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Rediscovered ferns from Hong Kong, China

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Abstract

In recent field surveys in Hong Kong, four ferns, *Trichomanes auriculatum*, *Hypolepis punctata*, *Cyrtomidictyum basipinnatum* and *Chieniopteris kempii*, were rediscovered after about one hundred years.

Hong Kong (22°09'- 22°37' N, 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 1098 km². The topography is extremely rugged, and the highest point is at Tai Mo Shan (957 m) in the central New Territories. The climate of Hong Kong has typical south subtropical characteristics. Hong Kong's flora is diverse for its island geography and 1911 flowering plant species and 242 fern species (including infraspecific taxa) have been reliably recorded from Hong Kong (Corlett *et al.* 2000; Lee *et al.*, 2003), most of which are pantropical and tropical Asian plants (Xing *et al.* 1999).

The earliest reported survey of Hong Kong plants was in 1841 (Bentham, 1861) and the Hong Kong ferns have been well studied since then. The Hong Kong Herbarium (2001) has published the Checklist of Hong Kong Plants four times. The most recent checklist (Lee *et al.*, 2003) shows that 242 fern species in 96 genera and 47 families have been recorded in Hong Kong.

There have been great changes in the environment, vegetation and species of Hong Kong since the Opium Wars (Corlett, 1999; Dudgeon & Corlett, 1994). Although documented extinctions of species are few, it is certain that some species have disappeared from Hong Kong because of the massive human impacts. Complete deforestation at low altitudes must have resulted in the loss of a substantial fraction of Hong Kong's native flora in the past (Dudgeon & Corlett, 1994). In recent evaluations, 57 species of ferns, 4 gymnosperms and 339 angiosperms are considered as locally extinct or very rare: 19% of the total recorded vascular plant flora. An additional 15% are considered rare. Twenty-one species of ferns were not seen during recent surveys (Corlett *et al.* 2000). However, in our recent surveys on the biodiversity of Hong Kong during 1996 to 2002, four fern species were rediscovered 100 years after they were first collected.

Chieniopteris kempii (Cop.) Ching, *Acta Phytotax. Sinica*. 9 (1): 39. 1964.

Illustration. Wu (1999): p. 208-210. fig. 36: 6.

Distribution. China (Fujian, Guangdong, Guangxi and Taiwan) and Japan.

Specimens examined. Very rare under forest near stream on Mt. Taimoshan (F. W. Xing 10078, in IBSC)

Notes. Only one specimen of this species was collected from Taimoshan in Hong Kong in 1899 (Hong Kong Herbarium, 2001) and it was considered as very rare. This is the first collection since 1899 in Hong Kong. This species is 40 cm tall and bipinnatifid in Hong Kong.

Cyrtomidictyum basipinnatum (Baker) Ching in *Acta Phytotax. Sinica*. 6: 262. pl. 51. 1957 (Fig. 1 and 2).

Illustration. Ching (1957): p. 262. fig. 51. Xie (2001): p. 219-220.

Distribution. Endemic to China (Guangdong and Hong Kong).



Fig. 1. Top side view of *Cyrtomidictyum basipinnatum* – a rediscovered fern from Bride's Pool.

Specimens examined. Rare on the wet stone wall under the fall at Bride's Pool. (Y. H. Yan 640, IBSC), altitude 150m.

Notes. Only one specimen of this species was collected from Mt. Nicholson on Hong Kong Island in 1906 (Hong Kong Herbarium, 2001) and it was considered as very rare in Hong Kong. This is the first collection since 1906 in Hong Kong.



Fig. 2. Underside view of *Cyrtomidictyum basipinnatum*.

Hypolepis punctata (Thunb.) Mett., Kuhn, Fil. Afri. 120. 1868.

Illustration. Shiew (1994): p. 156. fig. 60.

Distribution. Ceylon, Central and S. China, Himalayas, India, Indo-China, Japan, S. Korea, Malaya peninsula and Taiwan.

Specimens examined. Common along the roadside at the top of Mt. Taimoshan. (Y. H. Yan 605, IBSC), alt. 900m.

Notes. Only one specimen of this species was collected from Taimoshan in 1907 (Hong Kong Herbarium, 2001) and it was considered as very rare in Hong Kong. It is nearly one hundred years since it was last collected in Hong Kong. In our survey, a population of this species with more than 500 plants was founded at the mountaintop of Taimoshan. It is under the threat of heavy human disturbance because of its roadside location and numbers of tourists.

Trichomanes auriculatum Blume, Enum. Pl. Jav. 225. 1828.

Illustration. Tsai & Shieh (1994): p. 129. fig. 49.

Distribution. Widely distributed in China (Guangdong, Guangxi, Guizhou, Hainan, Jiangxi, Sichuan, Taiwan, Yunnan and Zhejiang), Himalayas, India, Indonesia, Japan, Malaysia, Micronesia, Ryukyu and Vietnam.

Specimens examined. Very rare on the tree or moist rocks near stream on Lantau Peak (Yan. H. H. 696, IBSC), alt. 700 m.

Notes. Only one specimen of this species was collected from Taimoshan in Hong Kong in 1907 (Hong Kong Herbarium, 2001) and it was considered as very rare in Hong Kong. It is very rare and only 5 plants were found. There are two species in *Trichomanes*, and the other species, *T. orientale*, is characterized by 3-pinnatifid fronds with longer stipes.

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It has now been approximately 6 months since the ceremony held at SWIMS to celebrate its renovation in December 2003. Since this event, and the upheavals of the renovation, we have finally been able to get down to the primary function of SWIMS – research. Students have adapted the aquarium to establish experiments. Over the last few months there have been a number of star species in the aquarium – notably the octopus and their babies; the burrowing *Austinoergia* (mudshrimp), bamboo sharks and their eggs, and also the echinoderms in the touch tank which recently featured in the nature column of Ming Pao.