New Zealand Late Jurassic To Eocene Dinoflagellate Biostratigraphy – A Summary

by Graeme J. Wilson*

with 7 figures

Abstract. The stratigraphic distribution of approximately 120 useful taxa from the Heterian (Late Jurassic) to Runangan (Late Eocene) interval is summarised. Twenty one dinoflagellate zones are recognised and these are compared briefly with documented Australian dinoflagellate zones and with other New Zealand biostratigraphic schemes.

Introduction

This biostratigraphic summary is based primarily on a study of dinoflagellates from New Zealand key sedimentary sequences. The localities (Fig. 1) include most of the type sections for the New Zealand Cretaceous to Eocene marine sequence. The Late Jurassic material is from the Torlesse Supergroup in the Kaiwara Valley area and, although geographically remote from the type sequence for the N.Z. Late Jurassic, it is well dated by macrofossils; the main Jurassic reference sequence at Kawhia Harbour has so far proved unproductive. The Early and Mid Cretaceous data have been obtained largely from a study of the type sections in Koranga River, Motu River and Mangatainane Stream, supplemented by other localities in Raukumara Peninsula and Marlborough. The Late Cretaceous material has been obtained from key sections at Haumuri Bluff and Waipara River, supplemented by other localities in Canterbury, Raukumara Peninsula, Northland and Hawkes Bay. The type sections for the New Zealand Cretaceous stages are described by Wellman (1959) whose units, although now somewhat modified, still form the basis for the subdivision of the New Zealand Cretaceous. The earliest Tertiary material has been obtained from key sections at Waipara, Waipawa and Te Uri Stream, while the Mid to Late Eocene samples were collected mainly from the North Otago area (Hampden and Oamaru) and from Point Elizabeth and Cape Foulwind on the West Coast. Stratigraphic columns for New Zealand Paleogene stratotypes are illustrated in summary diagrams by Hornibrook (in Hoskins 1982, p. 8).

* Author’s address: Dr. Graeme J. Wilson, New Zealand Geological Survey, P.O. Box 30368 Lower Hutt, New Zealand.