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**A RADIOCARBON DATE OF MOA BONE FROM  
WHAKAMOENGA CAVE, SITE U18/N4, NORTHEAST LAKE TAUPO**

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Among the moa bones excavated at Whakamoenga Cave were tracheal rings, claws and a pelvis which were accepted as evidence that moas were hunted and whole moas were brought to the cave intact (Leahy 1976:51). Two of the tracheal rings, from the lowest cultural layer in the cave, have returned a radiocarbon date (Table 1) which raises questions about the significance of the moa bones in the cave as evidence of moa hunting. If the date, measured by AMS on collagen from the bones, is correct then at least some of the moa bones were already subfossil at the time the cave was inhabited.

Table 1

Lab number	$\delta^{13}\text{C}$ (per mille)	C.R.A (years) BP)	std error (yrs)	Material dated	Provenance
NZA577	-24.78	4747	80	moa bone collagen from two tracheal rings of <i>Euryapteryx curtus</i>	Layer 11 , Occupation 1 Period 1 , Whakamoenga Cave

The cave is located only "a few chains" (Hosking 1962:22) from the edge of Lake Taupo (1 chain = 20m), and is only about 5m above present lake level (Ann Williams *pers. comm.*). The deposits on which the first occupation took place are lake shore sediments, described as igneous shingle and pumice rubble (Leahy 1976:39), which date from a time when the lake level was higher than it is today.

It is possible that the tracheal rings are from a dead bird washed into the cave when the lake level was higher, and that they were already present on or in the lake shore sediments when the cave was first occupied. Alternatively, it is possible that the tracheal rings are from a bird which died in the cave. That the cave was used by moas for nesting is suggested by a heap of moa eggshell found on the old shoreline deposit near the southwest wall of the cave (Leahy 1976:51).

If either possibility were the case, then upwards mixing of the bones is to be expected (Ambrose 1970). Digging holes for earth ovens would probably be enough to bring these and other bones to the ground surface and mix them into the lowest occupation layer. This type of disturbance is invoked by Leahy

(1976:51) to explain the occurrence of moa bone fragments in occupation layers 2 and 3.

If the tracheal rings were dug up, or people took them to the cave as subfossil bones, then other moa bones found in the cave may have a similar origin. The moa bones are thus open to more than one interpretation. The matter of whether or not some bones are from hunted moas may be resolved by further radiocarbon dates or by taphonomic analysis of the bones. In the meantime it is misleading to cite the moa bones from Whakamoenga Cave as evidence of moa hunting.

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### REFERENCES

- Ambrose, W., 1970. Archaeology and rock drawings from Waitaki Gorge, Central South Island. *Records of the Canterbury Museum*, VIII (5): 383- 4-37.
- Hosking, T. 1962. Report on the excavation of Whakamoenga Cave, Lake Taupo. *New Zealand Archaeological Association Newsletter*, 5(1): 22-30.
- Leahy, A., 1976. Whakamoenga Cave, Taupo, N94/7. A report on the ecology, economy and stratigraphy. *records of the Auckland Institute and Museum*, 13: 29-75