
Araceae and eMonocot: An online resource for monocot plants of the world

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ABSTRACT

eMonocot (<http://e-monocot.org>) is an online resource for monocot plants created by the eMonocot project, a consortium of the Royal Botanic Gardens, Kew, Oxford University and the Natural History Museum, London, as well as contributions from monocot taxonomists and communities worldwide. Method and progress are described, including the addition and gathering of information on Araceae.

KEY WORDS

Araceae, eMonocot, eTaxonomy, collaboration

INTRODUCTION

In an era when plant classification is being driven forward by increasing volumes of molecular data, the species-level taxonomy of taxa such as Araceae remains as important as ever. Increasingly taxonomists are seeking to collaborate with colleagues around the world including volunteer biologists, horticulturists, and the general

public in order to share information and resources such as checklists, original publications, herbarium records and specimens, bibliographic references, illustrations, photograph libraries, datasets and distribution maps. Historically such resources have been held by institutions. Access for both specialist taxonomists and the general public normally requires special permission.

THE DISTRIBUTED RESOURCES, ONLINE RESOURCES, AND ACCESS FOR ALL

There is a great deal of information on species, but much of it is distributed across many journals, books and websites. Much of this is only available in specialist libraries to which many don't have access. In recent years several initiatives have gone some way to making this information accessible, such as the Biodiversity Heritage Library (<http://www.biodiversitylibrary.org/>), where digital copies of many texts are available online. The Global Plants Initiative (via <http://Iplants.jstor.org>) has been digitising Herbarium specimens around the world and

making these accessible. These resources are transforming the way taxonomy is done today. However for many users of information on plants, these resources are still hard and time consuming to interpret if they simply want to know the identification or current information on a given plant.

THE EMONOCOT PROJECT

The eMonocot project brings information about all monocot species together in one place. From having static species descriptions and dispersed datasets, we can have a comprehensive website that is updated, by the community around the world. It is a consortium project led by the Royal Botanic Gardens, Kew in collaboration with Oxford University and the Natural History Museum, and funded by the Uks Natural Environment Research Council (NERC). Monocots were chosen for this ground-breaking project for several reasons. They are a large group, with over 70, 000 species making up 20% of the flowering plants, with high economic importance. Also, several resources were already available to feed data into the system. These include the World Checklist of Selected Plant families (<http://apps.kew.org/wcsp/home.do>), Palmweb (<http://palmweb.org/>) and CATE Araceae.

The primary output of eMonocot is the eMonocot portal (www.e-monocot.org), a website that is rapidly becoming a media-rich, interactive tool of discovery and education. This is targeted at all users from

biodiversity scientists to the interested public, and everybody in between. All the data is available free of charge, to anyone who can access the internet. There is referenced information on each species, genus and family of Monocots, with images, distribution, nomenclatural information, synonymy, conservation status and more. Other tools include identification keys, faceted searching, map searches and more. All this is brought together by a community of amateurs and professionals from reliable scientific resources.

How eMonocot works

eMonocot works as a distributed information system or a “hub and spoke” model. The eMonocot Portal is at the centre of this, and it harvests data from a variety of resources which are being continuously updated. The World Checklist of Selected Plant Families provides the “backbone” classification, with accepted names and synonyms of all monocots, including their Authors, place and date of publication. This checklist also provides geographical, habitat and lifeform data.

Most descriptive data and images feed into the portal from a variety of Scratchpads (www.scratchpads.eu). These are interactive e-taxonomy community research tools, which enable researchers to manage, share and publish taxonomic data online. Scratchpads allow researchers to work collaboratively on the the groups of organisms they study and disseminate their research outputs to a large audience via the

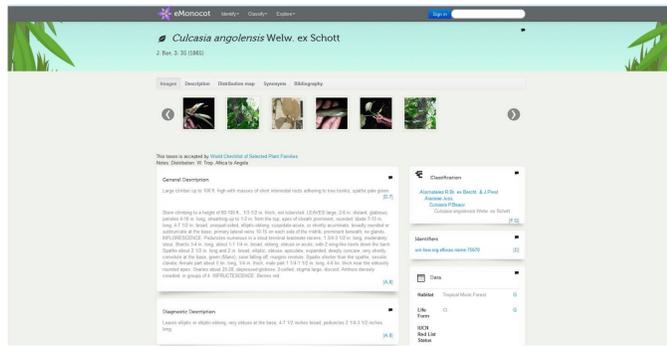


Figure 1

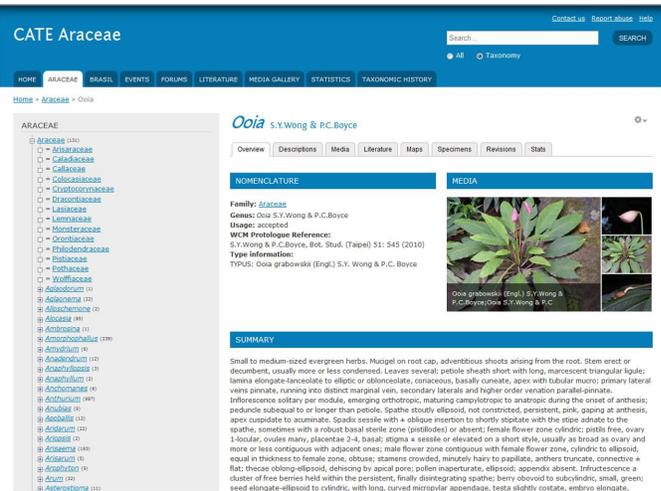


Figure 2

Figure 1. Example of a taxon page from the eMonocot portal.

Figure 2. Example of a taxon page from the CATE Araceae Scratchpad. A classification tree allows the user to explore and navigate to a particular taxon. A series of tabs on each taxon page allows the user to explore the different data pertaining to that taxon.

web. They can handle a variety of file types and data including bibliographic records, DNA datasets, morphological character matrices, media files and text pages. They are free to set up and have proved very popular with a wide variety of individuals and groups. Specifically eMonocot-themed Scratchpads have been created so that individuals and groups of individuals interested in contributing to eMonocot can create taxon-focused websites. There are 28 scratchpads that currently feed into eMonocot. One of these covers the Araceae family (<http://araceae.e-monocot.org>).

Data from these sites, and other taxon specific sites as well as other resources such as Global Biodiversity Information Facility

(GBIF) and IUCN redlist, are harvested by the portal regularly, and are presented on a web page for each taxon (**Figure 1**). This model of working could eventually be used to cover information on all groups of plants from all over the world in one site.

Araceae and eMonocot

The Araceae scratchpad contains data that used to be in www.cate-araceae.org. This data was gathered as part of a previous project called creating a taxonomic eScience, also funded by NERC that ran from 2005–2008 (Haigh et al., 2008). After a period of time the software behind this site became outdated and the data has now been imported into <http://araceae.e->

monocot.org/ which is now also available through www.emonocot.org. The Araceae site is being worked on intensively and we now have species descriptions for over 65% of accepted taxa (**Figure 2**). New species are added, and are available on the Scratchpad before they are imported into the Portal. So for up-to-date species information, this is the place to go.

There are identification keys to the Araceae family, as well as some groups including *Anthurium*, African species, and *Arum*. You will find you can use the portal to ask questions such as: How many species of Araceae are there? How many genera? What are the epiphytes in the drylands of South America? There are different ways of searching for data including map searches, and results can be downloaded and presented graphically.

How you can become more involved

We are always looking to improve the site and welcome any input. Permission to use data is gratefully received, as is the contribution of time to add data. Of particular interest are high quality, accurately identified images of live plants, notes on uses and cultivation methods. To become more involved in the Araceae site, please

register on <http://araceae.e-monocot.org>, or email me. If you would like to get involved with or find out more more about the project, please contact enquiries@e-monocot.org.

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