

Additions to fern flora of Hong Kong, China

YAN Yue-hong^{1,2,4}, Sai-Chit Ng³, XING Fu-wu^{1*}

(1. South China Institute of Botany, the Chinese Academy of Sciences, Guangzhou 510650, China;

2. Graduate School of the Chinese Academy of Sciences, Beijing 100039, China; 3. Kadoorie

Farm & Botanic Garden, Hong Kong, China; 4. School of Life Sciences, Hunan

University of Science and Technology, Xiangtan 411201, China)

Abstract: In recent field survey in Hong Kong, six newly recorded species of ferns, *Ctenitopsis kusukuensis*, *Colyssis digitata*, *Dryopteris dehuaensis*, *Lindsaea orbiculata* var. *commixta* and *Lycopodium clavatum*, were found, including two newly recorded genera, *Ctenitopsis* and *Lycopodium*. And moreover, essential description and difference from relative species of each species are provided.

Key words: ferns; flora; Hong Kong; new records

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Hong Kong, located at 22°09'~22°37' N and 113°52'~114°30' E, consists of Hong Kong Island, Kowloon, the New Territories, and 235 other Islands, of which the largest one is Lantau Island (148 km²). The total land area is 1 098 km². Hong Kong's flora is diverse for its island geography. The earliest survey on Hong Kong plants may be in 1841 (Bentham, 1861) and the Hong Kong plants have been well studied since then (Bentham, 1861; Dunn *et al.*, 1912; Edie, 1978; Gibbs, 1927; Hance, 1872; Lee *et al.*, 1999, 2002a, 2002b, 2003; Ng, 2002; So, 1994; Xing *et al.*, 1997, 1999; Wu *et al.*, 2000). At least 1911 flowering plant species and 242 fern species (including species and infraspecific taxa) have been reliably recorded from Hong Kong (Corlett *et al.*, 2000; Lee *et al.*, 2003), most of which are Pan-tropical and tropical Asian plants (Xing *et al.*, 1999). The Hong Kong Herbarium (1974, 1978, 1993, 2001) had ever published the checklist of Hong Kong plants for four times. The updated publication (Lee *et al.*, 2003) shows that 242 fern species in 96 genera and 47

families have been recorded in Hong Kong.

During 2002 and 2003, a systematical and wide field survey on Hong Kong ferns was carried out, and all fern specimens in Hong Kong Herbarium (HK) and Herbarium of South China Institute of Botany, the Chinese Academy of Sciences (IBSC), are examined by the authors. Five ferns as follows are added to the fern flora of Hong Kong, including two newly recorded genera.

Aspidiaceae

1 *Ctenitopsis kusukuensis* (Hayata) C. Chr. ex Tard. -Blot et C. Chr. 台湾轴脉蕨 in Lecomte, Not. Syst. 7: 87. Oct. 1938. Ching in Bull. Fan Mem. Inst. Biol. Bot. Ser. 8: 315. Nov. 1938; Flora Reipublicae Popularis Sinicae 6(1): 50. 1999. — *Dryopteris kusukuensis* Hayata, Icon. Pl. Form. 4: 157, f. 98. 1914 et 6; Suppl. 107. 1916.

China, Hong Kong. New territories, Shatin, under forest near stream in valley behind Shatin Water

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Biography: YAN Yue-hong (1974-), male, Ph. D. study on pteridophytology and biodiversity, E-mail: <yan.yh@126.com>.

* Author for correspondence, E-mail: <xinfw@scib.ac.cn>.

Treatment Works(S. C. Ng 3796, IBSC), alt. 120 m.

Distribution: China (Hainan Island, Taiwan) and Vietnam.

Notes. The genus *Ctenitopsis* mostly distributes in tropical and subtropical Asia, southeastwards to Malaysia and Polynesia, northern to Japan and westwards to Madagascar and East Africa (Tsai *et al.*, 1994). It is a newly recorded genus to Hong Kong. The species is common in Hainan Island and Taiwan, while it has not been recorded from mainland of China. The disjunction distribution of this species among Hainan, Hong Kong and Taiwan is very interesting.

Polypodiaceae

2 Colysis digitata (Baker) Ching 掌叶线蕨 in Bull. Fan Mem. Inst. Biol. **4**: 328. 1933. Ching, Ic. Fil. Sin. **4**: 198. pl. 198. 1937; Ching *et al.* in W. Y. Chun, Fl. Hainan. **1**: 185. fig. 88. 1964; *Flora Reipublicae Popularis Sinicae* **6**(2): 255. pl. 56: 1-5. 1999. — *Gymnogramme digitata* Baker, J. Bot. 267. 1890; C. Chr., Ind. Fil. 335. 1905.

China, Hong Kong. New Territories, near stream in valley of Lam Tsuen (F. W. Xing 7146, 10060, IBSC), alt. 300 m.

Distribution: China (Guangdong, Hainan, Hunan, Guangxi, Yunnan, Guizhou, Chongqing, Sichuan) and Vietnam.

Notes. There are four species of *Colysis* in Hong Kong (Lee *et al.*, 2003). This species is distinctly different from others by the 3 (5)-palmated fronds. Lee *et al.* (2003) had treated it as doubtful species in recent publication because they could not ensure the identification a specimen from Mt. Taimoshan. The specimens we examined are integrated and characterized by theirs 3-palmated fronds. The distribution of this species in Hong Kong is undoubted.

Dryopteridaceae

3 Dryopteris dehuaensis Ching et Shing 德化鳞毛

蕨 in Fl. Fujian. **1**: 209, 601. f. 197. 1982; R. J. Johns, Ind. Fil. Suppl. **6**: 133. 1996. *Flora Reipublicae Popularis Sinicae* **5**(1): 212. pl. 36: 1-3. 2000 — *Dryopteris gushanica* Ching et Shing in Fl. Fujian **1**: 209, 601. 1982; R. J. Johns, Ind. Fil. Suppl. **6**: 136. 1996. syn. nov. — *Dryopteris neosordidipes* Ching ex Shing et J. F. Cheng in Journ. Sci. Jiangxi **8**(3): 48. 1990.

China, Hong Kong. New Territories. It is rare in forest near stream in valley at Mt. Taimoshan (F. W. Xing 10045, IBSC), alt. 400~500 m.

Distribution: Endemic to China (Fujian, Hunan, Jiangxi and Zhejiang).

Notes. The species is very similar to *D. varia* that widely distributes in Hong Kong (Wu *et al.* 2000), but the basal petiolule of the former is obviously longer, and the sori without indusium is smaller than the latter.

Lindsaeaceae

4 Lindsaea orbiculata Mett. ex Kuhn var. **commixta** (Tagawa) Shieh 海岛鳞始蕨 in Quart. Journ. Chin. For. **6**(4): 102. 1973 & in Fl. Taiwan **1**: 264. 1975. — *L. commixta* Tagawa Acta Phytotax. et Geobot. **5**: 37. f. 3 H-J. 1937. *Flora Reipublicae Popularis Sinicae*. **2**: 268. 1959.

China, Hong Kong. New Territories, rare under forest at Wujiaoteng (F. W. Xing 7152, 9818. IBSC), alt. 300 m.

Distribution: China (Fujian, Guangdong, Guangxi, Hainan, Jiangxi, Sichuan, Taiwan, Yunnan, Zhejiang), Japan, Vietnam, Thailand.

Notes. It is about 25 cm tall, bipinnate, terminal segments non-deltoid. It is similar to *Lindsaea orbiculata*, but the former is characterized by its bipinnate fronds. It is rich in Mt. Wutongshan in Shenzhen where is on the north of Hong Kong.

Lycopodiaceae

5 Lycopodium clavatum L. 石松 in Sp. Pl. **2**: 1101. 1753; Tsai in Fl. Taiwan (2nd) **1**: 31. pl. 4. 1994.

China, Hong Kong. New Territories, rare in shrubs at the peak of Mt. Taimoshan (Y. H. Yan 607, IBSC), alt. 800-900 m.

Distribution: Widely distributed in the temperate and alpine regions of the tropics.

Notes. This species is very similar to *Palhinhaea cernua* in Hong Kong, but it could be obviously distinguished from the latter by the creeping main stems, numerous long and erect branches and sporangium spike. *Lycopodium* is a newly recorded genus to current checklist of Hong Kong ferns (Hong Kong Herbarium, 2001; Lee *et al.*, 2003).

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香港蕨类植物新记录

严岳鸿^{1,2,4}, 吴世捷³, 邢福武^{1*}

(1. 中国科学院 华南植物园, 广东 广州 510650; 2. 中国科学院 研究生院, 北京 100093; 3. 香港嘉道理农场暨植物园, 中国 香港; 4. 湖南科技大学 生命科学学院, 湖南 湘潭 411201)

摘要: 报道了香港蕨类植物新记录种 5 种, 即台湾轴脉蕨(*Ctenitopsis kusukuensis*)、掌叶线蕨(*Colysis digitata*)、德化鳞毛蕨(*Dryopteris dehuaensis*)、海岛鳞始蕨(*Lindsaea orbiculata* var. *commixta*)和石松(*Lycopodium clavatum*), 其中包括两个新记录属: 轴脉蕨属(*Ctenitopsis*)和石松属(*Lycopodium*)。另外, 还列出了每个种的重要特征及其与相关种类的差异。

关键词: 蕨类植物; 区系; 香港; 新记录