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Beccarinda nhatii (Gesneriaceae), a new species from Lao Cai, northwest Vietnam

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ABSTRACT: *Beccarinda nhatii*, a newly discovered species from Lao Cai Province in Northwest Vietnam, is described and illustrated. It exhibits morphological similarities to *B. argentea*, including elliptic-ovate leaf blades that are covered with subappressed strigose hairs abaxially, ovate bracts, a purple-tint corolla, and glabrous pistil. However, it can be distinguished from *B. argentea* by its entire leaf margin (*vs*. crenate to dentate or serrate), glabrous upper leaf surface except for the margin, which features a narrow (*ca*. 1 mm) zone densely covered with subappressed, curved strigose (*vs*. whole covered with spreading strigose), and a completely glabrous corolla (*vs*. sparsely pubescent on the outside). The global conservation status of this new species was tentatively proposed here as Critically Endangered (CR B2ab(iii,V;D)).

KEY WORDS: *Beccarinda argentea*, *Beccarinda tonkinensis*, endemism, Gesneriad conservation, plant taxonomy.

INTRODUCTION

The genus *Beccarinda* Kuntze (1891) encompasses eight species (Wang *et al*., 1998; Gammi *et al*., 2020; POWO, 2025; WFO, 2025), distributed across northeastern India, Myanmar, southern China, Laos, Vietnam, and Indonesia (Möller *et al*., 2017). *Beccarinda* species can be distinguished from closely related genera by their anthers of fertile stamens which are coherent, the corolla with a distinctly shorter adaxial lip than the abaxial one, and the capsule that is oblique in relation to the pedicel (Wang *et al*., 1998; Gammi *et al*., 2020). In Vietnam, only two species have been documented (Vu 2017; POWO 2025), namely *B. erythrotricha* W.T.Wang (Wang and Pan, 1982) and *B. tonkinensis* (Pellegrin) B.L.Burtt (Burtt, 1955; Pellegrin, 1926). In July 2024, during fieldwork to find ornamental herbaceous plants in lowland forest of Chien Ken Commune (formerly Nam Tha Commune, Van Ban District), Lao Cai Province, Mr. Trieu Van Nhat, a local gardening enthusiast discovered sterile plants with strikingly attractive foliage. Later, in mid-March 2025, he collected flowering specimens and sent them to Hanoi for further examination. Morphologically, this species clearly belongs to *Beccarinda*, characterized by its coherent anthers of fertile stamens and distinctly shorter adaxial corolla lip. However, its leaves exhibit entire margins densely covered with subappressed, curved strigose hairs, a unique combination of characteristics not found in any known species of the genus. After further morphological and literature examinations, along with meticulous comparisons against herbarium specimens, we confirm our collection as a novel species. Therefore, we formally describe and illustrate it below.

MATERIAL AND METHODS

Alcohol-preserved materials and dried herbarium specimens of the new species were deposited in the HN Herbarium. Additionally, photographs documenting the habitat and plant habits were taken during field observations in the wild. Morphological characters were measured in the laboratory using living, alcohol-fixed, and dry materials. The terminology employed in the description follows Beentje (2016). The assessment of conservation status adheres to the guidelines outlined in the IUCN Red List Categories and Criteria on-line version (IUCN 2024). Acronyms for all herbaria in the text follow Thiers (2025).

TAXONOMIC TREATMENT

Beccarinda nhatii V.T.Bui, K.S.Nguyen & C.W.Lin, ***sp. nov.*** **Figs. 1, 2**

Type: VIETNAM. Lao Cai Province: Chien Ken Commune (formerly Van Ban District, Nam Tha Commune), Khe Pan village, remnants of primary evergreen broad-leaved lowland forest on a shale mountain, around point 21.92720° N, 104.40500° E, elev. 400–500 m a.s.l., 18 March 2025, *Trieu Van Nhat, TVN-LC 007* (holotype: HN!; isotypes: HN!).

***Diagnosis*:** *Beccarinda nhatii* resembles *B. argentea* (J. Anthony) B.L. Burtt (Anthony, 1934; Burtt, 1955) in having elliptic-ovate leaf blades covered abaxially with

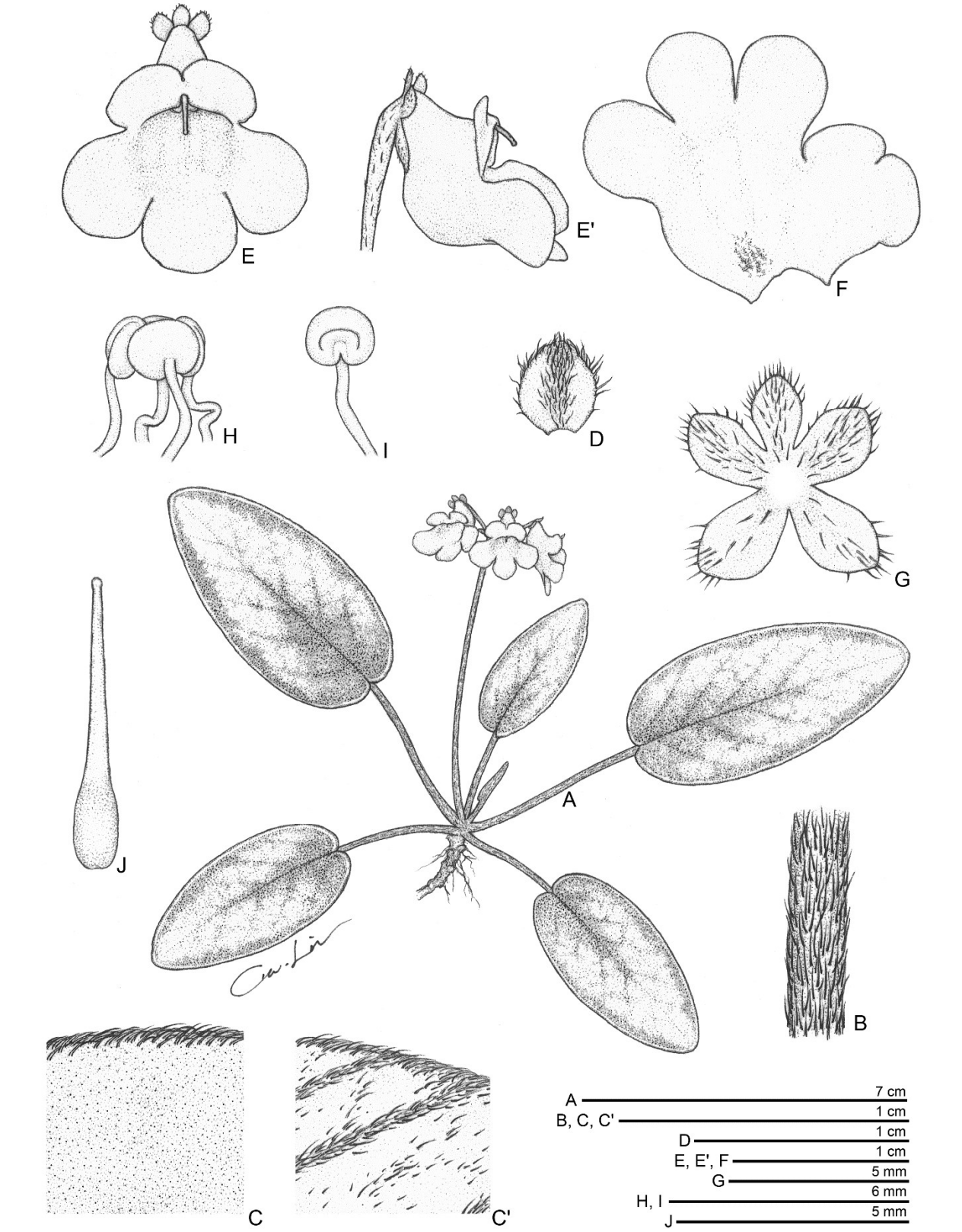

Fig. 1. ***Beccarinda nhatii*** **A.** Habit. **B.** Petiole**. C, C'.** Portion of leaf, adaxial and abaxial surfaces. **D.** Bracts. **E, E'.** Flower, front and lateral views. **F.** Dissected and flattened corolla (stamens remove). **G.** Calyx, outside view. **H.** Stamens. **I.** Stamin, ventral view. **J.** Pistil. All drawn from the holotype, *TVN-LC 007* by Che Wei Lin.

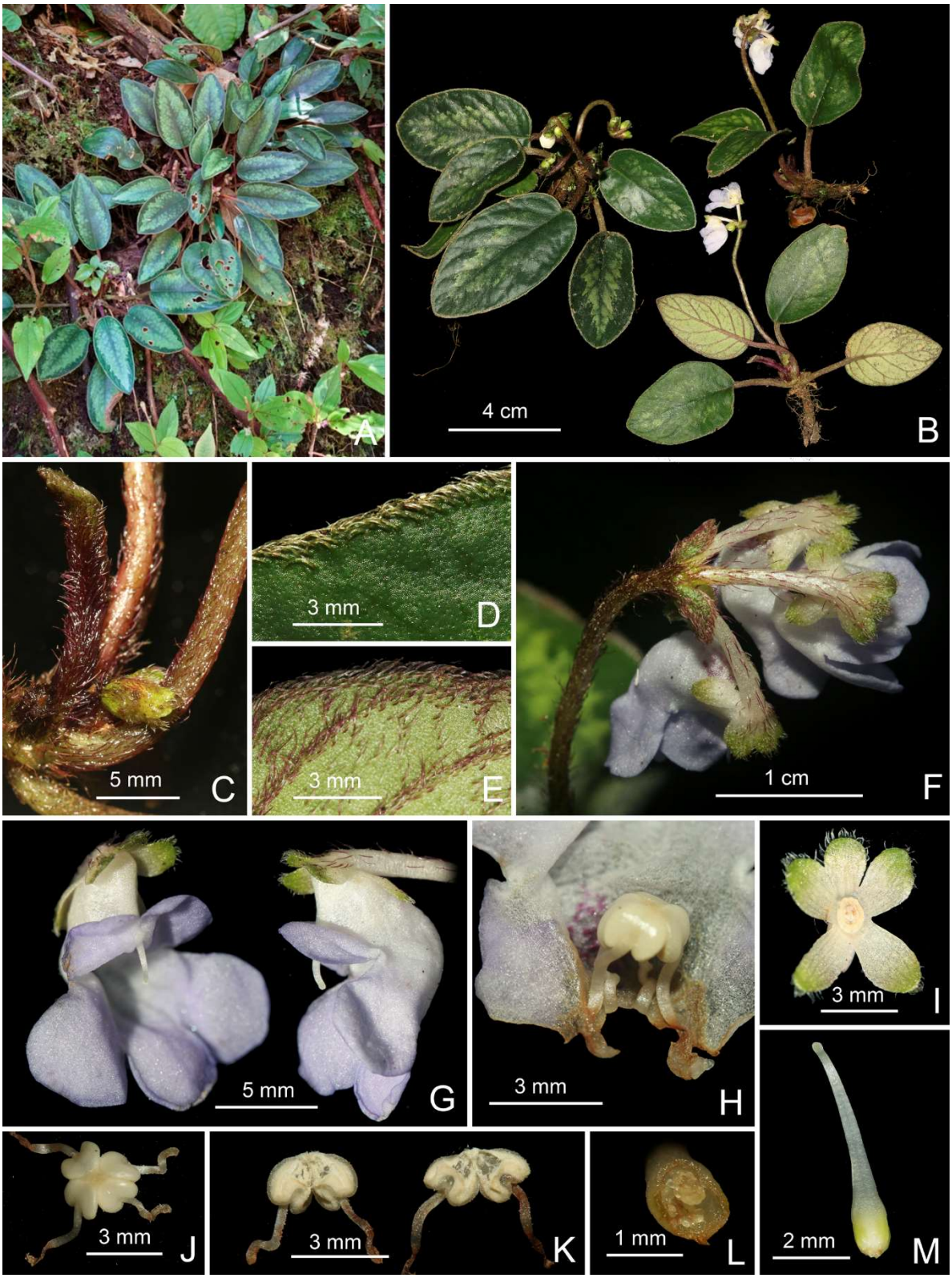

Fig. 2. ***Beccarinda nhatii*** **A.** Habitat and habit. **B.** Flattened flowering plants. **C.** Petiole, leaf and flower buds. **D.** Portion of leaf, adaxial surface. **E.** Portion of leaf, abaxial surface. **F.** Inflorescence. **G.** Corollas. **H.** Dissected and flattened corolla, showing stamens adnate to the inner surface of the corolla tube, with staminodes absent. **I.** Calyx, inside view. **J.** Stamens, front view of dorsal surface. **K.** Dissected and flattened stamens, ventral surface. **L.** Cross section of an ovary. M. Pistil. Photo A by T.V. Nhat, B–M by K.S. Nguyen, from specimens used for preparation of the holotype and isotypes.

Table 1. Comparison of morphological characters of ***Beccarinda nhatii***, ***B. argentea*** and ***B. tonkinensis***.

	B. nhatii	***B. argentea***	***B. tonkinensis***
Leaf			
base	subcordate to rounded	rounded to broadly cuneate	cordate
margin	entire	crenate to dentate or serrate	crenate to dentate
indumentum			
petiole	appressed or subappressed strigose	subappressed to spreading strigose	spreading hirsute or villous
adaxial	glabrous	spreading strigose	spreading hirsute
abaxial	appressed or subappressed, curved strigose, more densely along veins	spreading strigose	spreading hirsute
margin	apperssed or subappressed, curved strigose	spreading strigose	spreading hirsute
Cymes			
pedicel indumentum	subappressed strigose	subappressed to spreading strigose	spreading hirsute
Corolla			
outside	glabrous	pubescent	pubescent
ovary indumentum	glabrous	glabrous	pubescent

subappressed strigose hairs, ovate bracts and a glabrous pistil. However, it differs from *B. argentea* in possessing foliage with an entire (vs. crenate to dentate or serrate) margin, glabrous (vs. spreading strigose) upper leaf blade surface, and a corolla that is glabrous outside (vs. sparsely pubescent).

Lithophytic, perennial, 5–10 cm tall, rhizomatous. **Rhizome** terete, prostrate or ascending, unbranched, greenish-brown, 1.5–3 cm long, 2–5 mm in diameter, internodes congested. **Leaves** 4–9, petiolate, opposite, decussate; petiole 1.7–5.5 cm long, 2–3 mm in diameter, subterete, densely appressed or subappressed, purplish-red to pale brown strigose (up to 2 mm long); leaf blade succulent, ovate to elliptic-ovate, 3–8 × 1.8–4.2 cm, adaxially dusky green to blackish-green, often with greyish-green stripes on both sides of midrib, foveolate, glabrous except for a narrow (ca. 1 mm) marginal zone densely covered with apperssed or subappressed, curved pale yellowish-brown strigose, 1–2 mm long, abaxial surface whitish-green, scattered appressed or subappressed, curved purplish-red to pale brown strigose (0.3–1.5 mm long), more densely along veins and margins, apex obtuse, base subcordate to rounded, margin entire, lateral veins ca. 6 on each side of median vein, slightly impressed or nearly flat adaxially, prominent abaxially. **Cymes** 1–4 on one stem, axillary, subumbellate, ca. 4-flowered; peduncle olive green tinged purplish-red tint, 5–7 cm long, 1–2 mm in diameter, moderately densely appressed or curved, purplish-red strigose, 1–2 mm long; bracts ovate, green, 3–7 mm across, glabrous adaxially, curved purplish-red strigose abaxially, more densely along midrib and margins; pedicel ca. 1 cm long, creamy white, 1–1.5 mm in diameter, subappressed purplish-red strigose. **Calyx** 5-partite to the base; lobes 5, unequal, divided from nearly base, whitish-green tinged green towards apex, oblong-obovate, strigose on abaxial surface and margins, margin entire, apex rounded to obtuse; adaxial lobes 3 shorter, 2–3 × 1.8–2.2 mm, abaxial ones ca. 3.5 × 2 mm. **Corolla** zygomorphic, very pale blueish-purple, glabrous; tube slightly upright, strongly ampliate towards mouth, ca. 6 mm in diameter at the mouth of horizontal section; adaxial lip 2-lobed, lobes crescent-shaped, rounded at apex, 3–3.3 × 5–5.3 mm; abaxial lip 3-lobed, lateral ones slightly obliquely, oblate, 5–5.5 × 6 mm, central one oblong-oblate, rounded at apex, 4–5 × 4.5–5 mm; tube campanulate, 4–5 mm long, ca. 4 mm in diameter at the middle, at base gradually constricted 2–2.5 mm in diameter of horizontal section; inside of corolla tube abaxially with semicontinuous purple stripes or spots near the base. **Stamens** epipetalous, all fertile, glabrous; filaments creamy white, subequal, slightly geniculate at middle**,** ca. 2.5 mm long, adaxial stamens adnate ca. 0.8 mm above the corolla tube base, abaxial ones adnate at the base; anthers 4 basifixed, cohering together, reniform, 1.5–1.8 × 1.5–1.8 mm, base cordate; staminodes absent. **Pistil** ca. 6 mm long, glabrous; ovary bright green, ellipsoid, unilocular, bicarpellary, ca. 1.5 mm long, 1 mm in diameter, glabrous; style white, ca. 4.5 mm long, ca. 0.5 mm in diameter at the middle, gradually reduced toward apex; stigma capitate. **Capsule** not seen.

Distribution and ecology**:** *Beccarinda nhatii* is currently known only from the type locality in Chien Ken Commune (formerly Nam Tha Commune, Van Ban District), Lao Cai Province, Northwest Vietnam. It grows in remnants of primary evergreen broad-leaved lowland forest, on humus-rich soil in shaded, moist ravines near the middle of steep shale mountain slopes, at elevations of 400–500 m above sea level.

Etymology**:** The specific epithet honors the first discoverer and collector, Mr. Trieu Van Nhat.

Vernacular name**:** *Beccarinda* is rendered in Vietnamese as “Nang cự đài”. In this case, the new species is referred to as “Nang cự đài nhất”.

Proposed IUCN conservation status**:** According to extensive field investigations conducted by Trieu Van Nhat in 2024 and 2025 across mountainous areas of Lao Cai Province, the species was not encountered outside the type locality, suggesting a highly restricted distribution. Moreover, fewer than 50 mature individuals, scattered across no more than 10 clumps, were recorded in the forest where it occurs. These data imply that the species

occupies a narrow ecological niche and may be highly sensitive to microhabitat disturbance. Although the area is currently relatively undisturbed, it is not part of a formally protected zone, and potential threats from future land-use changes, deforestation, or human activity could severely impact the population. Based on the current data on observed population size, limited area of occupancy (AOO), and habitat specificity, *Beccarinda nhatii* is preliminarily assessed as **Critically Endangered** [CR B2ab(iii,V; D)], in accordance with Guidelines for Using the IUCN Red List Categories and Criteria (2024).

***Note*:** Among Vietnamese *Beccarinda* species, it is most similar to *Beccarinda tonkinensis*, but it is different from the latter in its lamina margin entire (*vs*. crenate to dentate), glabrous upper leaf surface except for the margin, which a narrow zone densely covered with appressed or subappressed, curved strigose hairs (*vs*. overall sparse covered with spreading hirsute), and a completely glabrous corolla (*vs*. sparsely pubescent on the outside) and a glabrous ovary (*vs*. hirsute). Notably, although previous literature (Wang *et al*., 1998; Gammi *et al*., 2020) described the ovary of *B. tonkinensis* as glabrous, the type specimen (*Pételot P.A. 704*, P03851859) clearly exhibits a conspicuous indumentum.

The comprehensive comparison of *Beccarinda nhatii*, *B. argentea* and *B. tonkinensis* is presented in Table 1.

Key to the species of *Beccarinda*

1a. Leaf blade margin entire, upper surface glabrous except margin ……..…… ***Beccarinda nhatii***
1b. Leaf blade margin crenate, dentate to serrate, rarely subentire, upper surface hairy …… 2
2a. Peduncle 1.2–4 cm long; leaf blade margin crenulate-serrate to subentire ……..…. 3
2b. Peduncle 5–17 cm long; leaf blade margin crenate to dentate, denticulate, or serrate …….. 4
3a. Petiole 1–4 cm long; leaf blade 1–3.5 × 0.6–2.2 cm ……..…. ***Beccarinda minima***
3b. Petiole 9–16 cm long; leaf blade 6–12.5 × 3.5–10 cm …….. ***Beccarinda griffithii***
4a. Plants with stems 12–20 cm long …… 5
4b. Plants stemless or with stems up to 10 cm long ……. 6
5a. Leaf blade adaxially sparsely pubescent, abaxially densely pubescent along the midrib and lateral veins; Yunnan, China …… ***Beccarinda erythrotricha***
5b. Leaf blade densely hirsute on both surfaces; Sumatra, Indonesia ……..…. ***Beccarinda sumatrana***
6a. Leaf blade adaxially sparsely minutely bristly, abaxially minutely bristly along veins and margin; anthers ca. 2.5 mm long ……..…. ***Beccarinda paucisetulosa***
6b. Leaf blade adaxially hirsute or strigose, abaxially less densely so; anthers ca. 1.5 mm long ……..…. 7
7a. Leaf blade base cordate to deeply cordate …… 8
7b. Leaf blade base rounded to cuneate, rarely subcordate ……..…. ***Beccarinda argentea***
8a. Leaf blade up to 12 × 8.5 cm; calyx lobes puberulent on the outer surface; corolla outside puberulent ……..…. ***Beccarinda tonkinensis***
8b. Leaf blade up to 7 × 5 cm; calyx lobes glabrous or subglabrous on the outer surface, except along the margin; corolla outside glabrous …… ***Beccarinda cordifolia***

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