



## A new *Disporopsis* (Asparagaceae) transferred from *Polygonatum*

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The recent description of a *Disporopsis* Hance (1883: 278) (Asparagaceae), *D. fansipanensis* J.M.H.Shaw, B. Wynn-Jones & V.D.Nguyen in Shaw (2013: 27), from Vietnam and adjacent SW China is a superfluous name for a species that has long resided as a synonym of *D. pernyi* (Hua 1892: 472) Diels (1900: 249). The above cited authors provided a description, but did not provide a comparative diagnosis to which species he thought that it was most similar to, though he did say that *D. fansipanensis* probably accounted for the treatment of *D. pernyi* in Vietnam (Liang & Tamura 2000). Experience with living collections of both species and collections of *D. fansipanensis* at MO and PE (acronym following Thiers 2015) reveal that it is not synonymous with *D. pernyi*, but has an older available name.

Comparisons of living accessions of *Disporopsis fansipanensis* to the syntypes of *Polygonatum bodinieri* Léveillé (1903: 262), which originate from near Guyian, Guizhou epitomize *D. fansipanensis* in all pertinent morphological characters. Current taxonomic treatments place *P. bodinieri* in synonymy with *D. pernyi* (Liang & Tamura 2000). While morphology of the perigone of *P. bodinieri* makes it clear that it is a species of *Disporopsis*, its morphology is unlike that of *D. pernyi*. It has a distinctly moniliform rhizome in contrast to the terete rhizome of *D. pernyi*, and a shorter perigone with oblanceolate lobes rather than lanceolate lobes. Furthermore, the lobes are purple-brown maculate over a white-green base and not concolorous (white-green) like those of *D. pernyi*. Morphological comparisons of *D. fansipanensis* and the type material of *P. bodinieri* show that they share the same rhizome morphology, leaf shape, and the size and morphology of the perigone. Thus, the earlier name has priority and is formally transferred to *Disporopsis* (Art. 11.4 McNeill *et al.* 2012). Two syntypes were cited, *Bodinier 1597* and *1597 bis*. In accordance with Art. 9.2 and 9.11 (McNeill *et al.* 2012), a lectotype is chosen here.

### Taxonomic treatment

#### *Disporopsis bodinieri* (H.Lév.) Floden *comb. nov.*

Bas.: *Polygonatum bodinieri* Léveillé (1903: 262). Type (lectotype, designated here):—CHINA. Kouy-Tcheou [Guizhou]; Environs de Kouy-yang. Mont du Collège. Montagne de Lou-tsang-Koan, à l'entrée de la grotte de Ke-matong, 26 May 1898, *R.P. Bodinier 1597 bis* (lectotype, P00687145!, isolectotype, PE00136451!).

= *Disporopsis fansipanensis* J.M.H.Shaw, B. Wynn-Jones & V.D.Nguyen in Shaw (2013: 27). Type:—VIETNAM. Lao Cai, *BSWJ 12277*, northern Vietnam, Fan-si-pan, 3000 m on ridges (holotype WSY!).

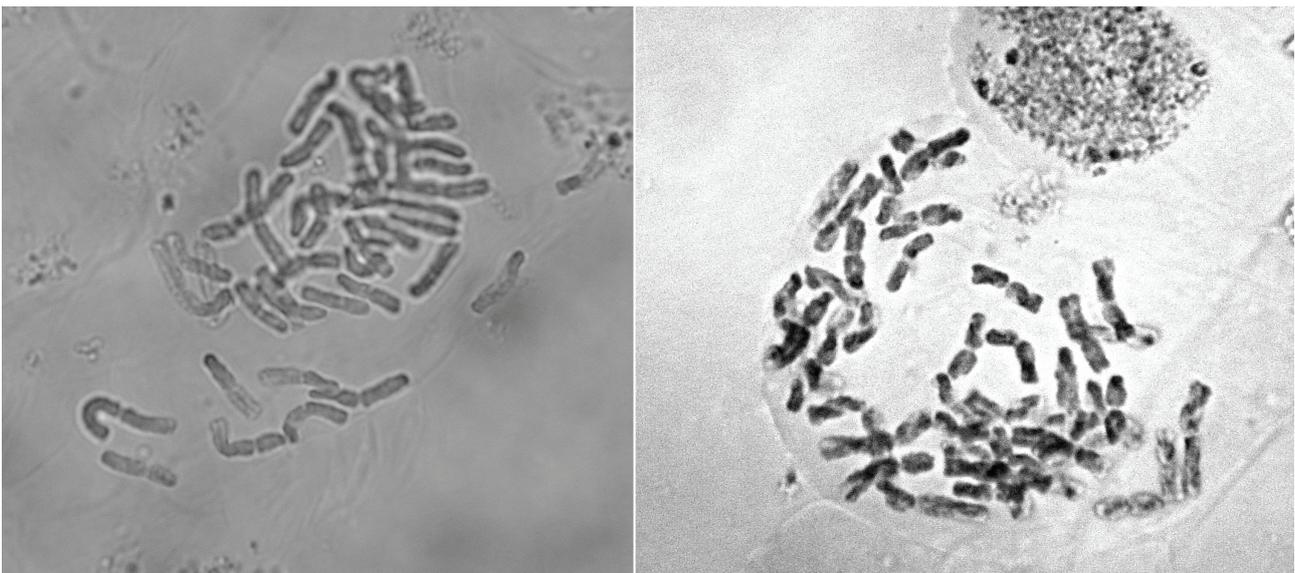
**Chromosome number:**— $2n = 2x = 40$  (Fig. 1).

**Distribution:**—China (Guangxi, Guizhou, Yunnan) and Vietnam (Lai Chau, Lao Cai). The distribution of this species follows an arc along the southern edge of the Yungui Plateau from northern Vietnam through Yunnan and into NW Guangxi and into Guizhou around Guyiang. It is uncommon to rare at higher elevations.

**Specimens examined:**—CHINA. s.l., 1914, *M. Cavalerie s.n.* (P00038286!); Guangxi: [24.6812301, 105.3346717], 22 September 1983, *J.Y. Liang 1249* (IBK 00195507!); Guizhou: s.l., *s. coll. 50873* (PE 00136331!); Lou Tsong Koan (1500), à l'entrée de la grotte de la grenouille, endroits toujours humides et ne voyant presque pas le soleil, endroits toujours humides et ne voyant presque pas le soleil, 1 June 1897, *Em. Bodinier 1597* (P00687144!, P0038287!, PE00136332!); Yunnan: s.l., *Delavay 4996* (PE 00136345!); Mengze, N Mts., 6000 ft., *A. Henry 9387* (MO!, NY!); Songming Xian, ca. 48.5 km N of Kunming. Moist ravines and drier slopes with remnant broad-leaved

evergreen, *Keteleeria*, *Pinus* forest. Elevation ca. 2100 m., 25°22'N, 102°45', on moist stream banks, 28 July 1984, 1984 Sino-Amer. Bot. Exped. No 1390 (NY!); VIETNAM. Lai Chau Province, Tam Duong Distr., Ho Thau Comm. Ho Thau village, 22.422222, 103.603611, 7 Dec 2006, N.T. Hiep, L.V. Averyanov, and P.V. HAL10445 (MO!); Lao Cai Province, Fanxipu, 2800 m near peak in stunted cloud forest on mossy rocks, 28 October 2011, A. Floden, T. Mitchell, and B. Wynn-Jones 1868 (TENN!); Silver Waterfall, 22°23'10.82"N, 103°45'19.01"E, seepy slope, on rocks, rare; ca. 2400 m, 10 November 2011, A. Floden, T. Mitchell, and B. Wynn-Jones 1924 (TENN!).

**Taxonomic relationships:**—Many of the specimens of *Disporopsis bodinieri* cited above bear the annotation “*D. fusco-picta* Hance” by Wang & Tang and these plants do share the presence of a moniliform rhizome and relatively large perigone of that species. Initially, my morphological examinations suggested that *D. bodinieri* was synonymous with *D. fuscipicta* Hance (1883: 278) and not with *D. pernyi*, the latter of which has a long terete rhizome and shorter perigone lobes without any maculation on either surface of the tepals. Nonetheless, field observation in Vietnam and molecular comparison of the nuclear ribosomal ITS (unpublished data) supports *D. bodinieri* as distinct from the more eastern *D. fuscipicta* which does not occur in western Guangxi or Guizhou, nor is it documented from Sichuan or Yunnan. Also, the structure of the rhizome differs from the thick moniliform rhizome of *D. fuscipicta* in that each segment of the rhizome is somewhat tear-drop shaped with a pointed and curved, but truncate apex. The leaf shape of *D. bodinieri* is lanceolate and usually has undulate margins whereas *D. fuscipicta* has ovate leaves and is usually not undulate, though some specimens are distinctly undulate. Additional observations of morphology of *D. bodinieri* were not fully enumerated by Shaw (2013). He did not provide a petiole length in his description, but my own living collections and examined specimens (including the syntypes of *D. bodinieri*) show a range of sessile leaves to petioles approaching 1 cm in length. In addition to the petiole characters, L veill  (1903) noted the obvious cross-veinlets in the leaves of this species, and he also provided a thorough description of the perigone in which he stated the lobes are brown-purple maculate on both surfaces. The images provided by Shaw (2013) and observations of my own cultivated plants show both surfaces clearly maculate in dark purple spots (though not all individuals are maculate on the abaxial surface), but the description provided in regards to the corona is lacking details. The color and shape of the perigone lobes appear much like *D. fuscipicta* though smaller in size (12–15 vs. 15–22 mm). Given the subtle vegetative differences between some species in *Disporopsis*, delimitation between these is aided by the morphology of the perigone. These characters include whether the lobes are longer than or equal to the tube length, the shape of the lobes, the color (or lack thereof), and the characters of the internal corona-like structure (Tamura & Ogisu 1998, Liang & Tamura 2000). The corona, which was interpreted by Hua (1892) as an expansion and dilation of the filaments, is six-lobed, and has connectives that extend beyond the anthers. The corona of *D. bodinieri* is opposite the perigone lobes and the corona lobes are bifid and obtuse unlike the lanceolate 2–3-denticulate lobes of *D. fuscipicta* (Liang & Tamura 2000).



**FIGURE 1.** Somatic chromosome count of *Disporopsis bodinieri* from root tips of plants cultivated by the author,  $2n = 2x = 40$ , Floden *et al.* 1924 (TENN), protocol following Floden (2014).

## Acknowledgements

I thank Dr. T. Mitchell, B. Wynn-Jones, and B. Olsen for living material, the staff at their respective herbaria (HUH, IBK, MO, NY, P, & PE), and Uoc Le Huu for field assistance in Vietnam.

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