Early angiosperm diversification in the Albian of southeast Australia: implications for flowering plant radiation across eastern Gondwana

Vera A. Korasidis, Barbara E. Wagstaff, Stephen J. Gallagher, Ian R. Duddy, Anne–Marie P. Tosolini, David J. Cantrill, Martin S. Norvick

PII: S0034-6667(16)30066-5
DOI: doi: 10.1016/j.revpalbo.2016.04.005
Reference: PALBO 3743

To appear in: *Review of Palaeobotany and Palynology*

Received date: 8 July 2015
Revised date: 3 April 2016
Accepted date: 9 April 2016

Please cite this article as: Korasidis, Vera A., Wagstaff, Barbara E., Gallagher, Stephen J., Duddy, Ian R., Tosolini, Anne–Marie P., Cantrill, David J., Norvick, Martin S., Early angiosperm diversification in the Albian of southeast Australia: implications for flowering plant radiation across eastern Gondwana, *Review of Palaeobotany and Palynology* (2016), doi: 10.1016/j.revpalbo.2016.04.005

Early angiosperm diversification in the Albian of southeast Australia: implications for flowering plant radiation across eastern Gondwana.

Vera A. Korasidis[a]*, Barbara E. Wagstaff [a], Stephen J. Gallagher[a], Ian R. Duddy[b], Anne–Marie P. Tosolini[a], David J. Cantrill[c], Martin S. Norvick[a]

[a]School of Earth Sciences, The University of Melbourne, Victoria, 3010, Australia.

[b]Geotrack International, Pty. Ltd. 37 Melville Road, Brunswick West, Victoria, 3055, Australia.

[c]Royal Botanic Gardens Victoria, South Yarra, Victoria, 3141, Australia.

*Corresponding author at: School of Earth Sciences, The University of Melbourne, Victoria, 3010, Australia. Tel: +61 412 199 140; *Email address:* verak@student.unimelb.edu.au (V. A. Korasidis).

KEY WORDS: Early angiosperms; angiosperm migration; Cretaceous; palynology; biostratigraphy; Otway Basin

Abstract

This study provides the first record of the high diversity and abundance of Victoria's earliest angiosperms from outcrops in the non–marine upper Eumeralla Formation of the Otway Basin. The biostratigraphic schemes established for the Albian of Australia are re–evaluated using more reliable and widespread index species, resulting in the construction of a high–resolution Albian biostratigraphy in the Otway Basin. New localities in the uppermost outcrop of the Eumerella Formation contain spore–pollen assemblages that cannot be placed in the existing scheme and a new Upper *Phimopollenites pannosus* Subzone is recognized. The correlation of the *P. pannosus* Zone to the geochronological timescale was re–assessed and shows that it is 103–101.51Ma, giving a late