

# Pteridophyte Phylogeny Group (PPG)

## OBJECTIVE

To produce, and continually update, a community-derived classification for lycophytes and ferns—based on our understanding of phylogeny—at the family and genus levels.

This classification is meant to be a summary statement, by fern specialists of varying backgrounds, of current hypotheses. It will not include new descriptions of taxa, but instead will reference published concepts.

Based on the best available data, the classification will serve as a resource for those wanting references to the most recent literature on lycophyte and fern phylogeny, a framework for guiding future investigations, and a stimulus to further discourse.

Although we would welcome its use by systematists, other scientists, governmental agencies, and anyone else (professional or non-professional) interested in plants, the classification should not be considered as a system to be imposed on investigators, authors, editors, or reviewers. We recognize that not everyone, or even all contributors to this PPG classification, will agree on a single system that serves all users.

Initially, this classification will be submitted for publication as a manuscript (as described below). However, we also envision the development of a dynamic companion website that will reflect updates to it. As the need arises, other versions can also be formally published.

## AUTHORSHIP AND ROLES

Following the precedent established by the Angiosperm Phylogeny Group (APG), the cited author for this work will simply be the Pteridophyte Phylogeny Group (PPG). Individuals will be mentioned, by name, in a footnote, in one of three categories (described below).

*Project coordinators* (Harald Schneider and Eric Schuettpelz) will be responsible for project oversight. They will work to assemble and coordinate a broad and diverse field of clade coordinators and contributors. It is expected that some clades will attract more interest than others and the project coordinators will manage any uneven distribution and may specifically solicit volunteers for those clades attracting less attention. If necessary, the project coordinators will be the ultimate arbitrators of conflict. These individuals will also assemble the clade data/treatments and draft, revise (with input from the clade coordinators and contributors), and submit the manuscript. As applicable, project coordinators may serve as clade coordinators or contributors.

*Clade coordinators* will work to assemble and coordinate a broad and diverse field of contributors and will be responsible for compiling and editing data/treatments contributed for

their focal clade(s). They will also be tasked with identifying a reasonable consensus in areas of disagreement among contributors. Clade coordinators may serve as contributors in their focal clade(s), or elsewhere. These individuals may be asked to assist with the initial draft of the manuscript and are expected to assist in its revision.

*Contributors* will be responsible for contributing specific data/treatments. These individuals may be asked to assist with the initial draft of the manuscript and are expected to assist in its ongoing revision.

## **FAMILIES TO BE RECOGNIZED**

The project coordinators will propose an initial list of families to be recognized, based on the classification of Smith et al. (2006), with modifications from more recently published treatments (e.g., Christenhusz et al. 2011; Rothfels et al. 2012; Liu et al. 2013). This family list will be modified based on the input of the clade coordinators and contributors. It is our hope that we can agree on a list that the vast majority of those involved will be comfortable with. Areas of conflict will be noted.

## **GENERA TO BE RECOGNIZED**

Although the project coordinators will propose an initial list of genera to be recognized, the clade coordinators will ultimately be tasked with identifying the final list of genera to be treated from their respective clades. As the experts on their focal clades, the clade coordinators and associated contributors are best suited to make these taxonomic decisions.

## **FAMILY TREATMENTS**

For each family, the project coordinators will provide (with the assistance of the relevant clade coordinators): (1) family name; (2) author and citation; (3) type genus and author; (4) number of genera in family; (5) number of species in family; (6) a brief statement outlining family circumscription, as described below; (7) a brief statement concerning family monophyly, as described below; and (8) a brief diagnosis, as described below. Where appropriate, alternatives to community-derived PPG classification can, and should, be discussed.

## **GENUS TREATMENTS**

For each genus within the assigned focal clade(s), clade coordinators will provide (with the assistance of the relevant contributors): (1) genus name; (2) author and citation; (3) type species and author, for both accepted name and basionym; (4) number of species in genus; (5) a brief statement outlining genus circumscription, as described below; and (6) a brief statement concerning genus monophyly, as described below; and (7) a brief diagnosis, as described below.

Where appropriate, alternatives to community-derived PPG classification can, and should, be discussed.

## **STATEMENTS OF CIRCUMSCRIPTION, MONOPHYLY, AND DIAGNOSIS**

The brief statement outlining the circumscription of a taxon should begin with the word “Circumscription” and may be as simple as “Circumscription *sensu* AUTHOR (YEAR)” or “Circumscription *sensu* AUTHOR (YEAR), but including/excluding TAXON”. If no reasonable definition has been published, then a list of included taxa would be appropriate (e.g., “Circumscription includes TAXON, TAXON, and TAXON”).

The brief statement concerning the monophyly of a taxon should begin with the word “Monophyly” and may be as simple as “Monophyly supported by a maximum likelihood bootstrap percentage of PERCENTAGE (AUTHOR YEAR)” or “Monophyly likely, but not confirmed via a phylogenetic analysis”.

The brief diagnosis for a taxon should begin with the words “Differs from” and should describe how the taxon differs, morphologically or otherwise, from its closest relatives or taxa it might be easily confused with (i.e., those that are morphologically similar but not necessarily related).

## **TARGETED TIMELINE**

August 2014. Project coordinators broadly circulate initial PPG statement (this document) for review and comment. Project coordinators seek volunteers to serve as clade coordinators and contributors.

September 2014. Project coordinators finalize PPG statement and list of clade coordinators and contributors (subject to further modification). Project coordinators circulate initial list of families and genera to clade coordinators.

October 2014. Project coordinators, with input from clade coordinators and contributors, produce draft list of families to be treated. Clade coordinators work with contributors to determine genera to be treated.

November 2014. Project coordinators produce draft family treatments. Clade coordinators produce draft genus treatments.

December 2014. Project coordinators circulate draft of family and genus treatments to clade coordinators and contributors for comment.

January 2015. Project coordinators and clade coordinators revise family and genus treatments.

February 2015. Project coordinators circulate revision of family and genus treatments to clade coordinators and contributors for comment.

March 2015. Project coordinators and clade coordinators revise family and genus treatments. Project coordinators draft manuscript and begin website development.

April 2015. Project coordinators circulate manuscript among clade coordinators and contributors for comment.

May 2015. Project coordinators submit manuscript for publication.

June 2015. Project coordinators present PPG classification (and draft website) at “Next Generation Pteridology” conference.