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Cover photo: *Actiniopteris radiata* in South Africa (Klaus Mehltreter)

INTRODUCTION

The *Annual Review of Pteridological Research* (ARPR) provides a comprehensive list of literature citations on ferns and lycophytes published during one calendar year. Production begins after the calendar year ends in order to insure that the Review is as complete as possible. The authors, titles and subjects of the literature cited are indexed. The ARPR also includes a description of research interests and contact information of pteridologists who answered our annual questionnaire.

The ARPR is now published for 25 years and the last compiler, Joanne M. Sharpe was in charge since 1994. Joanne still supported this year's issue contributing database searches and advice, so that we could handle this task successfully. This year's issue contains 1,071 citations compiled from a search of a variety of on-line databases as well as our annual questionnaire to pteridologists throughout the world. We hope that the continuous publication of ARPR will enhance access to information published about ferns and lycophytes worldwide and stimulate further collaboration among pteridologists. For any feedback on this year's issue, please contact Klaus Mehltreter, Instituto de Ecología, A. C., Red de Ecología Funcional, Carretera antigua a Coatepec No. 351, El Haya, 91070 Xalapa, Ver., Mexico (klaus.mehltreter@inecol.edu.mx).

If you are not on our mailing list but would like to receive information about how to be included in future issues, or if you would like to obtain back issues of the *Annual Review of Pteridological Research* please contact Elisabeth A. Hooper, Treasurer, International Association of Pteridologists, Biology Department, Truman State University, 100 E Normal Street, Kirksville MO 63501-4221 USA, (iapferns@gmail.com). On-line access to the literature from back issues since 1994 is available on the website of the American Fern Society (www.amerfernsoc.org).

***Contributions of drawings suitable for the cover of a future Annual Review of Pteridological Research are always welcome. Please send to Elisabeth A. Hooper at the above address.

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Patrick J. Acock	Phylogeny of *Asplenium* and most aspects of *Equisetum* research
Ruth Aguraiuja	Population biology and ecological recovery/restoration experiments with endangered species
Victor B. Amoroso	Botany, economic ferns, histochemical studies (medicinal ferns), Philippine *Cycas*, morphology and taxonomy
Raju Antony	Systematic studies of *Selaginella*; ferns and conservation of ferns
Naomi Arcand	Ecology and biogeography of tree ferns
Ralph C. Archer	Fern horticulture
Nan Crystal Arens	Ecology of tree ferns
Yasmin S. Baksh-Comeau	Vascular flora of Trinidad and Tobago
Julie F. Barcelona	Philippine ferns/floristics, ecology and conservation; *Odontosoria* systematics; Philippine *Rafflesia*
H. Wilfried Bennert	Ferns and lycopods
Subir Bera	Animal interaction with pteridophytes and its co-evolutionary significance
Rodica Bercu	Histo-anatomy of ferns
Kamlesh Bhakuni	Biodiversity, taxonomy and morphology of Central Himalayan ferns
S. S. Bir	Compilation of index to chromosome numbers of Indian pteridophytes
Michel Boudrie	Pteridophytes of France and of the Guianas (systematics, taxonomy, ecology, distribution)
Siegmar-W. Breckle	Ecosystems of the earth; ecology of halophytes; tropical ecology; desert ecology
Walter Bujnoch	Ferns of central Europe, especially *Dryopteris affinis*
Jian Guo Cao	Sexual reproduction and development of fern gametophytes
James D. Caponetti	Propagation of ferns by tissue culture
Francisco Carrapico	*Azolla* (general biology and taxonomy)
Kalyan Chakraborti	Phytogeography, ecology, fern lore, ethnobotany
Wen-Liang Chiou	Gametophyte morphology and development; reproductive biology; antheridiogen; phenology of sporophytes

Maarten J. M. Christenhusz	Fern floras, island biogeography, Phytotaxa (journal)
Aurea M. T. Colli	Ecology and physiology
Marten W. de Boer	Pteridophytes of Bolivia and East Africa, herbarium specimen collection
Joshua Der	*Pteridium* biogeography, fern genomics and transcriptomics, RNA editing, life cycle evolution
David L. Dilcher	Fossil plants of the Mesozoic and Cenozoic
Shi-Yong Dong	Taxonomy of Asian tropical ferns; pteridophyte flora of southern China
Franz-Georg Dunkel	Rare ferns, ecology and population biology
Adrian Dyer	The biology of soil spore banks and their potential in fern conservation; ecology of fern gametophytes; reproductive biology of *Woodsia ilvensis*
Atsushi Ebihara	Speciation, gametophytes, Hymenophyllaceae
A. Murray Evans	Pteridophytes of the eastern United States; taxonomy, ecology, natural history
Elizabeth Farnsworth	Ecology, northeastern ferns, illustration
Donald R. Farrar	Fern reproduction; *Botrychium* systematics
Kathryn Flinn	Ecology
Harald C. Frank	Tropical ferns in general; *Platycerium*; ant-ferns; *Huperzia*
Christopher Roy Fraser-Jenkins	Taxonomy, Floristics, Himalayan and all Asian ferns; *Asplenium*, *Athyrium*, *Cheilanthes*, *Diplazium*, *Dryopteris*, *Polystichum*, *Pteris*, Nepal, Sri Lanka, Assam, Flora of Pakistan, Bangladesh, China, Myanmar, Tibet, Bhutan
Stephen C. Fry	Cell wall polysaccharides and enzymes; *Equisetum* tissue culture (callus)
Mary Gibby	Evolution and speciation in ferns; fern conservation
Arthur V. Gilman	Lycopodiaceae, Ophioglossaceae, systematics of temperate ferns and allies
Hit Kishore Goswami	Population cytogenetics of *Isoetes* and *Ophioglossum*, pteridophytes as medicinal plants
Joan Eiger Gottlieb	Fern ecology, evolution and morphogenesis
Gary K. Greer	Pteridophyte ecology and morphology, phenotypic plasticity, invasive species

Catharine W. Guiles	Horticulture of temperate-zone ferns, especially those of New England; history of pteridology
Irina I. Gureyeva	Conservation, ecology, biomorphology, population biology, taxonomy of ferns
Christopher H. Haufler	Patterns and processes of fern evolution; application of chromosomal, isozymic, and DNA data bases in characterizing fern species, understanding speciation mechanisms and phylogenetic relationships; the significance of polyploidy in pteridophyte evolution
Andreas Hemp	Vegetation ecology
Leslie G. Hickok	Genetics, science pedagogy
Elisabeth A. Hooper	Fern systematics; *Aleuritopteris*
Karsten Horn	Biosystematics, ecology, population biology and distribution of *Diphasiastrum* and *Botrychium* species in Europe; bibliography of Macaronesian pteridophytes; conservation strategies for endangered German pteridophytes; monograph of the genus *Diphasiastrum*
Peter H. Hovenkamp	Polypodiceae, Nephrolepidaceae, Oleandraceae, Flora Malesiana, Flora of China
Ana M. Ibars	Conservation, ferns spore bank, germination
Ryoko Imaichi	Shoot apex structure; evolutionary morphology; origin of leaves
Filippo Imperato	Chemistry of flavonoids and other phenolics of ferns
Kunio Iwatsuki	Flora of East and Southeast Asia; Hymenophyllaceae; Conservation
A. Clive Jermy	Conservation action programs for Pteridophyta UK, European ferns, *Isoetes* in Europe
Mirkka Jones	Determinants of plant community composition and diversity, ecology of Neotropical ferns
S. L. Jury	Flora of the Mediterranean, especially Spain and Morocco; Pteridophyta of Morocco
Masahiro Kato	Tropical fern flora; morphological evolution of vascular plants; speciation and adaptation of rheophytes; evolution of apogamous ferns
Michael Kessler	Biodiversity and biogeography of Bolivian montane forests, including pteridophytes; flora of Bolivian pteridophytes; flora and conservation of Indonesia
S. P. Khullar	Fern floristics, taxonomy, cytology and morphology

Yves Krippel	Distribution of pteridophytes in Luxembourg
Rakesh Kumar	*Azolla*/*Anabaena* physiology
Siro Kurita	Speciation, karyotype evolution, systematics
Marco Landi	Population ecology
Marcus Lehnert	Taxonomy, phylogeny, ecology and biogeography of pteridophytes, special expertise in tree ferns
Ilia Leitch	Evolution of genome size and karyotypic diversity in plants
David B. Lellinger	Ferns and fern-allies of the USA
Blanca Leon	Taxonomy of neotropical Polypodiaceae, Andes and Peruvian ferns
Bai-Ling Lin	Development and hormone signaling
Stuart Lindsay	Pteridophytes of Thailand, Laos and Cambodia; Vittariaceae of Southeast Asia; gametophyte biology/ecology; multi-access keys
David H. Lorence	Pteridophytes of Polynesia, Micronesia, Mascarenes
Kay Lynch	Propagation and conservation of Hawaiian native ferns
P. V. Madhusoodanan	Pteridophytes and bryophytes of south India; *Azolla* ssp. and Cyanobacteria as biofertilizers
Fernando B. Matos	Taxonomy, biogeography, phylogeny and evolution of *Elaphoglossum*
Sadamu Matsumoto	Cytotaxonomic study of ferns, especially *Cyrtomium*, *Asplenium* and *Pteris*; pteridophyte flora of southern Pacific islands, Bhutan, Taiwan and Mt. Kinabalu (Borneo)
J. Mitchell McGrath	Plant breeding, molecular cytogenetics, gene duplication
H. S. McHaffie	Pteridophytes
Klaus Mehltreter	Fern ecology, phenology, herbivory, interactions with insects, invasive species
Aniceto Mendoza Ruiz	Pteridophytes of Mexico; taxonomy, floristics, cultivation and propagation of ferns
John T. Mickel	Pteridoflora of Mexico; monographic studies of *Anemia* and *Elaphoglossum*
Vlastimil Mikolas	*Polypodium*, *Asplenium trichomanes* agg., *Dryopteris*, *Equisetum* and ferns of Oceania

Futoshi Miyamoto	Sino-Japan and Himalayan areas
James D. Montgomery	*Dryopteris* in North America and Mexico; ferns of Pennsylvania and New Jersey; ecology of *Botrychium*
Robbin C. Moran	Taxonomy, biogeography, phylogeny and evolution of ferns and lycophytes
Renier Morejon Hernandez	Taxonomy and conservation of Cuban ferns
Radhanath Mukhopadhyay	*Selaginella* and ferns
Claudine C. Mynssen	*Diplazium*, Brazilian Flora
Narumi Nakato	Cytotaxonomy, cytogeography, apogamy
Maite Serguero Nino	Selaginellaceae, Lycopodiaceae, Polypodiaceae (incl. Grammitidaceae), fern culture, ecology
Benjamin Oellgaard	Systematics and biology of the Lycopodiaceae with special reference to neotropical Lycopodiaceae; pteridophytes of the northern Andes, especially Ecuador, biology, taxonomy and diversity; quantitative inventories of pteridophytes in sample plots in Ecuador
Sue Olsen	Testing ferns for hardiness and ornamental value and introducing ferns to the public
Leticia Pacheco	Systematics of *Diplazium*
Christopher N. Page	Biology and ecology of Pteridophyta, biogeography, distribution, insular floras, paleobotany, *Equisetum*, patterns, principles, processes and dynamics in pteridophyte ecosystems and their evolution
Santiago Pajaron	Reproductive biology, population genetics, systematics and evolution
Monica Palacios-Rios	Taxonomy, systematics, floristics, biogeography, ecology, ethnobotany, databases, propagation, and conservation of Mexican and neotropical Pteridophytes
Daniel D. Palmer	Hawaiian ferns
Ramakant Pandey	Phytochemistry of ferns with medicinal properties
Barbara Parris	Monographic studies of Grammitidaceae; systematics, ecology and phytogeography of Old World pteridophytes particularly in tropical and south temperate regions
Alison M. Paul	Pteridophyte curation; Macaronesian and European pteridophytes
James H. Peck	Pteridophyte flora of Arkansas

A. L. Pereira	Plant-cyanobacteria symbioses, phylogeny, cyanotoxins, proteomic, phytoremediation, ecotoxicology of plants by cyanotoxins
Leon Perrie	New Zealand ferns
Krzysztof Piatek	Fern biogeography
Jefferson Prado	Phylogeny, nomenclature, taxonomy, and geographical distribution of Pteridaceae; pteridoflora in Brazil
Kathleen M. Pryer	Phylogenetics of ferns and basal tracheophytes using morphological and molecular data; systematics of basal fern families, especially Marsileaceae, Hymenophyllaceae, tree ferns, pteridoid ferns, ontogeny and phylogeny; morphometrics
N. Punetha	Morphology, taxonomy and biodiversity of Central Himalayan Ferns and Lycophytes
Anshita Raj	Phytoremediation, arsenic, *Pteris vittata* gametophytes
K. P. Rajesh	Ecology, taxonomy and conservation of bryophytes and pteridophytes of Western Ghats
R. H. G. Ranil	Tree ferns
Tom A. Ranker	Systematics, ecology and evolution of tropical ferns
Karen Renzaglia	Morphology, development, reproduction, ultrastructure
Roderick Robinson	Invasive species: *Pteridium*, *Lygodium*, *Azolla*, etc.
Gar W. Rothwell	Phylogeny of land plants
J. P. Roux	*Elaphoglossum*, *Dryopteris*, *Polystichum*, African and Madagascar pteridophytes
Kai Runk	Comparative biology and ecology of Estonian *Dryopteris*; cultivation of hardy ferns in Estonia, especially *Polystichum* and *Phyllitis scolopendrium* and their cultivars; hardy east Asian fern species
Arthur Edward Salgado	Taxonomy of Southeast Asian ferns; the genus *Asplenium* in the Philippines
Annette Schoelch	Construction morphology; development of the sporophyll, sporangia and sori in ferns; evolution and phylogeny of ferns
Eric Schuettpelz	Evolution, diversification, and systematics of leptosporangiate ferns
David Schwartz	Cheilanthoid ferns
Kakali Sen	Cheilanthoid ferns

B. D. Sharma	Morphology, anatomy, phytochemistry and experimental studies on pteridophytes; palaeobotany of Mesozoic and Tertiary plants
Om P. Sharma	Agronomy, carcinogenic ferns
Joanne M. Sharpe	Tropical and temperate fern life histories; long-term studies of demography of tropical pteridophytes; ecology of rheophytes and New England ferns
Shane W. Shaw	Systematics and evolution of Gleicheniaceae, insect-fern interactions and *Isoetes* anatomy
Judith E. Skog	Fern evolution and phylogeny, especially basal ferns--Osmundaceae, Schizaeaceae, Matonianceae and (with J. Mickel and R. Moran) relationships within the genus *Elaphoglossum*
Tynisha Smalls	Molecular biology of ferns
Alan R. Smith	Phylogeny of pteridophytes; phylogeny of Polypodiaceae/Grammitidaceae; floristics of Mexican, Venezuelan and Bolivian ferns and allies; phytogeography of ferns
Susan V. Sprunt	Polypodium, *Pleopeltis*
V. K. Sreenivas	Molecular phylogeny, taxonomy, *Pteris*
G. K. Srivastava	*Isoetes*
Ruth A. Stockey	Paleobotany, plant phylogeny
Michizo Sugai	Photocontrol of spore germination, sex organ differentiation
John A. Thomson	Taxonomy, evolution and secondary metabolites of *Pteridium*; bracken fern/insect interactions
J.H.A. van Konijnenburg-van Cittert	Evolution of fossil fern families, especially Dipteridaceae
Alejandra Vasco	Neotropical pteridophyte taxonomy, *Elaphoglossum*
Olena Volodymyrivna Vasheka	Fern introduction, cultivation of temperate-zone ferns in Ukraine, pteridophyte conservation
Satish Chander Verma	Reproductive biology, cytogenetics, genetics and cytotaxonomy of homosporous ferns
David H. Wagner	Ferns of the Pacific Northwest; *Polystichum*, *Botrychium*
Florence S. Wagner	Cytology and hybridization in pteridophytes; monograph of *Botrychium*; Hawaiian pteridophyte flora; cytology and paraphyses of Hawaiian pteridophytes; bibliography of Hawaiian pteridophytes

Zhong-Ren Wang	Systematics and biosystematics of Athyriaceae, *Asplenium* and *Pteris*; genetic diversity in conservation biology; allozyme analysis
James E. Watkins, Jr.	Fern ecology, ecophysiology, reproductive/gametophyte biology
Shao Wen	Fern embryology, and pteridophyte taxonomy, Polypodiaceae, *Phymatopteris*
Richard A. White	Vascular plant anatomy and morphology; systematics and anatomy of the tree ferns (Dicksoniaceae and Cyatheaceae) and allies
Dean P. Whittier	Morphology and development of fern gametophytes; development of gametophytes of the Ophioglossaceae, Psilotaceae, and Lycopodiaceae
Carl-Johan Widén	Phloroglucinol derivatives in ferns
Kenneth A. Wilson	Hawaii alien ferns; pteridophyte sporangial morphology
Michael D. Windham	Cytology and phylogeny of ferns; Cheilanthoid ferns
Paulo G. Windisch	Neotropical ferns
Paul G. Wolf	Molecular systematics, population genetics, fern phylogeny
George Yatskievych	Systematics of cheilanthoid ferns; floristics of U.S. (especially Missouri) and Mexico; conservation
Reiko Yoroi	Gametophytes of Hymenophyllaceae, Vittariaceae and *Asplenium unilaterale*
Xian-Chun Zhang	Ferns of the Himalaya region and Southeast Asia
Aurora Zlotnik	Fern anatomy, plant stomata

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