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广东常山，广东绣球花科一新种

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摘要：首次发现并描述了中国广东省的绣球花科(Hydrangeaceae)常山属(*Dichroa*)一新种：广东常山(*D. fistulosa*)。该种具有空心的茎，这在常山属中是唯一的。该种与海南常山(*D. mollissima*)相似，但可以通过其叶上的毛被来区分。该种亦与菲律宾常山(*D. philippinensis*)相似，但其叶的形状及锯齿明显不同。

关键词：常山属；广东常山；绣球花科；广东省；新种

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Dichroa fistulosa (Hydrangeaceae), A New Species from Guangdong, China

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Abstract: One new species, *Dichroa fistulosa* from Guangdong Province, China, is described and illustrated, which belongs to genus *Dichroa*, Hydrangeaceae. The species possesses hollow stems, which is unique in the genus. It resembles *D. mollissima*, but can be distinguished by its indumentum of leaves. It is also similar to *D. philippinensis* in gross appearance, but the shape and serration of leaves are quite different.

Key words: *Dichroa*; *Dichroa fistulosa*; Hydrangeaceae; Guangdong Province; New species

Dichroa Lour. of tribe Hydrangeae (Hydrangeaceae), comprising about 12 species, is mainly distributed in mainland Southeast Asia and the adjacent islands, with 6 species occur in China[1–3]. Some species of this genus have ornamental values in garden. However, except for the widely distributed species of *D. febrifuga* Lour., this group of plants have been poorly collected, and a taxonomic revision is thus needed.

Tentatively *Dichroa* was divided into two sections by the number of stamens, sect. *Dichroa* and sect. *Silvicola* S. M. Huang. Sect. *Dichroa* was further split into two series based on the characteristics of the ovary, ser. *Dichroa* and ser. *Mollissimae* S. M. Huang[1,4].

In June 2016 and January 2017, the first two authors found an unusual population of Hydrangeaceae in Yangchun City, Guangdong Province. The inflorescence of this species only contains fertile flowers, and the fruits are blue berries, which suggest its affiliation of genus *Dichroa*. The flower of the species contains 10 stamens and semi-inferior ovaries, which show the characteristics of ser. *Mollissimae* of sect. *Dichroa*. The plants are here described as a new species, *Dichroa fistulosa* G. H. Huang & G. Hao.

The morphological description of the new species was based on careful examination of the type specimens. The comparison between it and the morphologically related species (*D. febrifuga*, *D. mollissima* Merr., *D. philippinensis* Schltr., *Hydrangea kwangsiensis* Hu and *H. stenophylla* Merr. et Chun)

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was performed on studies of the herbarium materials in IBSC.

Dichroa fistulosa G. H. Huang & G. Hao, **sp. nov.** Figures 1 and 2.

Type: China, Guangdong, Yangchun City, Bajia Town, Ehuangzhang Nature Reserve, alt. 609 m, June 14, 2016, G. H. Huang 160091 (holotype, IBSC; isotype, CANT).

Diagnosis: *Dichroa fistulosa* is similar to *D. mollissima*, but differs by its glabrous or sub-glabrous leaf blade. It is also similar to *D. philippinensis*, but the shape and serration of leaves are different.

Shrubs 0.5–2 m tall. Stem erect or sub-scandent, fistular. Branchlets green in first year, become white in the second year, glabrous, bark peeled off when old. Leaves opposite, petiole 0.8–2 cm, sparsely pubescent; leaf blade narrowly elliptic to lanceolate or oblanceolate, 6–20 cm×1.5–5 cm, papery, glabroussadaxially, glabrous or sub-glabrous abaxially; secondary veins 5–8 on each side of midvein, base cuneate, margin sparsely serrate distally from middle, apex acuminate to caudate. Inflorescence a corymbose cyme, 3–6 cm×2–5 cm, with 10–30 flowers; peduncle 1–4 cm, sparsely pubescent; pedicel 3–5 mm, sparsely pubescent. Calyx tube cupular, ca. 1.5 mm, pubescent; lobes 5, ovate, 0.7–1.2 mm, glabrous, apex acute to acuminate. Petals purple or deep blue, with

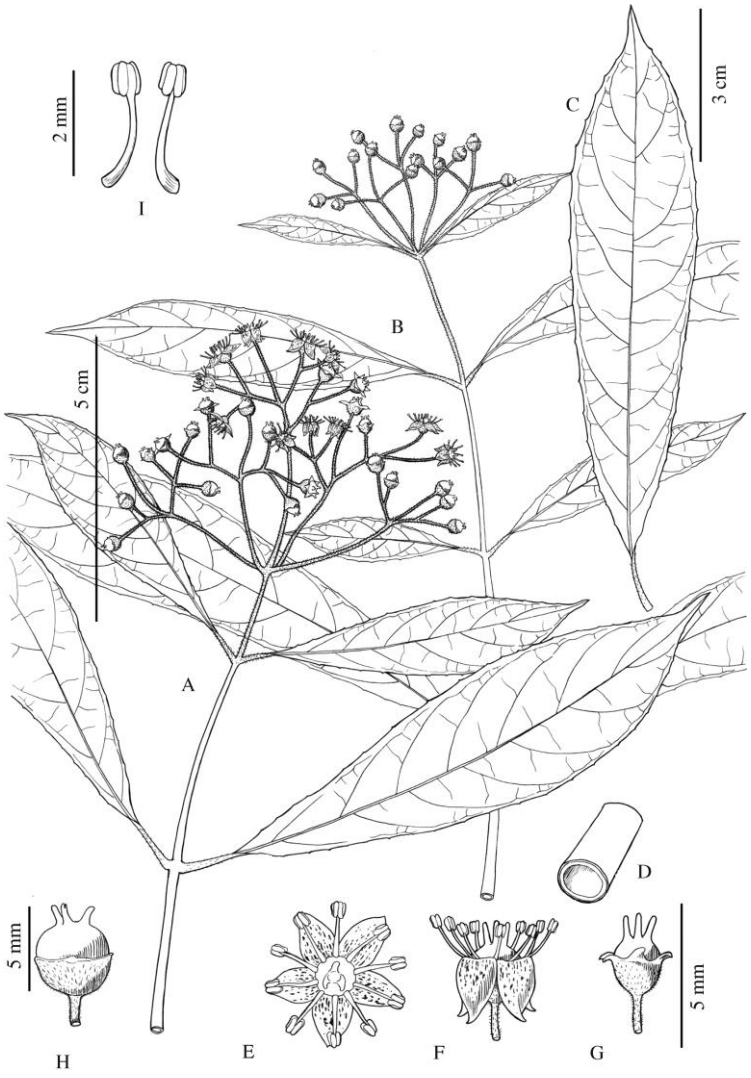

Fig. 1 *Dichroa fistulosa*. A: Flowering branchlet; B: Branchlet with young fruit; C: Leaf; D: Transverse plane of the stem; E: Frontal plane of the flower; F: Profile plane of flower; G: Flower without petals and stamens; H: Berry; I: Stamens. (Drawn by Li-hua Liu from the holotype)

Fig. 2 *Dichroa fistulosa.* A: Habit, showing white stems; B: Fruiting branchlet; C: Flowering branchlet; D: Leaf abaxially; E: Leaf adaxially; F: Transverse plane of stem; G: Frontal plane of flower; H: Flower without petals and stamens; I: Profile plane of berries; J: Frontal plane of berry. (Photographed by Ge-han Huang)

deep purple spot, ovate, ca. 2.5 mm, glabrous, apex acute. Stamens 10; filaments filiform, 2−2.5 mm; anthers ovoid-ellipsoid. Ovary semi-inferior. Styles 3(−4), robust, 1−1.5 mm; stigma small. Berry blue, subglobose, ca. 6 mm, pubescent or glabrous. Seeds ellipsoid. Flowering from May to June, fruiting from December to January.

Distribution and habitat: *Dichroa fistulosa* is presently known from the central and western Guangdong Province, e.g., Yangchun, Zhaoqing, Jiangmen and Huidong Cities. It grows at wet area under forests or by roadsides, at altitude of 400−700 m.

Etymology: The epithet *fistulosa* refers to the hollow, pipe-like stems of the new species.

Additional specimens examined (paratypes): China. Guangdong: Yangchun City, Bajia Town, Ehuangzhang Nature Reserve, alt. 620 m, Jan. 12, 2017, G. H. Huang & X. K. Yan 170001 (IBSC, CANT); Yangchun City, Bajia Town, alt. 650 m, Aug. 1, 2001, H. G. Ye 6132 (IBSC); Zhaoqing City, Dinghu Mountain, Aug. 31, 1978, G. L. Shi 13691 (IBSC); Jiangmen City, Xinhui District, Gudou Mountain, May 29, 1985, Z. X. Li et al. 2386 (IBSC).

Taxonomic remarks: In traditional angiosperm classification systems[5–6], Tribe Hydrangeeae of Hydrangeaceae includes 9 morphologically diverse genera, i.e., *Hydrangea* L., *Deinanthe* Maxim., *Cardiandra* Sieb. & Zucc., *Dichroa*, *Broussaisia* Gaudich., *Schizophragma* Sieb. & Zucc., *Pileostegia* Hook. f. & Thoms., *Decumaria* L., and *Platycrater* Sieb. & Zucc. Recent molecular phylogenetics[7–9] revealed that eight of those genera are phylogenetically nested within *Hydrangea*, rendering the latter highly polyphyletic. A broader circumscription of the genus *Hydrangea* was therefore proposed[8], to comprise all eight satellite genera of the tribe. Genus *Dichroa* was consequently reduced to a section, sect. *Dichroa*, of *Hydrangea*. On the other side, Ohba and Akiyama[10] argued to rescue the traditional genera delimited by Engler[5] since it was easy to distinguish

these genera by their morphological features, habit ecological preferences. So generic segregation of most of the sections and subsections of *Hydrangea* by Engler[5] was again proposed[10], according to the tree by De Smet et al.[9].

Considering the monophyly and its easily recognizable attributes of *Dichora* differing from *Hydrangea* and other genera, the proposal of Granados et al.[8] is regarded not consummate enough, alternative treatment might be expected. We thus echo Ohba and Akiyama[10] and maintain the definition of genus *Dichroa* temporarily.

In *Dichroa*, *D. fistulosa* is allied to *D. mollissima*, but is distinguished easily by its glabrous or sub-glabrous leaf blade. It also resembles *D. philippinensis*, but the shape and the serration of leaves are quite different. Additionally, its hollow stem is distinct from all other *Dichroa* species. *Dichroa fistulosa* and its allies can be distinguished from one another by the following key.

Key to *Dichroa fistulosa* and similar species

1. Ovary inferior to 3/4; styles 4–6 ····· *D. febrifuga*
   Ovary semi-inferior; styles (2–)3(–4) ····· 2
2. Leaf blade densely pubescent on both surfaces or abaxially ····· 3
   Leaf blade glabrous or sub-glabrous on both surfaces ····· 4
3. Leaf blade densely villous abaxially, glabrous adaxially ····· *D. mollissima*
   Leaf blade crisped pubescent on both surfaces ····· *D. yunnanensis*
4. Leaf shape elliptic to oblong, length 2–3 times the width, margin densely serrate above middle ····· *D. philippinensis*
   Leaf shape narrowly elliptic to lanceolate or oblanceolate, length 4–5 times the width, margin sparsely serrate above middle ····· *D. fistulosa*

The plants without fruits of the new species are similar to some species of genus *Hydrangea* superficially, such as *H. kwangsiensis* or *H. stenophylla*, but the fleshy blue berries and the inflorescence without sterile flowers show the marked distinction between those two genera. Some paratypes of the new species, e.g., H. G. Ye 6132 (IBSC), G. L. Shi 13691 (IBSC) and Z. X. Li et al. 2386 (IBSC) were formerly misidentified as *H. kwangsiensis*.

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