

YI-SHAN CHAO

Curriculum Vitae, Jan. 2020

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Education

M. S., Biological Sciences: January 2004

Department of Biological Sciences, National Sun Yat-Sen University, Taiwan

Thesis: A taxonomic study on Lentibulariaceae of Taiwan

Ph.D., Biological Sciences: January 2010

Department of Biological Sciences, National Sun Yat-Sen University, Taiwan

Dissertation: A systematic study of the *Pteris cadieri* complex

Research Experience

2014 - present Assistant Professor

Department of Biomedical Science & Environmental Biology, Kaohsiung Medical University, Taiwan

2013 Assistant research fellow

The Experimental Forest, National Taiwan University, Taiwan

2012 Postdoctoral research fellow

Division of Botanical Garden, Taiwan Forestry Research Institute, Taiwan

2011 Postdoctoral research fellow

Department of Biological Sciences, National Sun Yat-Sen University, Taiwan

2010 Postdoctoral research fellow

Department of Life Science, National Pingtung University of Science and Technology, Taiwan

2008 Research assistant

Division of Botanical Garden, Taiwan Forestry Research Institute, Taiwan

Expedition

August 2019 Sarawak, Malaysia

December 2018 Vietnam

March 2017 Macau, Hong Kong

June 2016 Chiang Mai, Thailand

April 2015 Malaysia Malay Peninsula, Sabah, Malaysia

July 2014 Guizhou, China

March 2014 Bogor Botanical Garden, Indonesia

March, July 2012 Kyushu, Iriomote Island, Japan

February 2012 Hainan Island, China
 October 2009 Vietnam
 October 2008 Ryukyu, Iriomote, Japan
 November 2007 Mindanao, Philippines
 July-August 2007 Guangdong, Fujian, Hainan Island, Yunnan, China

Publication (*corresponding author)

1. Tian-Chuan Hsu, Yu-Fang Huang, Yi-Shan Chao*. 2019. Systematics of *Hymenophyllum* subg. *Mecodium* (Hymenophyllaceae) in Taiwan. *Systematic Botany* 44(4): 753-767.
2. Chao, Yi-Shan*, Yu-Fang Huang, Shi-Yong Dong, Yao-Moan Huang, Ho-Yih Liu. 2019. *Bolbitis lianhuachihensis* (Dryopteridaceae), a new species from Taiwan. *PhytoKeys* 131: 69-81.
3. Kuo, Li-Yaung, Tian-Chuan Hsu, Yi-Shan Chao, Wei-Ting Liou, Ho-Ming Chang, Cheng-Wei Chen, Yao-Moan Huang, Fay-Wei Li, Yu-Fang Huang, Wen Shao, Pi-Foung Lu, Chien-Wen Chen, Yi-Han Chang*, Wen-Liang Chiou*. 2019. Updating Taiwanese pteridophyte checklist: a new phylogenetic classification. *Taiwania* 64:367-395.
4. Chao, Yi-Shan*. 2019. New record of *Pteris esquirolii* in Taiwan, with two similar new species, *Pteris rugosifolia* and *Pteris subesquirolii*. *Systematic Botany* 44 (2): 274–281.
5. Chao, Yi-Shan*, Yao-Moan Huang. 2018. Spore morphology and its systematic implication in *Pteris* (Pteridaceae). *PLOS ONE* 13(11): e0207712.
6. Dong, Shi-Yong*, Cheng-Wei Chen, Shi-Shi Tan, Hui-Guo Zhao, Zheng-Yu Zuo, Yi-Shan Chao, and Yi-Han Chang. 2018. New insights on the phylogeny of *Tectaria* (Tectariaceae), with special reference to *Polydictyum* as a distinct lineage. *Journal of Systematics and Evolution* 56 (2): 139-147.
7. Chao, Yi-Shan, Andi Maryani A. Mustapeng, Cheng-Wei Chen, Wen-Liang Chiou*. 2017. *Pteris borneensis* (Pteridaceae), a new species from Borneo, with re-circumscription of *Pteris decrescens* and *Pteris parviloba*. *Systematic Botany* 42(4):1-9.
8. Chao, Yi-Shan, Atsushi Ebihara, Wen-Liang Chiou, Yao-Moan Huang*. 2017. *Pteris latipinna* sp. nov. (Pteridaceae), a new species segregated from *Pteris fauriei*. *Phytokeys* 85: 95–108.
9. Fujiwara, Tao, Ayumi Uehara, Tsukasa Iwashina, Sadamu Matsumoto, Yi-Han Chang, Yi-Shan Chao, and Yausyuki Watano*. 2017. Allotetraploid cryptic species in *Asplenium normale* in the Japanese Archipelago, detected by chemotaxonomic and multilocus genotype approaches. *American Journal of Botany* 104(9): 1–17.
10. Chen, Cheng-Wei, Stuart Lindsay, Li-Yaung Kuo, Christopher R. Fraser-Jenkins, Atsushi Ebihara, Hong Truong Luu, Chong Wook Park, Yi-Shan Chao*, Yao-Moan Huang*, and Wen-Liang Chiou. 2017. A systematic study of East Asian vittarioid ferns (Pteridaceae: Vittarioideae). *Botanical Journal of the Linnean Society* 183:545-560.
11. Hsu, Tinan-Chuan, Zhi-Hao Chen, Yi-Shan Chao*. 2017. New additions of the bladderworts (Lentibulariaceae) in Taiwan. *Taiwania* 62 (1): 99–104.
12. The Pteridophyte Phylogeny Group (including Yi-Shan Chao). 2016. A community-derived classification for extant lycophytes and ferns. *Journal of Systematics and Evolution* 54(6): 563-603.

13. Dong, Shi-Yong, Zheng-Yu Zuo, Yi-Shan Chao, Kipiro Damas, Bernard Sule. 2016. New species of the fern genus *Lindsaea* (Lindsaeaceae) from New Guinea with notes on the phylogeny of *L.* sect. *Synaphlebium*. PLOS ONE 11(10): e0163686.
14. Chao, Yi-Shan, Ho-Yih Liu, and Wen-Liang Chiou*. 2015. Taxonomic revision of the *Pteris cadieri* complex (Pteridaceae). Phytotaxa 230: 130-150.
15. Ding, Hui-Hui (equal contributor), Chao, Yi-Shan (equal contributor), Callado, John Rey, Dong, Shi-Yong*. 2014. Phylogeny and character evolution of the fern genus *Tectaria* (Tectariaceae) in the Old World inferred from chloroplast DNA sequences. Molecular Phylogenetics and Evolution 80: 66-78.
16. Chao, Yi-Shan, Germinal Rouhan, Victor B. Amoroso, and Wen-Liang Chiou*. 2014. Molecular phylogeny and biogeography of the fern genus *Pteris* (Pteridaceae). Annals of Botany 114 (1): 109–124.
17. Kao, Tzu-Tong, Wen-Liang Chiou, Yuan-Hsu Sheng, Chun-Ming Chen, Yi-Shan Chao, Yao-Moan Huang*. 2014. Hybrid Origins of *Nephrolepis ×hippocrepicis* Miyam. (Nephrolepidaceae). The International Journal of Plant Reproductive Biology 6: 1-14.
18. Ebihara, Atsushi*, Narumi Nakato, Sadamu Matsumoto, Yi-Shan Chao, and Li-Yaung Kuo. 2014. Cytotaxonomic studies on thirteen ferns of Taiwan. Bulletin of the National Science Museum. Series B 40: 19-28.
19. Chao, Yi-Shan, Atsushi Ebihara, Yi-Han Chang, Ri-Hong Jiang, Lu Thi Ngan, and Wen-Liang Chiou*. 2013. New distribution of *Pteris kawabatae* Sa. Kurata and re-circumscription of *Pteris arisanensis* Tagawa. Taiwania 58: 305-310.
20. Ding, Hui-Hui, Yi-Shan Chao, and Shi-Yong Dong*. 2013 Taxonomic novelties in the fern genus *Tectaria* (Tectariaceae). Phytotaxa, 122: 61-64.
21. Chao, Yi-Shan, Ya-Nan Wang, Chieh-Ting Wang*. 2012. A DNA barcode for forest. Journal of the Experimental Forest of National Taiwan University 26: 299-304.
22. Chao, Yi-Shan, Shi-Yong Dong, Yu-Chung Chiang, Ho-Yih Liu, and Wen-Liang Chiou*. 2012. Extreme multiple reticulate origins of the *Pteris cadieri* complex. International Journal of Molecular Sciences 13: 4523-4544.
23. Chao, Yi-Shan, Yi-Han Chang, Lu Thi Nga, Do Van Truong, Ho-Yih Liu, and Wen-Liang Chiou*. 2012. Different ploids of *Pteris grevilleana* Wall. ex Agardh var. *ornata* Alderw. (Pteridaceae) in Taiwan and Vietnam. Taiwania, vol. 57: 278-282.
24. Chao, Yi-Shan, Ho-Yih Liu, Yu-Chung Chiang, and Wen-Liang Chiou*. 2012 Polyploidy and speciation in the *Pteris* (Pteridaceae). Journal of Botany, vol. 2012, Article ID 817920, 7 pages.
25. Dong, Shi-Yong*, R. Mujahidin, Ling-Ling Wei, Yi-Shan Chao. 2012. A new species of *Asplenium* sect. *Thamnopteris* (Aspleniaceae) from Indonesia. Blumea 57: 190-194.
26. Ju, Li-Ping (equal contributor), Chia-Chi Kuo, Yi-Shan Chao (equal contributor), Yu-Pin Cheng, Xun Gong, and Yu-Chung Chiang*. 2011. Microsatellite primers in the native perennial cycad, *Cycas taitungensis* (Cycadaceae). American Journal of Botany, e84-e86.
27. Chao, Yi-Shan, Ho-Yih Liu, Yao-Moan Huang, and Wen-Liang Chiou*. 2010. Reproductive traits of *Pteris cadieri* and *P. grevilleana* in Taiwan: Implications for their hybrid origin. Botanical Studies, 51: 209-216.
28. Yang, Yuen-Po, Ho-Yih Liu, and Yi-Shan Chao*. 2009. Trap gland morphology and its systematic implications in Taiwan *Utricularia* (Lentibulariaceae). Flora, 204: 692-699.

29. Yang, Yuen-Po and Chao, Yi-Shan. 2006. Illustrated Guide to Aquatic Plants of Taiwan. Kenting National Park Headquarters, Hengchuen, Taiwan. (In Chinese)

Presentation

1. Chao, Yi-Shan*. 2019. Evolutionary radiation of *Pteris fauriei* group, triggered by hybridization without introgression. *2019 Annual Meeting & Symposium-New vision in plant science: Sustainable development*. Academia Sinica, Taipei, Taiwan.
2. Chao, Yi-Shan, Atsushi Ebihara, and Wen-Liang Chiou. 2018. Parapatric speciation in fern hybrids: a case of *Pteris fauriei* group. 7th Asian Symposium of Ferns and Lycophytes. Taiwan University, Taipei, Taiwan.
3. Hsu, Tian-Chuan, Yu-Fang Huang, and Yi-Shan Chao. 2016. “*Hymenophyllum polyanthos*”: Simply put, it’s complicated. Taiwan Society of Plant Systematics. Taipei, Taiwan.
4. Yi-Shan Chao, Ho-Yih Liu, and Wen-Liang Chiou. 2010. Reticulate evolution in ferns: an example from *Pteris cadieri* complex. Symposium on Plant diversity and Systematics. Taiwan Society of Plant Systematics. Taipei, Taiwan.
5. Yi-Shan Chao, Ho-Yih Liu, and Wen-Liang Chiou. 2009. *Pteris cadieri* species complex, a hybrid swarm from recurrent hybridizations. Symposium on Plant diversity and Systematics. Taiwan Society of Plant Systematics. Taipei, Taiwan.
6. Yi-Shan Chao, Ho-Yih Liu, and Wen-Liang Chiou. 2007. The Systematics application of C-Value in *Pteris cadieri* complex. Symposium on Frontiers of Plant Science, The Botanical Society of Republic of China, Taipei, Taiwan.

Poster Presentation

1. Huang, Yu-Fang, Yi-Shan Chao*, and Ho-Yih Liu. 2018. Hybrids of genus *Bolbitis* (Dryopteridaceae) in Taiwan. 7th Asian Symposium of Ferns and Lycophytes. Taiwan University, Taipei, Taiwan.
2. Fujiwara, Tao, Ayumi Uehara, Tsukasa Iwashina, Sadamu Matsumoto, Yi-Han Chang, Yi-Shan Chao, and Yausyuki Watano. 2017. Allotetraploid cryptic species in *Asplenium normale* in the Japanese Archipelago, detected by chemotaxonomical and multilocus genotype approaches, 2017. 19th International Botanical congress, Shenzhen, China.
3. Yi-Shan Chao, Ho-Yih Liu, and Wen-Liang Chiou. 2008. How many taxa in *Pteris cadieri* (Pteridaceae) complex? Chloroplast DNA sequence data analysis. Symposium on Plant diversity and Systematics. Taiwan Society of Plant Systematics. Taipei, Taiwan.
4. Yi-Shan Chao, Ho-Yih Liu, and Wen-Liang Chiou. 2007. The value of C-Value in *Pteris cadieri* complex. 4th Symposium on Asian Pteridology and Garden Show. Farmers’ Training Center, Central Mindanao University, Bukidnon, Philippines.
5. Yi-Shan Chao, Ho-Yih Liu and Yuen-Po Yang. 2006. Trap gland morphology and its systematic implication in Taiwan *Utricularia*. The 6th Conference of International Carnivorous Plant Society. Maryland, USA.