitulate capitulescences, herbaceous or at least herbaceous-tipped obgraduate phyllaries, and pale-anthers (Figs. 5–6).

Reports subsequent to Robinson (1983b) on chemistry (Singh et al. 1985) and pollen (Robinson & Marticorena 1986) of *Bishopanthus* were based upon the original material of *B. soliceps*. Because of the fragmentary nature of the type, *Bishopanthus* was not included in the key to

Peruvian Liabeae genera by Dillon and Sagástegui (1994). Recent keys to Peruvian Liabeae (Gutiérrez 2010) and genera of Liabeae (Robinson & Funk 2011), however, included *Bishopanthus*. Funk et al. (2013) provided a fine illustration of *B. soliceps*. Robinson (1983b) in the protologue cited *B. soliceps* as containing white latex, and Gutiérrez and Luna (2013) discussed the occurrence of latex in genera of tribe Liabeae.

Here we report that *Bishopanthus* was recollected near Chachapoyas (Fig. 2) in November 2012 by a team headed by Henk van der Werff (MO). The van der Werff plant is obviously a member of tribe Liabeae, a small tribe with its generic center of diversity in Peru. We were unsure, however, of the correct generic placement of the new species. We now have examined all genera of tribe Liabeae, and feel confident that *B. werffii* is correctly placed in *Bishopanthus*. The genus is thus expanded by us to include a newly described second species, *B. werffii*, typified by this recent collection from Chachapoyas. Although now ditypic, *Bishopanthus* remains a narrow-endemic known only from the environs of Chachapoyas (Depto. Amazonas, northern Peru). Similarly, monotypic *Holoschkuhria* H. Rob. (Compositae: Bahieae) was described as endemic to Chachapoyas, although it is now known also from adjacent Ecuador (Robinson et al. 2006).



Figure 1. Habit photograph of *Bishopanthus soliceps*, the generitype, showing bullate trinerved leaves and a solitary capitulum with about 27 ray florets. (About 20 km south of Chachapoyas at Tingo, King & Bishop 9280).

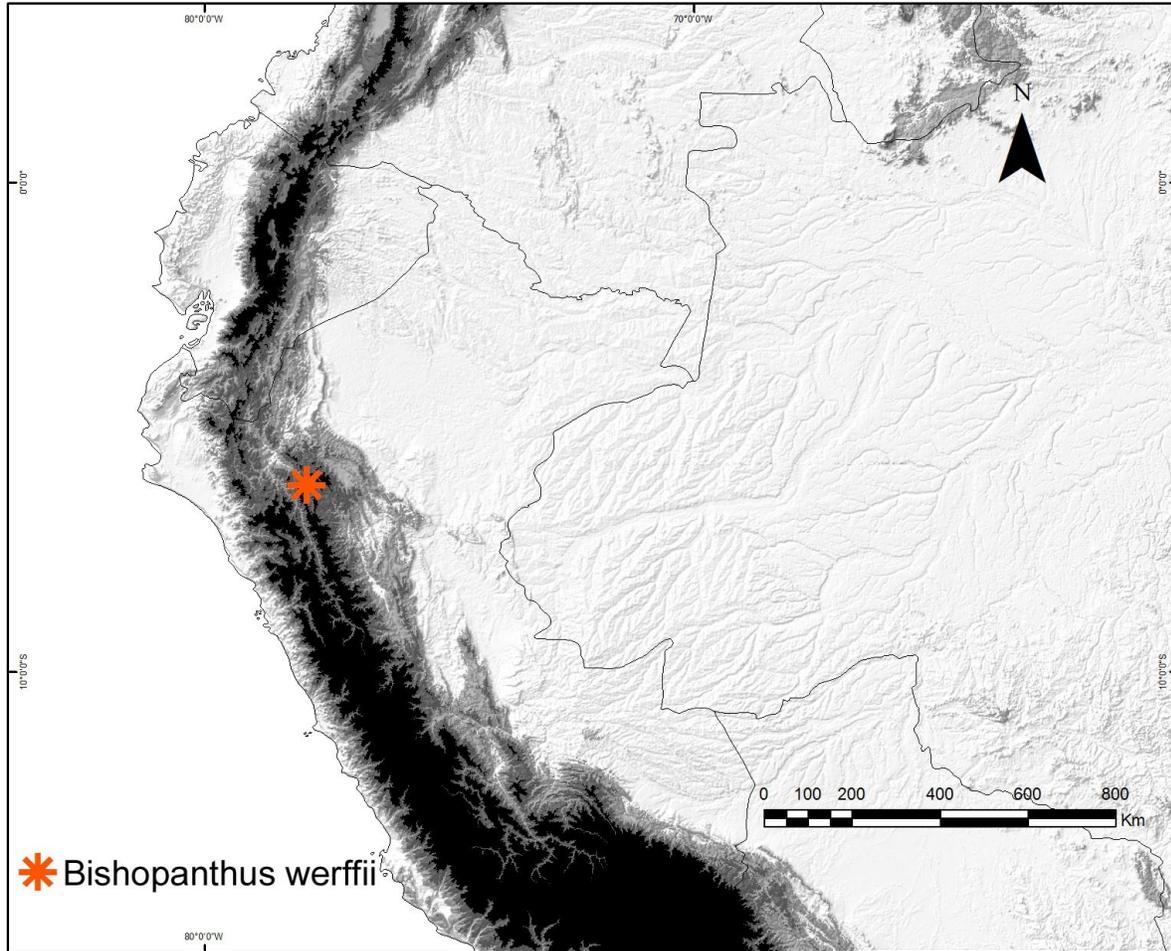


Figure 2. Distribution of *Bishopanthus werffii*, endemic to Chachapoyas in northern Peru. The generitype *Bishopanthus soliceps* is basically sympatric.

The most common genera of Liabeae are *Liabum* Adans. and *Munnozia* Ruiz & Pav. Both are widespread in throughout much of the Andes, as well as near Chachapoyas, Peru. Each contains species that are vining-shrubs or shrubby herbs that are mostly trinerved-leaved. On occasion *Liabum* and *Munnozia* may be perfoliate-leaved, but neither genus has sheathing (vaginate) leaf bases (Robinson 1983a), thereby differing from *Bishopanthus*. *Munnozia* further differs from most Liabeae by its black anthers. The segregate of *Munnozia*, paucispeciose, partly sympatric, bullate-leaved *Dillandia* V.A. Funk & H. Rob., similarly is perfoliate-leaved but lacks elongated sheathing leaf bases. *Pseudonosseris glandulosa* (Hieron.) Pruski, which includes in synonymy the generitype of Andean *Pseudonosseris* H. Rob. & Brettell (Fig. 3A), is a reddish-orange-flowered small herb, and thus differs from other regional Liabeae (Pruski 2012). Andean *Philoglossa* DC. differs from the new species by its herbaceous habit, concolorous leaves, and reduced pappus. None of the five aforementioned regional genera are overly similar to the new species, and none have basal leaf sheaths. Other Peruvian genera of Liabeae not closely resembling *Bishopanthus* include herbaceous *Chrysactinium* (Kunth) Wedd. and *Paranephelius* Poepp., and a few vining genera, e.g., *Oligactis* (Kunth) Cass.

The five regional genera of Liabeae that have sheathing leaf bases (viz Table 1) are *Bishopanthus* H. Rob. (now 2 spp.) (Figs. 1–2, 5–9), *Cacosmia* Kunth (3 spp.), monotypic *Chionopappus* Benth., *Erato* DC. (5 spp.) (Fig. 3B), and locally abundant *Ferreyranthus* H. Rob. &

Brettell (ca. 10 spp.) (Fig. 4). *Erato* (Paranepheliinae) sometimes has herbaceous-tipped outer phyllaries, but differs obviously from *Bishopanthus* by its long-petiolate leaves with strigose but concolorous, palmately veined, large orbicular blades. Peruvian *Chionopappus* (Paranepheliinae) is known only west of Río Marañón in the western Andean Cordillera, where it occurs mostly from Lima north to Cajamarca. *Chionopappus* is paucicephalous and has leafy outer phyllaries, thus resembling *Bishopanthus*, but *Chionopappus* differs from the aforementioned sheathing leaf based Peruvian Liabeae by reddish disk corollas and by plumose pappus bristles. *Cacosmia* (Liabinae) differs from other sheathing-leaved genera of Liabeae by its epappose 4–5-angled non-costate cypselae.

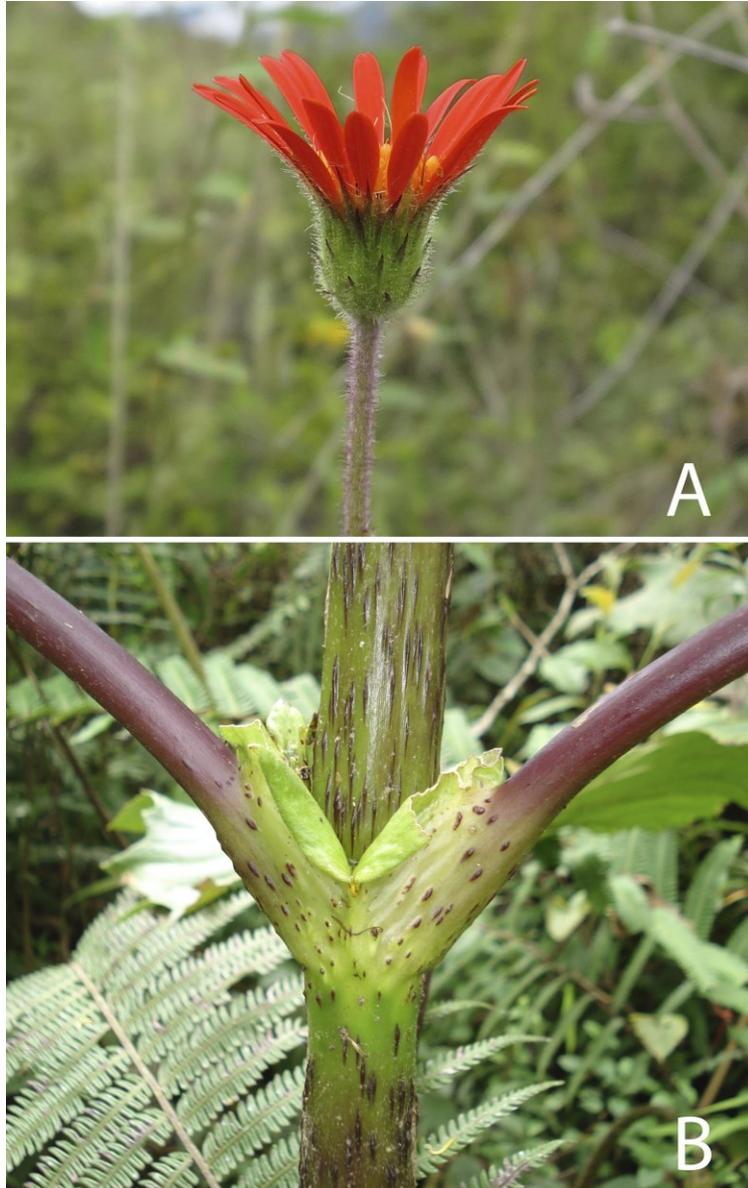


Figure 3. A. Capitulum of *Pseudonosseris glandulosa* (Hieron.) Pruski, showing graduated phyllaries, the reddish-orange ray corollas, and stipitate-glandular indument. B. Sheathing leaf bases of *Erato polymnioides* DC. (A Karajia near Chachapoyas, Pruski & Ortiz 4893; B Oxapampa, Pruski et al. 4381).



Figure 4. Diagnostic characters of *Ferreyranthus*. A. Sheathing (vaginate) leaf bases of bullate-leaved *Ferreyranthus rugosus* (Ferreyra) H. Rob. & Brettell. B. Flowering stem of *Ferreyranthus excelsus* (Poepp.) H. Rob. & Brettell group sensu Dillon and Sagástegui (1994), showing the many small capitula and the pinnately veined (as seen abaxially) smooth leaves. (A About 20 km west of Chachapoyas between Karajia and Quiocta, Pruski & Ortiz 4872; B About 20 km south of Chachapoyas between Tingo and Kuélap, Carlos Amasifuen, July 2018).

Table 1. Northern Peruvian genera of Liabeae having sheathing (vaginate) leaf bases.

<i>Bishopanthus</i> (Liabinae)	Leaf blades trinerved, discolorous, bullate or smooth; latex present in <i>B. soliceps</i> , possibly absent in <i>B. werffii</i>	Involucre with phyllaries obgraduate, outer phyllaries herbaceous-tipped; cypselae setose and glandular, with long scabrous pappus bristles
<i>Cacosmia</i> (Liabinae)	Leaf blades trinerved, discolorous, bullate; with or without latex	Involucre with phyllaries graduate, outer phyllaries scarious; cypselae glabrous, without pappus
<i>Chionopappus</i> (Paranepheleinae)	Leaf blades trinerved, discolorous, smooth; latex absent	Involucre with phyllaries obgraduate, outer phyllaries leafy; cypselae setulose, eglandular, with long plumose pappus bristles
<i>Erato</i> (Paranepheleinae)	Leaf blades palmatinerved, concolorous (but often strigose), smooth; latex present	Involucre with phyllaries graduate, outer phyllaries usually scarious; cypselae setulose or glabrous, eglandular, with long scabrous pappus bristles
<i>Ferreyranthus</i> (Liabinae)	Leaf blades pinnately veined, discolorous, bullate or smooth; latex absent	Involucre with phyllaries graduate, outer phyllaries scarious; cypselae setose and glandular, with outer squamellae and elongate scabrous inner pappus bristles

We initially thought that the new species could be a *Ferreyranthus* (Fig. 4), a genus (subtribe Liabinae) revised by Dillon and Sagástegui (1994). *Ferreyranthus* proves to be different than the van der Werff plant, however, by its pinnately veined leaves, large corymbiform-paniculate capitulescences, clearly graduated phyllaries, and outer pappus of moderately broad squamellae. Otherwise, *Bishopanthus* seems fairly similar to *Ferreyranthus*: they are the only elongate-pappose regional Liabinae genera with sheathing leaf bases (Table 1).

A footnote in Dillon and Sagástegui (1994) stated that they keyed Peruvian genera of Liabeae, except poorly known *Bishopanthus*. The first author examined the fragmentary holotype of *Bishopanthus* at the Smithsonian Institution in the 1990s during a nine-year residence there. The footnote noting the absence of *Bishopanthus* in the generic key by Dillon and Sagástegui (1994), triggered memory of the sheathing-leaf based plant and of its field photograph (Fig. 1), shown to the first author a few decades ago by Bob King and Harold Robinson.

We realized *B. werffii* had the essential characters—trinerved leaves joined by leaf sheaths, few capitula, large bracteate outer phyllaries, and narrow outer pappus bristles—of *Bishopanthus*, a genus previously known only from the type that is bullate-leaved and has moderately large monocephalous capitula. By these features we take the van der Werff plant, as the second species *Bishopanthus*, describing it here as *Bishopanthus werffii*. Henk van der Werff (pers. comm.) noted no latex in his collection, whereas *B. soliceps* reportedly contains latex. Latex characters, however, are sometimes known elsewhere to vary within individual genera of Liabinae (e.g., *Cacosmia*), but nevertheless we note that *B. werffii* may lack latex as does *Ferreyranthus*. Gutiérrez and Luna (2013) and Funk et al. (2011) noted that most taxa of subtribe Liabinae are characterized by absence of latex.

As redefined by the inclusion of *Bishopanthus werffii*, *Bishopanthus* still seems similar to *Ferreyranthus* (Liabinae sensu Robinson 1983a), especially to small-leaved *F. gentryi* H. Rob. and *F. vernonioides* (Muschl.) H. Rob. & Brettell. We follow Robinson (1983b) and use the trinerved leaves, few-capitulate branches, and outer leafy phyllary characters as diagnosing *Bishopanthus* and distinguish it from *Ferreyranthus*. Each *Bishopanthus* and *Ferreyranthus* have a shrubby habit,

sheathing leaf bases, and mid-sized disk floret style branches, and are thereby seeming related. *Ferreyranthus* also parallels the expanded *Bishopanthus* by being comprised of both bullate-leaved and smooth-leaved species (Fig. 4, Table 1). Acaulescent *Pseudonosoris* as well as other genera of Liabeae are also known to contain species with leaves either adaxially bullate or smooth (Robinson 1983a; Pruski 2012). The very striking bullate leaf character thereby appears not always to be generically diagnostic within Liabeae, but instead in the cases of *Bishopanthus*, *Ferreyranthus*, and *Pseudonosoris* only distinguishes species.

We note that *Munnozia* of subtribe Munnoziinae includes species with both pinnate-veined leaves and trinerved leaves, both monocephalous species and corymbiform-paniculate species, as well as species with either graduate to subequal or obgraduate leafy-bracteate phyllaries, features distinguishing *Bishopanthus* from *Ferreyranthus*. Although the leafy-bracteate outer phyllary character in some Compositae often seems to be influenced by environment (in simple terms, wetter areas may have a disproportionate high number of leafy bracted species), in the present case of partly sympatric *Bishopanthus* and *Ferreyranthus* the differences in the leafy-bracteate capitulum character may perhaps be phylogenetically informative, and not environmentally driven. *Bishopanthus soliceps* (as noted by Robinson 1983b) and *B. werffii* are very similar in gestalt to *Cacosmia* (Liabinae), which differs, however, by its much reduced pappus and few-flowered capitula. Even though an expanded *Bishopanthus* now becomes even more similar to the earlier *Ferreyranthus* than previously thought, while reviewing an early draft of our manuscript Liabeae authority Harold Robinson (pers. comm., 31 December 2013) said that our "placement" of the new species in *Bishopanthus* "is as good as any."

The purpose of the present note is to validate *Bishopanthus werffii*, to put its discovery into context, and to lay the ground work for further work on *Bishopanthus*, *Ferreyranthus*, and *Munnozia*. Our searches from April–July 2018 in mountains surrounding Chachapoyas resulted in documentation of several genera of Liabeae (e.g., Figs. 3–4), but not of *Bishopanthus*. Our failure to find the genus suggests that *Bishopanthus* is relatively rare, and also that it is now time to validate *Bishopanthus werffii*. We intend to further explore areas near Chachapoyas, however, hoping to find *Bishopanthus* and to sequence it; *Bishopanthus* was not sequenced in recent phylogenies (e.g., Soejima et al. 2008; Funk et al. 2012).

The two species of *Bishopanthus* are distinguished in the following key.

Key to species of *Bishopanthus*

1. Leaves bullate adaxially, blade margins denticulate nearly throughout; capitulescence solitary-capitulate; capitula (45–)49–53-flowered, ca. 10 mm tall; phyllaries recurved, abaxially bullate; ray florets (20–)24–29; disk florets ca. 25, corollas 7–7.5 mm long, hirtellous with patent trichomes proximally; anther appendage oblong-ovate, 0.4–0.5 mm long
..... ***Bishopanthus soliceps*** H. Rob.
1. Leaves nearly smooth adaxially, blade margins entire to few-denticulate with 1–3 teeth; capitulescence open-cymose-corymbiform; capitula 23–28-flowered, 8–9 mm high; phyllaries pressing straight, abaxially smooth; ray florets 11–13; disk florets 12–15, corollas 6.2–6.5 mm long, glabrous proximally, never setose; anther appendage lanceolate, 0.7–0.8 mm long
..... ***Bishopanthus werffii*** Pruski & R. Ortiz

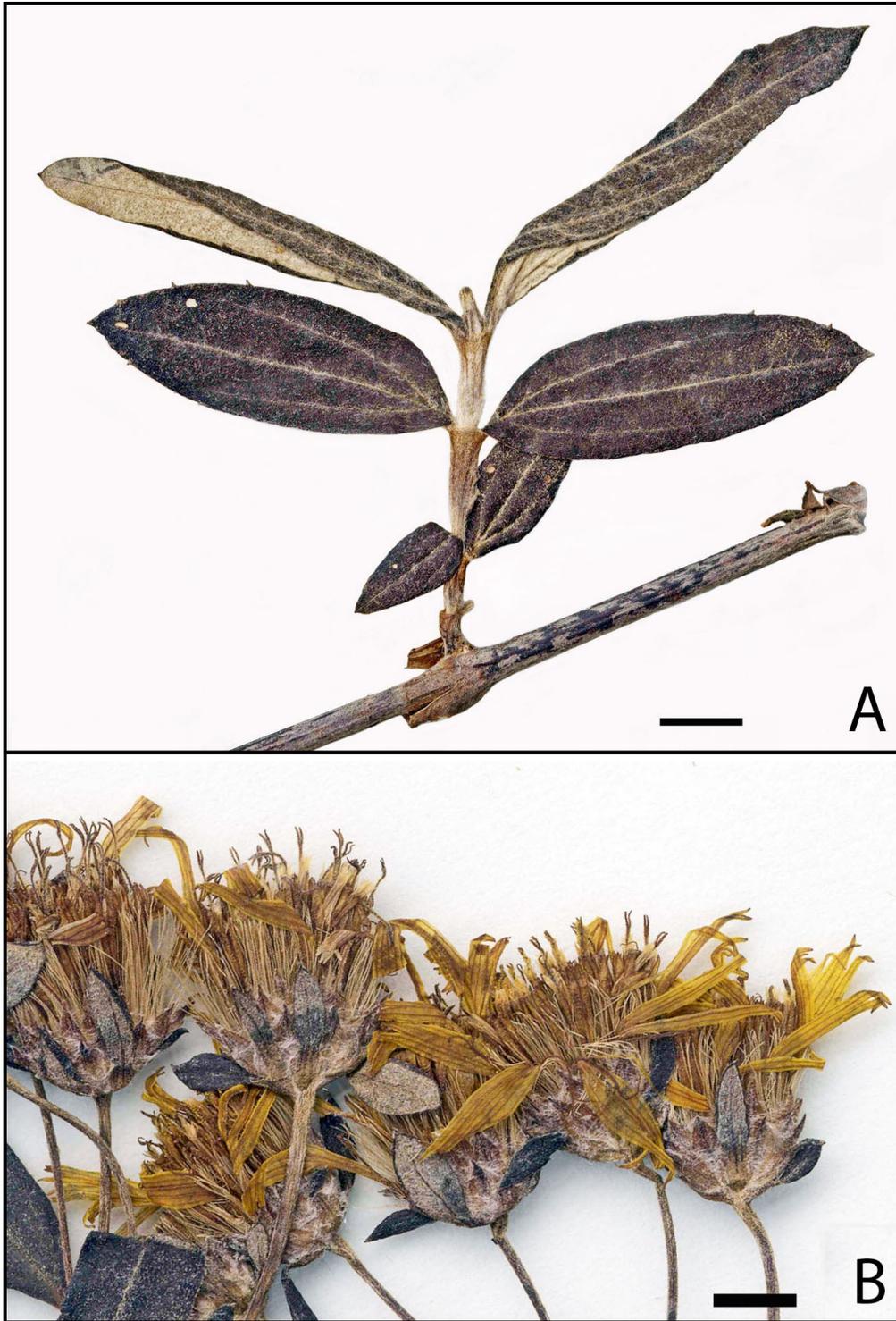


Figure 5. Close-ups of holotype of *Bishopanthus werffii*, showing generically important features. A. Branchlet showing nodes with sheathing-based trinerved smooth discolorous leaves. B. Capitula showing yellow ray corollas, pale anthers, and obgraduate phyllaries, the outer series of which is herbaceous distally. The capitula appear leafy-bracteate. (From the holotype, *van der Werff et al.* 25642, MO). Scale bars 5 mm.

BISHOPANTHUS WERFFII Pruski & R. Ortiz, **sp. nov.** **TYPE: PERU. Amazonas.** Along road from Utcubamba Valley to Luya and Karajia, degraded dry scrub, 6° 12' 08" S, 77° 54' 29" W, 2000–3000 m, 14 Nov 2012, *van der Werff, Valenzuela, Shareva & Reyes 25642* (holotype: MO; isotype: USM, one isotype to be distributed). Figures 2, 5–9.

Suffruticosa circiter 0.5 m alta; folia opposita brevipetiolata basaliter vaginata, lamina elliptico-lanceolata vel elliptica 1–4 × 0.5–1.4 cm chartacea trinervis discolorata supra virida laevis sparse arachnoideo-tomentosa et glandulosa, subtus ochracea arachnoideo-tomentosa et glandulosa; capitulescentia cymosa-corymbiforma 4–8 cm alta et lata, 20–40-capitulata, rami distaliter 4–5 cm longi 5-capitulati, pedunculi 0.7–3 cm longi tenui; capitula radiata 8–10 mm alta flosculis 23–28; involucreum campanulatum 5–6.5 × 5–7 mm; phyllaria 26–28 obgraduata dimorphica 3–4-seriata, externa herbacea distaliter arachnoideo-tomentosa apice reflexa, interna chartacea subglabrata erecta; flosculi radii 11–13, corollis 10–12 mm longis; flosculi disci 12–15 corollis 6.2–6.5 mm longis infundibuliformis basaliter glabrata nec setosa distaliter glandulosa, anthera circiter 3 mm longa pallida appendice lanceolata 0.7–0.8 mm longa, styli rami brevi; cypselae 1.5–1.7 mm longae setosae et glandulosae; setae internae pappo 5.3–5.8 mm longae.

Shrubs ca. 0.5 m tall, branching opposite (trichotomous); stems much-branched, subterete or slightly angled, loosely arachnoid-tomentose and sessile-glandular, possibly lacking latex, nodes sheathed in tubular to cupular (vaginate) leaf base that segments longitudinally in older stems, main stem internodes shorter than leaves, branches 12–22 cm long, ultimate flowering branchlets 4–5 cm long with 2–3 pairs of leaves and internodes about as long as leaves. **Leaves** with base moderately to strongly vaginate with lingering arachnoid-tomentulose and glandular sheath 1–4 mm long; petiole 0.1–0.2 cm long, broadly winged; blade elliptic-lanceolate to elliptic, 1–4 × 0.5–1.4 cm, chartaceous, trinerved from petiole, weakly reticulate with distal secondary and tertiary veins more or less equally thin, surfaces discolorous, adaxial surface mostly green, more or less smooth with midrib and basal pair of arching secondary veins only slightly impressed, never obviously bullate, lingering arachnoid-tomentulose (especially along the three main veins) and also moderately punctate-glandular, abaxial surface ochraceous, moderately arachnoid-tomentose but never so dense as to obscure underlying sessile glands, trichomes to ca. 0.5+ mm long, weakly flagelliform with slightly enlarged base, midrib and secondary veins visible and slightly raised but tertiary reticulation basically obscured by tomentum, base cuneate to obtuse, margins entire to few-denticulate with 1–3 teeth 0.2–0.4 mm long, sometimes slightly revolute, apex acute to obtuse, mucronulate. **Capitulescence** open-cymose-corymbiform, paucicapitulate, each main lateral flowering branch 4–8 cm long and broad, rounded in overall shape, each main lateral flowering branch 20–40-capitulate, ultimate flowering branchlets 4–5 cm long, each ultimate branchlet nearly at right angles to next higher order flowering branch, each usually flat-topped and 5-capitulate; peduncles 0.7–3 cm long, thin, moderately arachnoid-sericeous and sessile-glandular, sometimes 1–2-bracteolate immediately below capitulum by excurrent outer phyllaries. **Capitula** radiate, 8–10 mm tall, 23–28-flowered, appearing leafy-bracteate; involucre campanulate, 5–6.5 × 5–7 mm, much shorter than the disk florets but pressing with outer series of phyllaries almost as long as disk florets; phyllaries 26–28, obgraduate, dimorphic, 3–4-seriate; outer ca. 6 phyllaries oblong to spatulate or pandurate, 5–8 × 1.5–1.8 mm, usually somewhat spreading, straight, herbaceous or at least herbaceous-tipped, 3-nerved in proximal half, abaxially ochraceous, lingering arachnoid-tomentulose to glabrate proximally, arachnoid-tomentose in distal half, adaxially green, sparsely lingering arachnoid-tomentulose; inner 2–3 series of phyllaries moderately graduate, ovate grading to innermost lanceolate, 3–5 × 0.6–1.5 mm, appressed, chartaceous, stramineous, 3–5-nerved, subglabrous or with distal margin ciliolate or with apex sometimes lingering arachnoid-pubescent, apex acute to acuminate; clinanthium ca. 2 mm diam., spiculiferous, spicules 1–1.5 mm long, broad-based and abruptly narrowed or lacerate into sharp attenuate tips. **Ray florets** 11–13, pistillate; corolla 10–12 mm long, 3+0 (rarely 3+1 with tube ca. 3.5 mm long, inner lip ca. 3 mm long, limb ca. 6 mm long), yellow, tube 2.5–3 mm long, sparsely setulose, limb oblanceolate, 7.5–9 ×

1.2–1.6 mm, 5-nerved, apex 3-dentate, teeth 0.5–1 mm long; style well-exserted, branches linear, nearly as long as exserted portion of trunk, longer than those of disk florets. **Disk florets** bisexual, 12–15; corolla narrowly funnelform, 6.2–6.5 mm long (ca. 5.6 mm long when dry), 5-lobed, yellow, tube and throat not well-differentiated, somewhat glandular in distal 2/3, glands obovoid and minutely stalked, eglandular and glabrous, never setose, in proximal 1/3, tube, throat, and lobes subequal, tube 2–2.1 mm long, throat 2–2.1 mm long, throat only slightly ampliate, lobes lanceolate, 2.2–2.3 mm long; anthers 2.7–3 mm long, stramineous, filament glabrous, appendage lanceolate, 0.7–0.8 × ca. 0.2 mm, basal spurs 0.4–0.5 mm long; pollen spherical, echinate, tricolporate; style trunk long-papillose distally, branches 1–1.2 mm long, mid-sized, linear (not filiform), about as long as the exserted portion of long-papillose shaft, stigmatic surfaces continuous. **Cypselae** (immature) obconic, 1.5–1.7 mm long, 8–10-costate, brown, pericarp raphide crystals short-hexagonal, 10–15 μm long (cypselae immature and perhaps crystals under-developed), surfaces moderately setose with patent biseriate duplex trichomes (twin hairs) 0.1–0.15 mm long, also moderately to densely sessile-glandular, carpodium annular, 0.1–0.15 mm tall; pappus bristles ca. 30, 2–3-seriate, stramineous, scabrous, mostly subequal and 5.3–5.8 mm long but with a few outer narrow bristles (not broadened into squamellae) 1–1.5 mm long, the longer bristles of ray florets longer than corolla tube, the longer bristles of disk florets reaching to about proximal 1/3 of the corolla lobes.

Eponymy. We are pleased to name this species for our colleague Dr. Henk van der Werff (MO), collector of the type. Henk van der Werff is well-known for his work on the Flora del Río Cenepa, Amazonas, Perú, and as a specialist of Lauraceae, which are especially diverse at mid-elevations in the montane neotropics, such as where he discovered *B. werffii*.



Figure 6. Holotype of *Bishopanthus werffii* Pruski & R. Ortiz. (*Van der Werff et al.* 25642, MO). Scale bar 5 cm.



Figure 7. Florets of *Bishopanthus werffii*. A. Rays: anomalous 3+1 ray floret (left) with cypsela and pappus bristles removed; intact 3+0 ray floret (right). B. Three disks florets showing mid-sized style branches and proximally non-setose corollas; the cypsela and pappus bristles have been removed. C. Proximal portion of disk corolla with sparse glands and without patent trichomes. D. Anthers and style from disk floret showing lanceolate apical anther appendages (adaxial surfaces) (lower background) and papillose style (dark-staining and curving towards upper right). (From the holotype, *van der Werff et al.* 25642, MO). Scale bars A–B 5 mm, C 0.5 mm, D 1 mm.

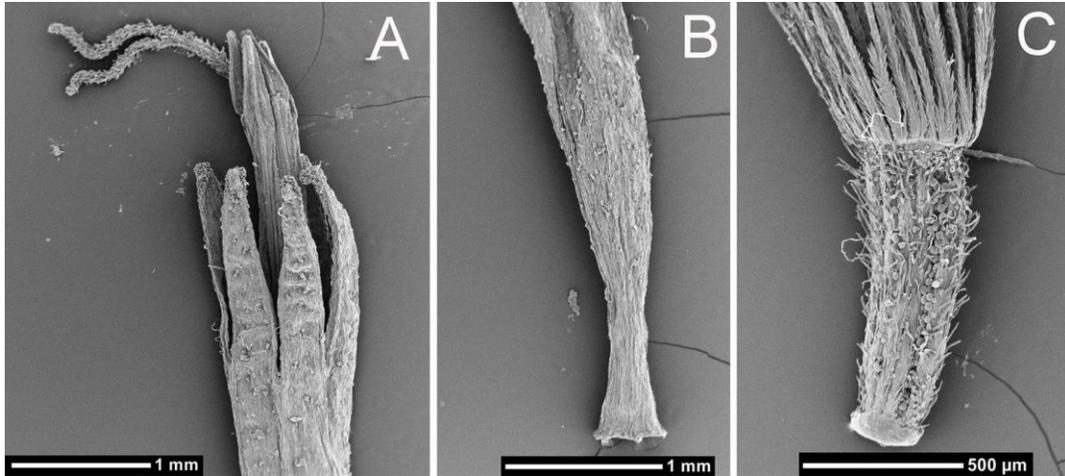


Figure 8. SEM micrographs of *Bishopanthus werffii*. A. Distal portion of disks floret showing the papillose style shaft and branches (upper left) and elongate corolla lobes and the mid-sized style branches B. Disk corolla throat and the glabrous tube. C. Cypsela showing setose and sessile-glandular indument, 8–10 ribs, and narrow, mostly elongate scabrid pappus bristles. (From the holotype, *van der Werff et al.* 25642, MO).

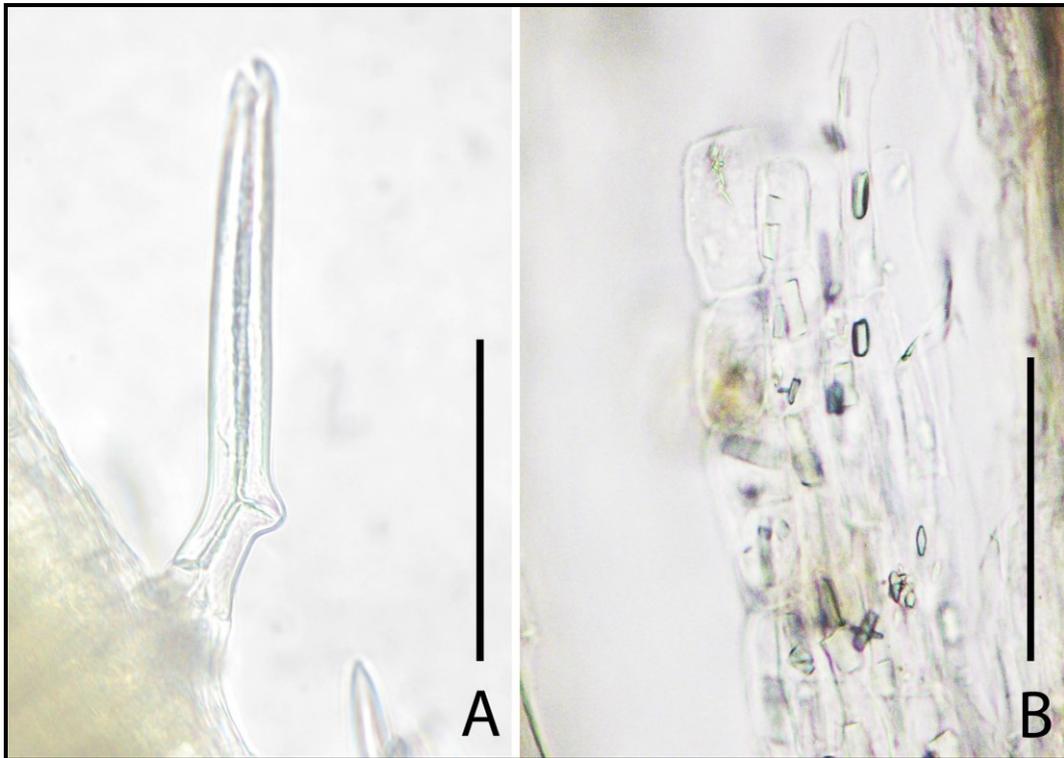


Figure 9. Cypsela microcharacters of *Bishopanthus werffii*. A. Duplex trichome. B. Pericarp showing several short-hexagonal raphide crystals. (From the holotype, *van der Werff et al.* 25642, MO). Scale bars A 0.5 mm, B 100 μ m.

Distribution and ecology. *Bishopanthus werffii* (Fig. 2) is known only from the type locality, this west of Chachapoyas on the road to the Sarcófagos de Karajia (Depto. Amazonas, Peru). This shrub was collected between 2000–3000 meters elevation, and was in full flower in November. In April–July 2018 we searched for *B. werffii* at the type locality west of Chachapoyas along the road

to Karajia, and found instead the related *Ferreyranthus*. The type locality of *B. werffii* is only about 20 km north of the type locality of the nearly sympatric *B. soliceps* H. Rob. (Fig. 1), which was collected in flower in January. Similarly, during our hunts for *B. soliceps* south of Chachapoyas at the type locality near Tingo and Kuélap, we failed to find it and found instead only *Ferreyranthus*. *Bishopanthus* is apparently rare, and may remain narrowly endemic in Amazonas, Peru, occurring only east of the Río Marañón and south of the Huancabamba Depression. Although our searches were later than the known flowering season of *Bishopanthus* (November–January), it seems that neither species of *Bishopanthus* is as common as those of the related *Ferreyranthus*. About fourteen of the ca. 19 genera of Liabeae occur in Peru (Robinson 1983a, 1983b; Dillon & Sagástegui 1994; Gutiérrez 2010; Funk et al. 2012; Pruski 2012), with most centered in northern Peru, and so it is not altogether surprising to find a second species of *Bishopanthus* in the area where the tribe is especially well diversified. It is somewhat unsettling, however, that *Bishopanthus* contains two species, each known from only their respective types.

Bishopanthus werffii has leaf surfaces more or less smooth (never obviously bullate) adaxially and an open-cymose-corymbiform paucicapitulate (vs. solitary-capitulate) capitulescence, thus stands at odds with some features used as characteristic of *Bishopanthus* in the previous keys (e.g., Gutiérrez 2010; Robinson & Funk 2011). We do not know whether the lacerate enations on the clinanthium of *B. werffii* distinguish it from *B. soliceps*. Although the relatively well-spaced nodes and paucicapitulate branches seen in *B. werffii* (viz Figs. 5–6) are characters perhaps accentuated by year-to-year climatic differences, elsewhere within individual species of tribe Liabeae we have not seen such wide swings in morphology. It seems as though the gross structural differences seen in the types of each species of *Bishopanthus* are effectively constant, rather than (wholly) environmentally-induced. The nearly smooth (vs. adaxially bullate; compare Figs. 5A, 6 vs. Fig. 1) leaves, fewer-flowered capitula, and non-setose (vs. proximally setose) corolla bases (compare Figs. 7A–C 8B; vs. Fig. 3E–F in Funk et al. 2013) of *B. werffii* further distinguish it from *B. soliceps*. We do not believe that the van der Werff collection is simply an extreme ecological variant of *B. soliceps*, the generitype, nor do we believe it should be placed in *Ferreyranthus*. Thus, we report the rediscovery of the genus *Bishopanthus*, and describe a second species, *Bishopanthus werffii*.

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