

## JOEL H. NITTA, PH.D.

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Postdoctoral Research Fellow  
Department of Plant Research  
National Museum of Nature and Science, Japan  
joelnitta@kahaku.go.jp

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### EDUCATION

Harvard University  
Ph.D. in Organismic and Evolutionary Biology, November 2016  
Advisor: Charles C. Davis  
Ph.D. Thesis: Ecology and Evolution of the Ferns of Moorea and Tahiti, French Polynesia

University of Tokyo  
Master of Science in Biological Sciences, March 2010  
Advisor: Motomi Ito  
Master's Thesis: Reticulate evolution in the *Crepidomanes minutum* species complex (Hymenophyllaceae)

University of California, Berkeley  
Bachelor of Arts in Integrative Biology and Japanese Language, May 2007  
Advisor: Brent D. Mishler  
Highest Honors in Integrative Biology  
Highest Distinction in General Scholarship

### RESEARCH AND TEACHING EXPERIENCE

Postdoctoral Research Fellow, November 2016 – Present  
Department of Plant Research, National Museum of Nature and Science, Japan  
Using next-generation DNA sequencing to reconstruct the evolutionary history of the *Thelypteris angustifrons* fern species complex.

Curatorial Fellowship, January 2016 – June 2016  
Harvard University Herbaria  
Updated organization of pteridophytes to reflect current understanding of phylogeny.

Graduate Student Instructor, Spring 2013 and Spring 2014  
Harvard University  
Taught lab section of OEB 52, Biology of Plants.

Moorea Biocode Field Staff, June 2007 – August 2011  
Moorea Biocode Project  
Oversaw collection of all fern species on island of Moorea, French Polynesia. Developed guide and key to Moorean ferns (<http://ucjeps.berkeley.edu/moorea/>).

Honor's Thesis, September 2006 – May 2007

Mishler Lab, Integrative Biology, UC Berkeley  
Completed honor's thesis, "The Filmy Ferns of Moorea, French Polynesia: A Case Study in Integrative Taxonomy."

Undergraduate Research Apprentice, January 2006 – August 2006  
Undergraduate Research Apprentice Program (URAP)  
O'Grady Lab, Environmental Science, Policy, and Management, UC Berkeley  
Conducted phylogenetic analysis of evolutionary history and biogeography of endemic Hawaiian *Dicranomyia* (craneflies).

Biology Tutor, January 2006 – May 2006  
Student Learning Center, UC Berkeley  
Tutored students in general biology and received training to lead study groups.

## **GRANTS**

- 2016 Japan Society of the Promotion of Science Postdoctoral Fellowship Grant (\$21,000)
- 2015 Pteridological Section of the Botanical Society of America Warren H. Wagner, Jr. Student Travel Award (\$500)
- 2015 National Science Foundation Doctoral Dissertation Improvement Grant (\$13,000)
- 2013 Garden Club of America Award in Tropical Botany (\$5,500)
- 2012 American Society of Plant Taxonomists Research Grant for Graduate Students (\$850)
- 2012 Systematics Association Systematics Research Fund (\$2,350)
- 2012 Society of Systematic Biologists Graduate Student Research Award (\$1,900)
- 2009 University of Tokyo Academic Research Grant, International (\$1,500)

## **AWARDS**

- 2008 Japanese Government (Monbukagakusho: MEXT) Scholarship
- 2007 Phi Beta Kappa Society
- 2007 Departmental Citation, Integrative Biology, UC Berkeley
- 2002 Regents and Chancellor's Scholar, UC Berkeley

## **PUBLICATIONS**

**Nitta, J.H.**, Watkins, J.E., Holbrook, N.M., Wang, T.W., Davis, C.C. Intergenerational niche differentiation in filmy ferns (Hymenophyllaceae). In Prep.

**Nitta, J.H.**, Amer, S., Davis, C.C. *Microsorium* × *tohieaense* (Polypodiaceae), a new hybrid fern species from French Polynesia, with implications for the taxonomy of *Microsorium*. Submitted, *Systematic Botany*.

Gilbert, K.J., **Nitta, J.H.**, Talavera, G., Pierce, N.E. Ecological correlates of the evolution of pitcher traits in the genus *Nepenthes* (Caryophyllales). Submitted, *Biological Journal of the Linnean Society*.

Zhou, X.-M., Zhang, L., Chen, C.-W., Li, C.-X., Huang, Y.-M., Chen, D.-K., Lu, N.T., Cicuzza, D., Knapp, R., Luong, T. T., **Nitta, J.H.**, Gao, X.-F., Zhang, L.-B. 2017. A plastid phylogeny and character evolution of the Old World fern genus *Pyrrosia* (Polypodiaceae) with the description of a new genus: *Hovenkampia* (Polypodiaceae). *Molecular Phylogenetics and Evolution*. 114: 271-294.

**Nitta, J.H.**, Meyer, J.-Y., Taputuarai, R., Davis, C.C. 2017. Life cycle matters: DNA barcoding reveals contrasting community structure between fern sporophytes and gametophytes. *Ecological Monographs*. 87 (2): 278 – 296.

Pinson, J.B., Chambers, S.M., **Nitta, J.H.**, Kuo, L.Y., Sessa, E. 2017. The separation of generations: Biology and biogeography of long-lived, sporophyte-less fern gametophytes. *International Journal of Plant Sciences* 178 (1): 1 – 18.

Pouteau, R., Meyer, J.-Y., Blanchard, P., **Nitta, J.H.**, Terorotua, M., Taputuarai, R. 2016. Fern species richness and abundance are indicators of climate change on high-elevation islands: Evidence from an elevational gradient on Tahiti (French Polynesia). *Climatic Change* 138 (1-2): 143 – 156.

Chen, C.W.\*, **Nitta, J.H.\***, Fanerii, M., Yang, T.Y.A., Pitisopa, F., Li, C.W., Chiou, W.L. 2015. *Antrophyum solomonense* (Pteridaceae), a new species from Solomon Islands, and its systematic position based on phylogenetic analysis. *Systematic Botany*. 40 (3): 645 – 651.

\* equal contribution

Ebihara, A., Yamaoka, A., Mizukami, N., Sakoda, A., **Nitta, J.H.**, Imaichi, R. 2013. A survey of the fern gametophyte flora of Japan: Frequent independent occurrences of noncordiform gametophytes. *American Journal of Botany*. 100 (4): 735 – 743.

**Nitta, J.H.**, Ebihara, A., Ito, M. 2011. Reticulate evolution in the *Crepidomanes minutum* species complex (Hymenophyllaceae). *American Journal of Botany*. 98 (11): 1782 – 1800.

**Nitta, J.H.**, Meyer, J.-Y., Smith, A.R. 2011. Pteridophytes of Mo’orea, French Polynesia: Additional new records. *American Fern Journal*. 101 (1): 36 – 49.

Ebihara, A., **Nitta, J.H.**, Ito, M. 2010. Molecular species identification with rich floristic sampling: DNA barcoding the pteridophyte flora of Japan. *PloS ONE*. 5 (12): e15136. doi:10.1371/journal.pone.0015136

Ebihara, A., **Nitta, J.H.**, Iwatsuki, K. 2010. The Hymenophyllaceae of the Pacific Area. 2. *Hymenophyllum* (excluding subgen. *Hymenophyllum*). *Bulletin of the National Museum of Nature and Science, Series B (Botany)*. 36 (2): 43 – 59.

Ebihara, A., **Nitta, J.H.**, Lorence, D., Dubuisson, J.-Y. 2009. New records of *Polyphlebium borbonicum*, an African filmy fern, in the New World and Polynesia. *American Fern Journal*. 99 (3): 200 – 206.

**Nitta, J.H.** and Epps, M.J. 2009. Hemi-epiphytism in *Vandenboschia collariata* (Hymenophyllaceae). *Brittonia*. 61 (4): 392 – 397.

**Nitta, J.H.** 2008. Exploring the utility of three plastid loci for biocoding the filmy ferns (Hymenophyllaceae) of Moorea. *Taxon*. 57 (3): 725 – 736.

**Nitta, J.H.** and O'Grady, P.M. 2008. Mitochondrial phylogeny of the endemic Hawaiian craneflies (Diptera, Limoniidae, *Dicranomyia*): implications for biogeography and species formation. *Molecular Phylogenetics and Evolution*. 46 (3): 1182 – 1190.

### Conference Presentations: Oral

**Nitta, J.H.** 2017. *Moorea tou to Tahichi tou (Furansu ryou Porineshia) no shida shokubutsu furora: DNA bakodo ni yoru gunshuu kouzou kaiseki* (Fern flora of Moorea and Tahiti, French Polynesia: Community analysis using DNA barcodes). In Japanese. Invited Speaker, Japan Pteridological Society Meeting at the 81<sup>st</sup> Annual Meeting of the Botanical Society of Japan, Noda, Japan.

**Nitta, J.H.**, Nakato, N., Ebihara, A. 2017. Unraveling the evolutionary history of the *Parathelypteris angustifrons* species complex (Thelypteridaceae). 19<sup>th</sup> International Botanical Congress, Shenzhen, China.

**Nitta, J.H.**, Watkins, J.E., Holbrook N.M., Davis, C.C. 2017. Life in the canopy: Comparative and community phylogenetic analyses of epiphytic growth in ferns. 19<sup>th</sup> International Botanical Congress, Shenzhen, China.

**Nitta, J.H.**, Meyer, J.-Y., Taputuarai, R., Davis, C.C. 2017. *Tahichi, Moorea tou no shida shokubutsu gunshuu keisei: houshitai to haiguutai to no hikaku* (Fern community assembly on Moorea and Tahiti: comparing gametophytes and sporophytes). In Japanese. 16<sup>th</sup> Annual Meeting of the Japanese Society for Plant Systematics, Kyoto, Japan.

**Nitta, J.H.**, Meyer, J.-Y., Taputuarai, R., Davis, C.C. 2015. Life cycle matters: Divergent patterns of community structure between fern sporophytes and gametophytes. Next Generation Pteridology Conference, Washington, DC.

**Nitta, J.H.**, Watkins, J.E., Holbrook N.M., Davis, C.C. 2015. Life cycle matters: Divergent patterns of community structure between fern sporophytes and gametophytes. Botanical Society of America Conference, Edmonton, Canada.

### Conference Presentations: Poster

**Nitta, J.H.**, Amer, S., Davis, C.C. 2017. A new hybrid fern species of *Microsorium* (Polypodiaceae) from Moorea, French Polynesia. 81<sup>st</sup> Annual Meeting of the Botanical Society of Japan, Noda, Japan.

**Nitta, J.H.**, Watkins, J.E., Holbrook N.M., Davis, C.C. 2015. Comparative ecophysiology of the filmy ferns (Hymenophyllaceae) of Moorea, French Polynesia. Botanical Society of America Conference, Edmonton, Canada.

**Nitta, J.H.** and Davis, C.C. 2014. Investigating the role of a cryptic life stage in fern community assembly. 9<sup>th</sup> Plant Biology Initiative Conference, Cambridge, MA.

**Nitta, J.H.** and Davis, C.C. 2012. Investigating drivers of community assembly in the ferns of Moorea, French Polynesia: An ecological and evolutionary approach. 7<sup>th</sup> Plant Biology Initiative Conference, Cambridge, MA.

**Nitta, J.H.**, Ebihara, A., Motomi, I. 2009. *Uchiwa-goke kinen shuugun ni okeru moujou shinka* (Reticulate evolution in the *Crepidomanes minutum* species complex). In Japanese. 41<sup>st</sup> Species Biology Conference, Hachioji, Japan.

## **JOURNALS REVIEWED**

*Acta Botanica Gallica, American Fern Journal, American Journal of Botany, Annals of Botany, Australian Systematic Botany, Botanical Journal of the Linnean Society, Brittonia, Molecular Phylogenetics and Evolution, Plant Species Biology, Phytotaxa, PLoS ONE, Taxon*

## **PROFESSIONAL MEMBERSHIPS**

American Fern Society, American Society of Plant Taxonomists, Ecological Society of America, Japanese Society for Plant Systematics, Botanical Society of Japan

## **PROFESSIONAL COMMUNITY ACTIVITY**

2017 – Subject Editor, *Phytotaxa*