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OTWAY BASIN

PALYNOLOGICAL ZONATION OF
NARILAWONG - 13 AND MYANYN

- 2 BORES BY: DR. M.E. DETTMANN

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PALYNOLOGICAL ZONATION OF M.D.V. NARRAWONG -13 AND
MYAMYN -2 BORES

At the request of Shell Development (Australia) Pty. Ltd. core samples taken from two Mines Department of Victoria bores, Narrawong -13 and Myamyn -2, sunk in the Otway Basin have been examined palynologically for age determination. The samples provided well preserved microfloras which enable palynological zonation of the sediments as outlined below.

Narrawong -13 bore

Proteacidites confragosus Zonule

Core 10 (1885-1905 feet) is tentatively assigned to the Proteacidites confragosus Zonule which is defined by Harris (1970) on the basis of the association of Proteacidites pachypolus and P. aff. pachypolus. Other species quoted by Harris as diagnostic of the zonule are not yet published and hence supporting criteria for this zonal attribution have not been established in the present investigation. The P. confragosus Zonule is considered to be of Middle Eocene age (see Harris 1970).

Cupanieidites orthoteichus Zonule

Cores 22 to 31 inclusive (3974-5621 feet) yielded microfloras containing Cupanieidites orthoteichus, diverse and abundant Proteacidites (including P. dilwynensis and P. reticulosabratus), fairly plentiful Triorites harrisii and Dilwynites granulatus, and infrequent Nothofagidites. The sediments are thus assigned to the Upper Paleocene Cupanieidites orthoteichus Zonule of Harris (1965, 1970).

The microfloas are composed chiefly of land-derived spores and pollen grains; dinoflagellate cysts occur spasmodically and appear to belong to undescribed species.

Myanym -2 Bore

Cupanieidites orthoteichus Zonule

→ Cores 5 and 7 (920-1413 feet) yielded microfloras diagnostic of the Upper Paleocene Cupanieidites orthoteichus Zonule. The microfloras are composed chiefly of spores and pollen grains; microplankton were not observed in the residues.

Gambierina edwardsii Zonule

G. consubulata

→ The microflora extracted from core 8 (1512-31 feet) includes common spores and pollen grains and infrequent microplankton. Species identified include Gambierina edwardsii, Phyllocladidites reticuloscaccatus, and Deflandrea delineata. This association suggests an horizon from within the upper portion of the Middle Paleocene Gambierina edwardsii Zonule of Harris (1965, 1970).

Tricolpites pachyexinus Zone

→ Well preserved spores, pollen grains, and microplankton were extracted from core 10 (1869-88 feet). Species represented include Tricolpites pachyexinus, Stereisporites viriosus, Deflandrea victoriensis, Odontochitina porifera, and Hexagonifera vermiculata.

→ Accordingly the sediments are assigned to the Senonian Tricolpites pachyexinus Zone of Dettmann and Playford (1969).

Tricolpites pannosus or Appendicisporites distocarinatus Zone

→ Cores 11 and 12C comprising sediments at 2049-58 feet and within the upper part of the interval 2228-48 feet yielded assemblages in which Tricolpites pannosus, Amosopollis cruciformis, Cicatricosisporites cuneiformis, and Kraeuselisporites jubatus are represented. The sediments may thus be regarded to be from within the Tricolpites pannosus or Appendicisporites distocarinatus Zones of Dettmann and Playford (1969). The absence of further diagnostic species within

the restricted microfloras precludes more precise zonal attribution. Nevertheless, the microfloras provide evidence for a late Albian or Cenomanian age of the sediments.

Coptospora paradoxa Zone

Core 12E taken from the basal portion of the interval 2228-48 feet provided a spore-pollen assemblage containing Coptospora paradoxa, Foraminisporis asymmetricus, and Rouseisporites simplex; angiospermous pollen was not observed. The horizon is accordingly assigned to the Middle -Upper Albian Coptospora paradoxa Zone of Dettmann and Playford (1969).

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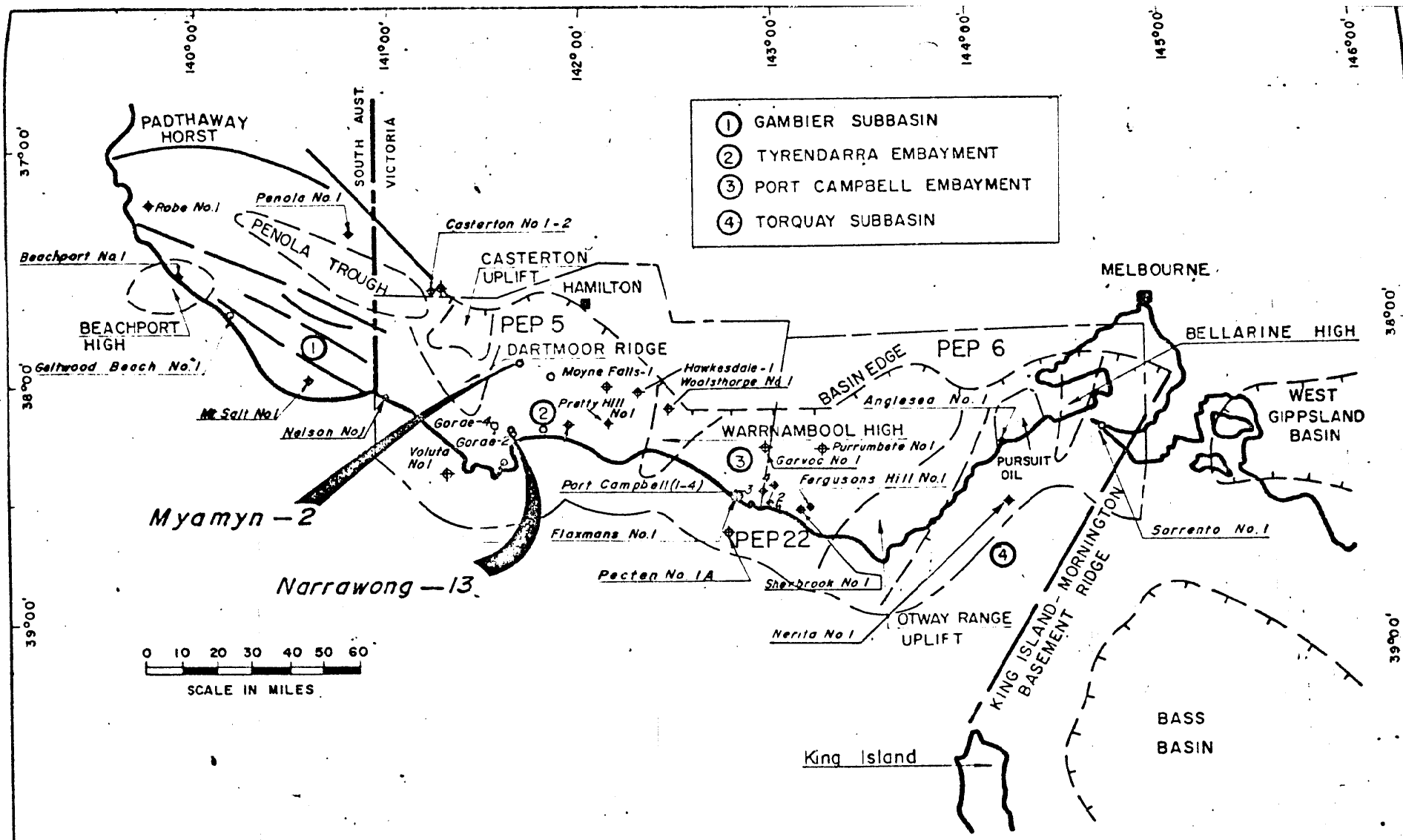


Fig 1

KEY MAP OF THE OTWAY BASIN