

64. NERTERA Banks ex Gaertner, Fruct. Sem. Pl. 1: 124. 1788, nom. cons.

薄柱草属 bao zhu cao shu

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Erythrodanum Thouars; *Gomozia* Mutis ex Linnaeus f.

Herbs, perennial, unarmed, sometimes fetid when bruised, often creeping and rooting at nodes. Raphides present. Leaves opposite, without domatia, marginally usually thickened and sometimes crisped; stipules persistent, interpetiolar and fused to petioles, triangular or bidentate. Inflorescences terminal and/or pseudoaxillary, 1-flowered, sessile or shortly pedunculate, ebracteate or sometimes with small involucre of bracts fused in pairs (i.e., calyculate) or of reduced stipules and leaves. Flowers bisexual, homostylous. Calyx limb truncate, 4-lobed, or reduced. Corolla greenish white, white, or pink, funnelform, glabrous inside; lobes 5, valvate in bud. Stamens 4, inserted near base of corolla tube, exerted; filaments developed; anthers basifixed. Ovary 2- or 4-celled, ovules 1 in each cell on axile placentas; stigmas 2 or 4, linear, exerted. Fruit orange, red, or black, drupaceous, ovoid or globose, fleshy, with calyx limb persistent; pyrenes 2 or 4, 1-celled, each with 1 seed, plano-convex, cartilaginous; seeds medium-sized, ellipsoid to plano-convex; testa membranous; endosperm scanty; cotyledons leaflike; hypocotyl hypogenous.

About six species: Antilles, Australia, Central, North, and South America, China, Indonesia, Malaysia, Pacific islands, Papua New Guinea, Philippines, Subantarctic islands (Tristan da Cunha), Vietnam; three species (one endemic) in China.

Phylogeography of the most widespread species *Nertera granadensis* (as *N. depressa*) was studied by Jakubowksy et al. (Evolution of *Nertera*. Poster presented at XVII IBC. 2005) using molecular data; they concluded that this species originated in New Zealand, where *Nertera* has its center of diversity, and dispersed independently to Australia, the Philippines, then SE Asia and Hawaii, and then Central and South America and eastward. They also suggested that *N. nigricarpa* may be better included within the circumscription *N. granadensis*, although species identity and circumscription were not the primary focus of their work so their sampling many not be adequate to address this. *Nertera nigricarpa* is distinguished primarily by its black rather than red mature fruit and was synonymized with *N. granadensis* by Liu and Yang (Fl. Taiwan, ed. 2, 4: 306. 1998), without comment; however, these species were separated by W. C. Ko in FRPS (71(2): 162–165. 1999). If these populations are treated as conspecific, this represents the only example known in *Nertera* of such fruit color dimorphism, which is known but uncommon in Rubiaceae. *Nertera nigricarpa* is provisionally separated here pending further study.

Liu and Yang (loc. cit.) and W. C. Ko (loc. cit.) described the flowers as bisexual or unisexual, but other authors reported the flowers of *Nertera* to be bisexual (e.g., Fosberg, Acta Phytotax. Geobot. 33: 73–83. 1982; Andersson, Fl. Ecuador 47: 11–12. 1993).

- 1a. Leaf blade oblong-lanceolate to elliptic, cuneate to acute at base and apex, abaxially with surface uneven due to swollen cells, on dry specimens appearing scurfy; fruit with 4 pyrenes 3. *N. sinensis*
- 1b. Leaf blade ovate, broadly ovate, ovate-triangular, or ovate-reniform, acute to obtuse or broadly rounded at apex, abaxially generally smooth; fruit with 2 pyrenes.
 - 2a. Leaves acute to obtuse at apex; fruit red 1. *N. granadensis*
 - 2b. Leaves obtuse to broadly rounded at apex; fruit black 2. *N. nigricarpa*

1. *Nertera granadensis* (Mutis ex Linnaeus f.) Druce, Rep. Bot. Soc. Exch. Club Brit. Isles 1916: 637. 1917.

红果薄柱草 hong guo bao zhu cao

Gomozia granadensis Mutis ex Linnaeus f., Suppl. Pl. 129. 1782; *Nertera depressa* Banks & Solander ex Gaertner; *N. taiwaniana* Masamune.

Creeping herbs; stems angled, glabrescent. Petiole slender, 2–4 mm, glabrescent; leaf blade drying papery and often pale abaxially, ovate or ovate-triangular, 0.3–1 × 0.2–0.8 cm, glabrescent, generally smooth abaxially, base obtuse to shallowly cordate, apex acute to obtuse; secondary veins 2 or 3 pairs; stipules ovate-triangular, 0.5–1 mm, glabrescent, apex acute and often glandular. Flowers sessile or subsessile. Calyx glabrous; ovary portion ellipsoid, ca. 1 mm; limb reduced. Corolla white to pale green, glabrous; tube 0.5–1 mm; lobes ca. 1 mm. Drupes red, subglobose, 3–5 mm in diam.; pyrenes 2.

Hillsides at middle elevations. Taiwan [Indonesia, Malaysia, Papua New Guinea, Philippines; Australia, Central America (Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama), North America

(Mexico), Pacific islands (Hawaii, New Zealand), South America (Argentina, Bolivia, Chile, Colombia, Ecuador, Peru, Venezuela), Subantarctic islands (Tristan da Cunha)].

See comments under the genus regarding the distinction of this species from *Nertera nigricarpa*. No specimens have been seen from China during the preparation of this treatment that correspond to *N. granadensis*, separately from *N. nigricarpa*; thus, its presence in China remains to be confirmed and the placement of the name *N. taiwaniana* remains to be confirmed. Puff et al. (Rubiaceae of Thailand, 210. 2005) reported that *N. granadensis* has been recorded for Thailand, but they found no specimens nor the source of that report.

This species has often been called *Nertera depressa*, the type of the genus; however, *Gomozia granadensis* is an older name for this species and thus has priority over the epithet “*depressa*,” so the correct name is *N. granadensis*.

2. *Nertera nigricarpa* Hayata, J. Coll. Sci. Imp. Univ. Tokyo 25(19): 115. 1908.

黑果薄柱草 hei guo bao zhu cao

Creeping herbs; stems quadrate, glabrous. Petiole 1–8 mm,

Fl. China 19: 257–258. 2011.

glabrous; leaf blade drying papery, broadly ovate or ovate-reniform, $0.25\text{--}1 \times 0.3\text{--}1.1$ cm, glabrous, generally smooth abaxially, base rounded to truncate or cordulate then abruptly attenuate, apex obtuse to broadly rounded; secondary veins 2 or 3; stipules broadly triangular, 1–1.3 mm, glabrous, acute and often glandular. Flowers sessile. Calyx glabrous; ovary portion ovoid, ca. 1 mm; limb truncate to denticulate, 0.1–0.2 mm. Corolla probably pale green, urceolate-funnelform, glabrous; tube ca. 1 mm; lobes triangular, ca. 0.4 mm. Drupes black, ellipsoid to subglobose, 4–4.5 in diam., glabrous; pyrenes 2. Fl. Feb–Jul, fr. Mar–Jan.

Sparse forests, open fields; 900–2500 m. Fujian, Taiwan [Vietnam (Averyanov *et al.* *VH 427*, MO!)].

See comments under the genus description regarding the relationship of this species to *Nertera granadensis*. This is apparently the first report of this species from Vietnam.

3. *Nertera sinensis* Hemsley, J. Linn. Soc., Bot. 23: 391. 1888.

薄柱草 bao zhu cao

Low herbs, with main stems creeping and reproductive stems erect, to 10 cm tall; stems angled, glabrous. Petiole 1–3 mm, glabrous; leaf blade drying papery, oblong-lanceolate to elliptic, $0.7\text{--}1.6 \times 0.35\text{--}0.5$ cm, glabrous or sparsely hispidulous on both surfaces, abaxially rough due to enlarged thin-walled cells that dry with scurfy appearance, base cuneate to acute, margins hispidulous, apex acute to cuneate; secondary veins not visible; stipules narrowly triangular, 0.8–1 mm, obtuse to acute or aristate and usually glandular. Flowers sessile. Calyx glabrous; ovary portion 1–1.5 mm; limb truncate, 0.1–0.2 mm. Corolla pale green, funnelform, glabrous; tube ca. 1 mm; lobes triangular, ca. 0.5 mm, acute to obtuse. Drupes dark blue to black, subglobose, 2–6 mm in diam.; pyrenes 4. Fl. Jul–Aug, fr. Jul–Nov.

• Mountain slopes, roadsides, ditch sides, rocks at riversides; 500–1300 m. Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangxi, Sichuan, Yunnan.

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