

Early Events in Monocot Evolution

20th – 22nd July 2010

A joint meeting of the Royal Botanic Gardens, Kew and the Linnean Society of London

Organised by **Dr Paul Wilkin** (Royal Botanic Gardens, Kew)

Sponsored by the Annals of Botany, the Systematics Association
and the Linnean Society of London



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The monocotyledons represent a major subgroup of flowering plants, with many species of economic and/or ecological significance. They include food crops such as cereal grasses, palms, bananas, taros, yams and onions, and also many horticultural plants such as lilies, orchids, palms, bromeliads and sedges, some of which are critically endangered in the wild. Recent new research on both extant and fossil monocots has significantly increased our knowledge of their biology and evolution.

Despite these advances, several questions remain, especially with respect to some aspects of early-divergent monocots and higher-level ordinal relationships. New comparative data on monocot evolution & systematics are beginning to emerge on an unprecedented scale. Future research will address whole-genome phylogenetics and character trait evolution in relation to global patterns of dispersal and diversification.

This three-day meeting, held in honour of RBG Kew's Araceae specialist Simon Mayo on his official retirement, will focus on early branches of the monocot phylogeny. It will include fossils, monocot origins and relationships among alismatid and lilioid monocots. The meeting is timed to occur in mid-cycle for the regular larger-scale and more inclusive Monocot Meetings (between Monocots IV, Copenhagen, 2008 and Monocots V, New York, 2013). Oral presentations will be published in a planned *Systematics Association* volume.

Scientific Programme

The conference will be held on 20th – 22nd of July 2010 at the Linnean Society of London and the Royal Botanic Gardens, Kew. A series of invited papers will follow three main themes:

- Monocot origins and relationships, including fossils
- Evolution and systematics of early-divergent monocots
- Deep monocot relationships: early divergence of lilioid monocots

Day 1 – July 20th 2010 – The Linnean Society of London

09.00 Registration and Introduction

Session 1: Monocot origins and relationship. Chair: Paul Wikin

09.30 Dr Sean Graham – *Progress in reconstructing the early splits in monocot phylogeny*

10.00 Dr Andy Jones – *Global patterns in monocot phylogeny*

10.30 Dr Selina Smith – *Using 3D data to advance early monocot paleobotany*

11.00 Tea & Coffee

11.30 Dr Carol Furness – *Pollen of early-divergent monocots and comparison with pandans and yams*

12.00 Professor Dmitry Sokoloff – *Early evolution of the monocot flower*

12.30 Lunch

Session 2: Evolution and systematics of Alismatales. Chair: Bill Baker

14.00 Dr Margarita Remizowa – *Comparative floral morphology in Posidoniaceae and Ruppiaceae (Alismatales)*

14.30 Dr Sabine von Mering – *Phylogeny and systematics of the re-circumscribed Juncaginaceae – a cosmopolitan wetland family*

15.00 Tea & Coffee

15.30 Dr Norio Tanaka – *Evolutionary study of pollination mechanism in the Hydrocharitaceae*

16.00 Dr Dennis Stevenson – *Character transformations in the alismatids*

16.30 [Dr Donald Les – *Evolution of alismatid aquatics*]

17.00 Poster session and reception at the Linnean Society

20.00 Close

Day 2 – July 21st 2010 – The Linnean Society of London

Session 3: Araceae, Brazil & eTaxonomy. Chair: Dave Simpson

09.30 Dr Paul Wilkin – *eMonocot: biodiversity informatics for monocots and monocot systematists*

10.00 Dr Ana Maria Giuliatti – *The role and importance of Brazilian researchers in monocot taxonomy and phylogenetic research*

10.30 Tea & Coffee

11.00 Professor Mark Chase – *Molecular phylogenetics of Araceae*

11.30 Dr Simon Mayo – *Aroid phylogeny and 180 years of Araceae classification*

12.30 Lunch

Session 3. (cont.). Chair: Paula Rudall

14.00 Dr Marc Gibernau – *Floral character evolution in Araceae*

14.30 Professor Denis Barabé – *Aroid floral morphogenesis in relation to phylogeny*

15.00 Tea & Coffee

Session 4: Early divergence of lilioid monocots.

15.30 Dr Robert Scotland – *The origin of the daffodil corona*

16.00 Dr Graça Sajo – *Structure and development of unusual floral structures in Velloziaceae and their close relatives (Pandanales)*

16.30 Professor Jerrold Davis – *After the origin: diversification among the lilioid and commelinid monocot lineages*

16.30 General discussion

17.00 Close

Conference Dinner at Royal Botanic Gardens, Kew

Day 3 – July 22nd 2010 – Royal Botanic Gardens, Kew

9.30am – 16.00pm

Opportunities to hold informal meetings/study the collections

Posters

All participants are invited to present posters at the conference. Poster abstracts should be submitted by 1 March 2010. We recommend early submission as poster space will be limited. Abstracts (maximum 200 words) should be prepared in Microsoft Word and sent by email to p.wilkin@kew.org. Full names and affiliations of all authors should be provided. Poster size must not exceed 53cm high x 83cm wide landscape.

Tour of the Collections at Kew

The living monocot collection at Kew is extremely rich and varied and represents one of the foundations of Kew's monocot research programme. In the afternoon of the 22nd of July, participants will be invited to join Kew's monocot experts on free guided tours of the collections. At that time of year, the geophytic lilioid monocots and Arceae in our Alpine collections, the Jodrell Glass and the Woodland Garden will be in their peak flowering period. Kew also has an extensive living collection of largely natural source tropical Araceae with *ca* 1000 accessions and over 500 taxa, with particular strengths in *Anthurium*, *Philodendron* and also in Asian and African aroids. There are also many tropical monocot taxa in the Great Glasshouses and Lower Nursery.

For more information about the conference, details of accommodation and directions to the Linnean Society, please contact:

Events, The Linnean Society of London, Burlington House, Piccadilly, London, W1J 0BF
Tel.: +44 (0)20 7434 4479 Fax: +44 (0)20 7287 9364 Email: events@linnean.org

General information about the Royal Botanic Gardens, Kew can be found at www.kew.org. Kew is easily reached from central London by the underground train network or via the London Waterloo-Kew Bridge suburban South West Trains service.

Organising committee: Paul Wilkin, Bill Baker, Anna Haigh, Paula Rudall, Dave Simpson & Odile Weber (Royal Botanic Gardens, Kew). The symposium has received generous financial assistance from the Systematics Association, Annals of Botany, the Linnean Society of London and the Royal Botanic Gardens, Kew

For registration please visit www.linnean.org and visit our upcoming events page to download your registration form.