

## Notes on the Flora of Taiwan (31) — *Shortia* (Diapensiaceae)

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**ABSTRACT:** This is a precursory note of the Family Diapensiaceae for the Flora of Taiwan, volume four. Special attention is paid to the revision of the taxonomic rank. One species and four varieties of *Shortia* are recognized in Taiwan: *S. rotundifoila* (Maxim.) Makino var. *rotundifoila*, var. *ritoensis* (Hayata) T.-C. Huang & A. Hsiao, var. *subcordata* (Hayata) T.-C. Huang & A. Hsiao, and var. *transalpinia* (Hayata) Yamazaki. Two varieties are treated under new combinations, *i. e.* var. *ritoensis* (Hayata) T.-C. Huang & A. Hsiao, **comb. nov.** and var. *subcordata* (Hayata) T.-C. Huang & A. Hsiao **comb. nov.**

**KEY WORDS:** *Shortia*, New Taxa, Revision, Taiwan,.

### INTRODUCTION

The following new taxonomic treatment is followed by the requirement of International Code of Botanical Nomenclature Articles 29 to 32 (Greuter *et al.*, 1994).

Since the second edition of the Flora of Taiwan, volume 4 is planning to put into print at the end of this year, we are treating the genus *Shortia* with our best at this moment, even more materials are necessary to draw a better treatment of the genus.

In this study, the results are based mainly on field observaion and examination of herbarium specimens kept in TAI. The features of leaves are found useful to identify taxa within this genus in Taiwan (Fig. 1).

### TAXONOMIC TREATMENT

#### SHORTIA Torrey & A. Gray

Evergreen perennial subshrubs with creeping branched rhizomes; leaves radical or rosulately arranged at end of stem, longpetiolate, orbicular to cordate, undulately toothed; flowers solitary or in raceme, erect, with bracts along pedicels; calyx 5-lobed, lobes ovate to oblong, persistent; corolla-lobes 5, campanulate to infundibuliform, obtusely toothed to lacinate, undulate to crenate; anthers dorsally attached, filaments short or none; staminodes, when present, linear to scale-like; ovary globose, 3-locular; style filiform; stigma obscurely 3-lobed; ovules numerous in each cell; capsule globose, dehiscent, 3-lobed, surrounded by persistent calyx; seeds many, globose-ovoid, testa reticulate.

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The genus *Shortia* originally contains six species in eastern Asia and North America (Scott & Day, 1983). In this paper, we treat it as five species, because we consider *S. exappen-diculata* Hayata is conspecific with *S. rotundifolia* (Maxim.) Makino. Therefore, one species and four varieties are found in Taiwan.

### Key to varieties

- 1. Leaves attenuate at base
  - 2. Leaves undulate or serrate
    - 3. Leaves undulate ..... 1. var. *rotundifolia*
    - 3. Leaves serrate ..... 2. var. *ritoensis*
  - 2. Leaves entire ..... 4. var. *transalpina*
- 1. Leaves cordate or round at base ..... 3. var. *subcordata*

**1. *Shortia rotundifolia*** (Maxim.) Makino in Bot. Mag. Tokyo **9**: 327. 1895; Matsumura & Hayata in Fl. Mant. Formos. p. 156. 1908; Yamazaki in J. Jap. Bot. **43**(3): 87. 1968; and in Fl. Jap. IIIa: 3. 1993.

*Schizocodon rotundifolius* Maxim. in Bull. Acad. Imp. Sci. St.-Pét. **32**: 497. 1888.

*Shortia exappendiculata* Hayata, Icon. Pl. Form. **3**: 146. pl. 27. 1913; Huang in Fl. Taiwan **4**: 1. pl. 892. 1978.

*Shortiopsis exappendiculata* (Hayata) Hayata, Icon. Pl. Form. **4**: 18. 1914.

Perennial herbs, 3–17 cm tall, glabrous, often branched. Leaves round-ovate, round to elliptic, 0.7–5 cm long, 0.8–5.5 cm wide, apex round or truncate, base attenuate or obtuse, margin undulate; petiolate, petiole 0.8–9 cm long. Flowers solitary, pedicellate, pedicels 2.5–13 cm long, bracteate, bracts sparsely arranged, 2–8 lobed, lobes narrowly triangular, 4–7 mm long, 1–2 mm wide; calyx 5-lobed, lobes ovate to oblong, ca. 8 mm long, ca. 5 mm wide, acute, persistent; corolla white, 1–1.5 cm long, lobes ca. 0.8 cm long, rectangular, truncate and crenulate at apex; anthers yellow, 2-celled, filaments extremely short or none; stami-nodes absent; style ca. 0.3 cm, persistent; stigma obscurely 3-lobed. Capsule 5 mm long. Seeds many, reddish; testa reticulate.

The Ryukyus, Taiwan. Taiwan, 1,000–3,000 m throughout the island, in forests.

#### 1. var. *rotundifolia*

倒卵葉裂緣花

*Shortia rotundifolia* (Maxim.) Makino f. *rotundifolia* : Yamazaki in J. Jap. Bot. **65**(10): 317. 1990.

Plants 3–15 cm tall. Leaves round-ovate or round, (0.8–)1.5–5 cm long, (0.5–)0.8–5.5 cm wide, apex rounded or truncate, base attenuate or obtuse, margin undulate; petiolate, petiole 1.5–9 cm long. Flowers solitary, pedicellate, pedicels 4–13 cm long, bracteate, bracts 3–5, lobes narrowly triangular, 6 mm long, 1.5 mm wide; calyx lobes ovate to oblong, 8 mm long, 5 mm wide.

Taiwan, 1,000–3,000 m in mountains in the central and northern part of the island.

ILAN: Taipingshan, *Huang* 4777; Dayuanshan, *Kao* K3129. HSINCHU: Yuanyanghu, *Kuo* 8462. TAICHUNG: Pahsienshan, *Chuang* 2745; Campus of NCHU, *Wang et al.* 454. NANTOU: Kuankao, *Huang et al.* 5300. HUALIEN: Mukwashan, *Liu et al.* 231. TAITUNG: Guayhu, *Hsu s. n.* 1967.

**2. var. ritoensis** (Hayata) T.-C. Huang & A. Hsiao, **comb. nov.**

李棟山裂緣花

*Shortia ritoensis* Hayata, Icon. Pl. Form. 4: 17. 1914.

Plants 4–8 cm tall. Leaves round-ovate to elliptic, 0.8–2 cm long, 0.8–1.5 cm wide, apex round or truncate, base attenuate, margin serrate; petioles 0.8–4 cm long. Flowers solitary, pedicels 3–4 cm long; bracteate, bracts 3 or 4, narrowly triangular, 4 mm long, 1 mm wide; calyx lobes ovate to oblong, 8 mm long, 5 mm wide.

Taiwan, 1,500–3,000 m in the central and eastern mountains.

HSINCHU: Litungshan, *Kawakami s. n.* 1914. (Type, TAIF). TAICHUNG: Pahsienshan, *Huang* 1344. NANTOU: Shanlinhsi, *Huang et al.* 374. HUALIEN: Tarokodaisan, *Sasaki s. n.* 1933. TAITUNG: Chipen, *Suzuki* 11080; Wushan, *Hosokaawa* 5336.

**3. var. subcordata** (Hayata) T.-C. Huang et A. Hsiao, **comb. nov.**

圓葉裂緣花

*Shortia subcordata* Hayata, Icon. Pl. Form. 3: 143. 1913.

Plants 5–17 cm tall. Leaves ovate to round, (1.5–)3–5(–7) cm long, (1.5–)3–5(–7) cm wide, apex round, base cordate to round, margin undulate, sometimes entire or serrate; petioles (2–)4–9(–11) cm. Flowers solitary, pedicellate, pedicels white to pink, 6–13 cm long, bracteate, bracts 3–8, narrowly triangular, 7 mm long, 2 mm wide, white or pale pink; calyx lobes ovate, 6–7 mm long, 4–6 mm wide, persistent; corolla white, 1.2 cm long, 1.3–1.5 cm in diameter, margin serrate, tubular at base, 5-lobed, tube 0.4–0.6 mm long, lobes 0.3–0.4 mm long; stigma capitate or slightly 3-lobed.

Taiwan, 1,000–3,000 m throughout the island, in forests.

TAIPEI: Wulai, *Kao* 8645. ILAN: Shenmihu, *Hsu* 0581, *Huang et al.* 13408, *Huang et al.* 17006. TAOYUAN: Beichatienshan, *Kuo* 2645. HSINCHU: Yuanyanghu, *Huang* 5493. NANTOU: Chiti, *Kao* 7244. TAITUNG: Tapu, *Chen* 6105. HUALIEN: Mukwashan, *Nakamura* 4659

**4. var. transalpina** (Hayata) Yamazaki in J. Jap. Bot. **65**(10): 318. 1990

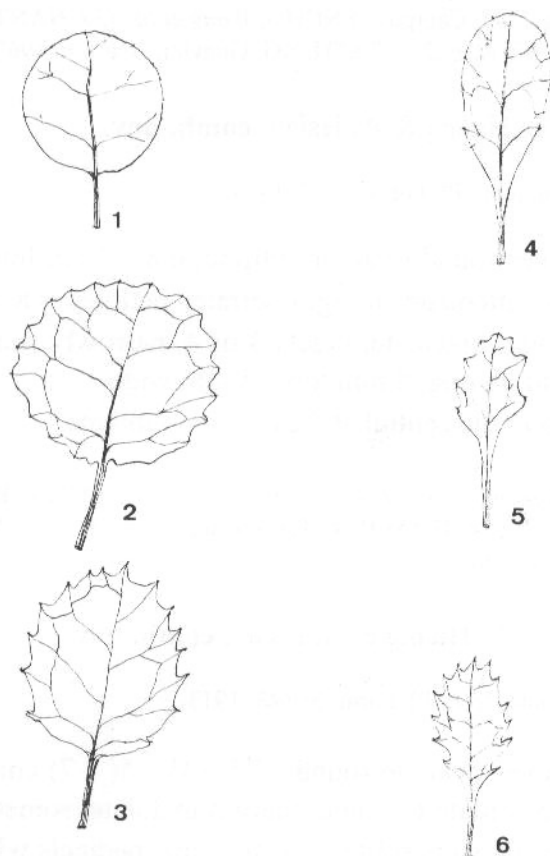
高山裂緣花

*Shortia transalpina* Hayata, Icon. Pl. Form. 3: 147. 1913.

*Shortia rotundifolia* (Maxim.) Makino f. *transalpina* (Hayata) Yamazaki in J. Jap. Bot. **43**(3): 87. 1968.

Plants 5–10 cm tall. Leaves round-ovate to obovate, (0.5–)0.7–1.2(–2) cm long, (0.3–)0.5–1(–1.5) cm wide, apex round, base attenuate, margin nearly entire; petioles (1–)2–3(–5) cm long. Flowers solitary, pedicellate, the pedicels 2.5–6.5 cm long, bracteate, bracts 2 or more, narrowly triangular, 4 mm long, 1 mm wide; calyx 5-lobed, ovate to oblong, 8 mm long, 5 mm wide, persistent.

1,500–3,000 m in the central and southern part of the island, in forests.



Figs. 1-6. Leafy variation of *Shortia rotundifolia* (Maxim.) Makino; 1-3. var. *subcordata* (Hayata) T.-C. Huang and A. Hsiao, with cordate or rounded base of blade; 4. var. *transalpina* (Hayata) Yamazaki, with entire leafy margin; 5. var. *rotundifolia*, with undulate leafy margin; and 6. *ritoensis* (Hayata) Huang & Hsiao with serrate leafy margin. Magnification 1, 3, 4, 5,  $\times 1$ ; 2,  $\times 0.7$  and 6,  $\times 2$ .

HSINCHU: Dabachienshan, *Suzuki 583*. NANTOU: Yushan, *Tamura et al. 22092*. KAOHSIUNG: Tawushan, *Masamune s. n. 1930*, *Huang et al. 13724*; Takuanshan: *Huang et al. 347*. TAITUNG: Chipen, *Hsu 3311*; HUALIEN: Mukwashan, *Kao 4132*.

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## 臺灣植物誌之觀察(31)－裂緣花(裂緣花科)

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### 摘 要

本文提出台灣產裂緣花科裂緣花屬的分類位階訂正，並附有插圖以辨識四個變種。台灣產裂緣花屬植物計有一種四變種，即倒卵葉裂緣花、李棟山裂緣花、圓葉裂緣花及高山裂緣花。其中二變種為新組合的分類群，亦即李棟山裂緣花 (*Shortia rotundifoila* (Maxim.) Makino var. **ritoensis** (Hayata) T.-C. Huang & A. Hsiao, **comb. nov.**) 與圓葉裂緣花 (var. **subcordata** (Hayata) T.-C. Huang & A. Hsiao, **comb. nov.**)。

關鍵詞：裂緣花、新分類群、訂正、台灣。

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