

DIPLAZIOPSIDACEAE

肠蕨科 chang jue ke

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Plants medium-sized or large, usually in forests near or beside streams. Rhizomes decumbent to erect, thick. Lamina 1-pinnate, imparipinnate, with pinnae entire, glabrous; veins free on either side of midrib, fully anastomosing toward margins and forming 2–4 rows of areoles, without included free veinlets. Sori elongate along long veins close to midrib, covered by a similarly elongate, membranous indusium; indusia usually 3–8 mm, sometimes up to 1–2 cm, arched, sausage-shaped. Spores with winglike fimbriate and echinate folds, or low perforate plain folds. $x = 41, 40$ or 31 .

Three genera and five species: tropical America, tropical, subtropical, and temperate Asia; one genus and three species in China.

Based on molecular evidence (R. Sano et al., *Molec. Phylogen. Evol.* 15: 403–413. 2000; Wei et al., *Acta Bot. Yunnan.*, suppl. 17: 46–54. 2010), the family Diplaziopsidaceae consisting of *Diplaziopsis* and *Homalosorus* Small ex Pichi Sermolli (and provisionally *Hemidictyum* C. Presl) was proposed by X. C. Zhang and Christenhusz (*Phytotaxa* 19: 15. 2011).

Chu Wei-ming & He Zhao-rong. 1999. *Diplaziopsis*. In: Chu Wei-ming, ed., *Fl. Reipubl. Popularis Sin.* 3(2): 499–504.

1. DIPLAZIOPSIS C. Christensen, Index Filic. 227. 1906.

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Plants terrestrial, medium-sized. Rhizome robust and ascending or erect, with sparse scales; scales dark brown, broadly lanceolate, entire, thick; fronds caespitose. Stipe herbaceous, upward glabrous, deeply grooved on adaxial side; lamina imparipinnate, elliptic; lateral pinnae 1–10 pairs, alternate, sessile, lanceolate, base symmetrical, rounded-truncate, margin entire or slightly repand, apex acuminate or caudate; costae robust, shallowly grooved adaxially; veins anastomosing with 2–4 rows of polygonal areoles without included veinlets, marginal areoles smaller, vein endings free, submarginal, or connected by submarginal veinlets. Sori linear along veinlets, often single, rarely double from base to near margin; indusia inframedial or subcostal, gray, then black-brown when mature, sausage-shaped, thick, membranous when young, open acropically or often irregularly ruptured on back side. Spores semicircular, perispore hyaline, with multilayered, broadly rugate, marginally rugate, aculeate projections. $x = 41$.

Three species: tropical, subtropical, and temperate Asia; three species in China.

- 1a. Veinlets 2-furcate near costa, rarely at costa; sori subcostal from near costa to below middle of pinna; pinnae lanceolate, apex acuminate 1. *D. cavaleriana*
1b. Veinlets 2-furcate at costa, rarely near costa; sori subcostal from near costa to middle of pinna; pinna apex acuminate or caudate.
2a. Pinnae, especially lower pinnae, broadly lanceolate-elliptic or suboblong, apex often considerably narrowed and caudate, basal pinnae shortened 2. *D. brunoniana*
2b. Pinnae lanceolate, acuminate at apex, basal pinnae not shortened 3. *D. javanica*

1. *Diplaziopsis cavaleriana* (Christ) C. Christensen, Index Filic., Suppl. 1906–1912: 25. 1913.

川黔肠蕨 chuan qian chang jue

Allantodia cavaleriana Christ, *Bull. Acad. Int. Géogr. Bot.* 16: 243. 1906; *Diplaziopsis intermedia* Ching; *D. javanica* (Blume) C. Christensen subsp. *cavaleriana* (Christ) Nakaike; *D. javanica* var. *cavaleriana* (Christ) Tagawa; *Diplazium cavalerianum* (Christ) M. Kato.

Rhizome erect, short, apex like base of stipe, with few brown lanceolate scales; fronds caespitose. Fertile fronds up to 1.2 cm; stipe stramineous or green-stramineous when dry, 25–45 cm, 2–3 mm in diam., upward glabrous; lamina broadly lanceolate, 35–70 × 15–20 cm at middle, base often slightly narrowed; lateral pinnae 4–15 pairs, alternate, sessile or shortly

stalked, slightly ascending, oblong-lanceolate, apex acuminate; basal 1–3 pairs of pinnae often reduced, ovate or narrowly ovate; middle pinnae subcontiguous, 8–15 × 1.5–3 cm, base broadly cuneate or subtruncate, margin entire; apical pinnae larger than lateral pinnae, similar, base asymmetrical; veins anastomosing with 2 or 3 rows of oblique long hexagonal areoles. Lamina green or yellow-green when dry, pale on abaxial surface. Sori thick, linear, 5(–8) mm, often from near costa to near or below middle of pinna; indusia brown, sausage-like, opening acropically or ruptured on back side when mature, persistent. $2n = 164$.

Broad-leaved forests in valleys; 1000–1800 m. Chongqing (Nanchuan, Qijiang), Fujian (Wuyi Shan), Guizhou (Chishui, Fanjing Shan, Huishui), Hubei (Xianfeng), Jiangxi (Jinggangshan), Sichuan (Daxiangling, Emei Shan), Yunnan, Zhejiang (Suichang) [Bhutan, NE India, Japan, Nepal, Vietnam].

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2. *Diplaziopsis brunoniana* (Wallich) W. M. Chu, Acta Bot. Yunnan. 16: 127. 1994.

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Allantodia brunoniana Wallich, Pl. Asiat. Rar. 1: 44. 1830; *Asplenium brunonianum* (Wallich) Mettenius; *Diplaziopsis hainanensis* Ching.

Rhizome erect, apex like base of stipe, with brown, entire, lanceolate scales; roots long, wiry, fleshy; fronds caespitose. Fertile frond up to 1.5 m; stipe black-brown at base, upward brown, 15–40 cm, 2–5 mm in diam., glabrous; lamina elliptic, 15–100 × 15–35 cm; lateral pinnae 1–14 pairs, alternate or subopposite, base sessile or slightly adnate to rachis, obliquely ascending, elliptic, broadly lanceolate, or suboblong, 11–20 × 2.5–5.5 cm, base rounded-cuneate or shallowly cordiform, margin entire, apex abruptly narrowed to caudate (tail up to 2.5 cm); apical pinnae similar to lateral pinnae, often large, ca. 23 cm, base often asymmetrical, stalk up to 2 cm; basal pinnae short; veins prominent, anastomosing with 2–4 rows of areoles, 2-furcate at costa, rarely near costa, oblique, vein endings free inframarginally or connected by inframarginal veinlets. Lamina submembranous when dry, dark green adaxially, green abaxially. Sori thick, linear, up to 1.5 cm, close to costa, ca. 4 mm apart, borne on acroscopic vein of 2-furcate vein, basispic veinlet sterile; indusia sausage-shaped, thick but thinly membranous when young, wrapping all sporangia, ruptured irregularly from back surface or opening acroscopically, persistent.

Guizhou (Chishui), Hainan, Taiwan, Yunnan [India, Nepal, Philippines, Vietnam].

Many authors treat *Diplaziopsis brunoniana* as a synonym of *D. javanica* (e.g., Christenhusz et al., Phytotaxa 19: 48. 2011). *Diplaziopsis hainanensis* is based on a tiny specimen of *D. brunoniana*.

3. *Diplaziopsis javanica* (Blume) C. Christensen, Index Filic. 227. 1905.

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Asplenium javanicum Blume, Enum. Pl. Javae 2: 175. 1828; *Allantodia javanica* (Blume) Trevisan; *Diplazium javanicum* (Blume) Makino.

Rhizome erect, apex like base of stipe, with brown, entire lanceolate scales; roots wiry, fleshy, long; fronds caespitose. Fertile fronds more than 1 m; stipe brown, up to 70 cm, up to 7 mm in diam. Lamina broadly lanceolate, ca. 75 × 30 cm; lateral pinnae up to 12 pairs, ascending, lanceolate, up to 18 × 4 cm, base broadly cuneate or subtruncate, asymmetrical, pinna stalk ca. 1 cm, margin entire, slightly irregularly repand, apex long acuminate or slightly shortened; veins prominent on both surfaces, anastomosing with 2 or 3 rows of areoles, 2-furcate at costa, rarely above costa, slightly ascending, distal veins free, ending inframarginally or connected by inframarginal veinlets. Lamina dark green adaxially, pale (light) green abaxially, submembranous when dry. Sori linear or sausage-shaped, up to 1 cm, thick, often borne on acroscopic vein of 2-furcate vein, basispic vein sterile; indusia thick, membranous, opening acroscopically, persistent.

Taiwan (Gaoxiong) [Indonesia, Malaysia, Sri Lanka; Pacific islands (Polynesia, Tahiti)].

F. G. Dickason (Ohio J. Sci. 46: 124. 1946) recorded *Diplaziopsis javanica* in “The Ferns of Burma”; possibly, it is *D. brunoniana*.