Quaternary Vegetational, Environmental and Climatic History of the Lower Taieri Plain, East Otago, New Zealand.

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A thesis presented in partial fulfilment of the requirements for the Degree of Master of Science in Quaternary Science at Massey University, Palmerston North, New Zealand.
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by Regan O’Brien

ERRATUM SHEET

References made to McGlone and Wilmhurst (1999) on the following pages refer to McGlone and Wilmhurst (1999a)

Page 57, 2nd paragraph, 15th line
Page 60, 2nd paragraph, 11th line
Page 138, 1st paragraph, 11th line
Page 140, 1st paragraph, 11th line
Page 148, 2nd paragraph, 12th and 21st lines
Page 149, 2nd paragraph, 16th line

Page 72, 2nd paragraph, 11th line - the text reference should read Macphail and McQueen (1983) not Macphail and Mckellar (1983).


Page 55, 2nd paragraph, 11th line - text reference should read McGlone et. al. (1997b) not McGlone et. al. (1997).

Page 21 - Figure 2.4 - text reference should read after Tauber, 1965, not Tauber, 1968.

Page 33 - Figure 3.3 - text reference should read Pillans, 1991, not Pillans, 1999.

MISSING REFERENCES

The following references were inadvertently left off the reference list:


Goppert, H. R. (1836). De floribus in statu fossilis comentatio. - Nov. acta acad. Leopold. - Carol. natur. cur. 18, 547-572


ADDITIONAL COMMENTS

Page 16, 1st paragraph, 8th line - Callitriche is actually tricolpoid or tetracolpoid. Another example of an inaperturate grain from the New Zealand flora is Beilschmiedia tawa.

Page 31, 1st paragraph, 5th line - Asteraceae is now known to have been in New Zealand since the Oligocene.

Page 75 - the diagram depicting the core stratigraphy shows a silt/clay band extending from 61.76m to approx. 50m. This is incorrect, the silt/clay band should extend to 54.48m.
ABSTRACT

This project presents the palynology of the 154m Waipori 99-1 long core taken from the Lower Taieri Plain, east Otago, New Zealand. The current vegetation and climate are reviewed along with the geological and geomorphological setting of the Taieri Basin. Reviews are given on the history of New Zealand's vegetation since the Late Cretaceous and on the late Pleistocene and Holocene vegetation and climate of southern New Zealand. The field and lab techniques used in the course of this project are detailed.

The Waipori 99-1 long core contained a number of extensive glacial aggradational gravel sequences. These are separated in places by interbedded fine sediments which were found, for the most part, to have been deposited during warm climate periods. Subsidence within the basin has determined which sediments survive in the record. Periodic subsidence and fluvial erosion have resulted in a discontinuous sedimentary sequence. Polliniferous sediments were found only above -103m. Pollen analysis suggests that the sediments may date back as far as the mid Quaternary. Dating on the core poorly constrains sediments which pre-date the Holocene. The pollen evidence presented in this project is used to create a number of possible chronological lines along which to interpret environmental information derived from the core. No particular line is fully endorsed by the project however.

As many as four, and possibly five, warm climate pollen assemblages are recognised. Pollen analysis suggests that during these warm periods, podocarp-broadleaf forests occupied the basin. *Prumnopitys taxifolia* was the most consistently common podocarp in the region. *Fuscospera* beeches appear to have once been more common in the area in contrast to the present day. *Dacrydium cupressinum* was apparently absent from the area during the mid to late Quaternary, expanding into the basin only in the mid Holocene. The Holocene vegetational, climatic and environmental record is in agreement with others published from southern New Zealand.
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