1977/25. Preliminary report on age determination of basalt samples from the Ringarooma 1:50 000 Sheet.

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Age determination of basalt samples from the Ringarooma 1:50 000 Sheet 59 (8415N) was carried out by Amdel on behalf of the Bureau of Mineral Resources for the Geological Survey of Tasmania. From an original twelve samples submitted only two were considered suitable for age determination whereas from a subsequent four samples three were suitable. All the samples from which an age determination was obtained are from the northern part of the Winnaleah-Ringarooma alkali basalt flows.

Of the two original samples, one, an olivine nephelinite (72-316)* gave an age of 15.9 ±0.6 Ma. This is consistent with the field relationships. The flow from which specimen 72-316 came overlies sediments containing microfloras that have been correlated with marine sediments of Langfordian age (Lower Miocene) by Harris (1968). The second, a pyroxene glomeroporphyritic alkaline olivine basalt (73-636)* gave an age of 159 ±6 Ma. This sample was obtained from a remnant of a flow that extruded through and overlies Mathinna Beds sediments. Whilst not conflicting with field relationships, the age of 159 ±6 Ma is considered anomalous due to a striking similarity in major, minor and trace element chemistry of the sample and other samples of the same petrological type to the first sample, and other samples from flows overlying Tertiary sediments.

The second batch consisted of three samples (W1-4, W2-1, W4-1) from remnants of the porphyritic alkali olivine basalt flow and one (W3-1) from a flow overlying Tertiary sediments. W1-4 gave an age of 16.0 ±0.3 Ma and W3-1, 15.6 ±0.3 Ma, both based on a 'total rock sample'. Due to alteration within the groundmass of W2-1 the sample was not suitable for dating as a 'total rock sample', but a pyroxene phenocryst concentration gave an age of 11 ±1 Ma. Sample W4-1 obtained from the same location as 73-636 was not considered suitable for dating.

SUMMARY

The date of 16 ±0.3 Ma for a sample of porphyritic alkali olivine basalt overlying Mathinna Beds sediments agrees very well with dates of 15.9 ±0.6 Ma and 15.6 ±0.3 Ma obtained from samples overlying Tertiary sediments. In view of these dates, the pyroxene concentrate age of 11 ±1 Ma and the basalt age of 159 ±6 Ma have been considered anomalous.

APPENDIX 1

List of samples

72-316:		Olivine nephelinite.
	Grid refs:	EQ720492 (59/707374)
	Amdel ref:	Basalt 3 - BMR - 2/1/0 - AN 1003/76
73-636:		Porphyritic alkali olivine basalt
W4-1:	Grid refs:	EQ658511 (59/639379)
	Amdel ref:	Basalt 1 - BMR - 2/1/0 - AN 1003/76
W1-4:		Porphyritic alkali olivine basalt
	Grid refs:	EQ661538 (59/643409)
	Amdel ref:	W1-4 - BMR - 2/1/0 - 1600/77

*See Appendix.

List of samples

W2-1:		Porphyritic alkali olivine basalt
	Grid refs:	EQ660518 (59/642387)
	Amdel ref:	WS-1 - BMR - 2/1/0 - 1600/77
W3-1:		Alkali olivine basalt
	Grid refs:	EQ724526 (59/712395)
	Amdel ref:	W3-1 - BMR - 2/1/0 - 1600/77

REFERENCE

HARRIS, W.K. 1968. Tasmanian Tertiary and Quaternary microfloras. Summary Report. *Palaeont.Rep.geol.Surv.S.Aust.* 5/68.

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