[RADIOCARBON, VOL. 21, No. 1, 1979, P. 95-106]

SYDNEY UNIVERSITY NATURAL RADIOCARBON MEASUREMENTS V

R GILLESPIE and **R** B TEMPLE

Sydney University Radiocarbon Laboratory, Department of Physical Chemistry, University of Sydney, N S W 2006, Australia

Experimental procedures and methods of age calculation are as previously described (Gillespie & Temple, 1976), except that BC/AD ages are not reported (resolution of 9th Radiocarbon Conference, 1976).

Lab no.	SUA date	Other no.	Other date	Ref
SUA-191/3	860 ± 85	ANU-2007	600 ± 70	Polach (pers commun)
SUA-354/3	380 ± 80	ANU-2008	340 ± 70	Polach (pérs commun)
SUA-MS24	$157.0 \pm 1.6\%$ Mod	ANU-2006	$154.5\pm0.6\%$ Mod	Polach (pers commun)

Interlaboratory cross checks and duplicates

SAMPLE DESCRIPTIONS

I. GEOLOGIC SAMPLES

A. Australia

Shoalhaven Valley series

Samples coll by M A J Williams, School Earth Sci, Macquarie Univ, Australia, from late Holocene granitic colluvial slope mantles in Upper Shoalhaven catchment (35° 55′ S, 149° 37′ E).

SUA-77. 1/M101

 2110 ± 205

 3080 ± 100

 255 ± 110

Charcoal from dicotyledons, 57 ± 7 cm below surface.

SUA-78. 2/M106

Charcoal from dicotyledons, 40 ± 5 cm below surface.

SUA-79. 3/M107

Charcoal from dicotyledons, 5 ± 2 cm below surface.

General Comment (MAJW): these dates and others from same area (Gak-1627, 1628, 2022) suggest that hillslopes in S Tablelands of NSW were unstable and streams aggrading between 4000 and 1500 yr BP. Preliminary ages for these samples pub by Williams (1978).

Point Stuart series

Samples coll by M A J Williams from chenier sequence at Point Stuart, Northern Territory (12° 13' S, 131° 52' E).

SUA-80. D1/1

3020 ± 85

Littoral shell from base of sandy beach ridge overlying littoral clays, 12 to 26cm below surface.

R Gillespie and R B Temple

SUA-81. D1/3	4490 ± 90
As above, 35 to 85cm below surface.	
SUA-82. D1/5	1725 ± 80
As above, 35 to 65cm below surface.	
SUA-82/2. D1/5	3195 ± 85
Individual non-cemented shells from SUA-82.	
	1020 - 20

 1030 ± 80 SUA-83. D1/7

Littoral shell from surface of active beach.

General Comment (MAJW): these chenier ridges all within 1m of present spring tide level. Dates show a late Holocene shoreline progradation of >1.4km since innermost chenier developed, and at least 0.88km since 4450 ± 85 yr BP. There is no evidence that sea level exceeded its present level in this area during last 4500 yr.

Broad Sound series

Samples coll 1972 by P J Cook, Bur Min Resources, Canberra, Australia, from Broad Sound, Queensland.

SUA-110. 71636146

30.700 ± 1200

Dead colonial coral from mouth of Styx R (22° 23' S, 149° 47' E) coll in sea water where corals no longer grow. Sample partly buried in intertidal mud, extensively recrystallized. Age regarded as minimum.

SUA-127. 71636039(S)

2950 ± 80

Oyster shell from chenier on E side of Herbert Creek (22° 28' S, 149° 57' E). Ages does not fit with chenier sequence on W side of Broad Sound (Cook & Polach, 1973); significance uncertain.

SUA-128. 71636147(S)

2430 ± 80

Shells from drill hole 7.9 to 8.5m below top of sandbank on Crocodile Banks (22° 20' S, 149° 53' E). Age indicates rapid offshore sedimentation in Broad Sound.

SUA-129. 7063611

$16,190 \pm 225$

Carbonate nodules from sea bottom, depth 12m (22° 17' S, 149° 44' E.)

SUA-130. 71636147(N)

level was much lower than present ca 16,000 yr BP.

16.180 ± 440 Re-collection of carbonate nodules from same area as SUA-129. Com*ment* (PIC): carbonate nodules cover much of sea floor at N end of Broad Sound, believed to have formed within soil profile and indicate that sea

SUA-126. 71636059(E)

1720 ± 80

Wood from dead mangrove stump, partly buried in saline mud, Torilla Plain (22° 23′ S, 149° 58′ E).

96

Mangrove wood, 1.8m below surface in Hoogly-Waverley Creek area (22° 21' S, 149° 40' E), from auger hole.

SUA-132. 71636207 1100 ± 110

Wood, as above, 1.8m below intertidal surface mean.

SUA-133.71636208 4125 ± 310

Wood as above, 1.6 to 2m below surface, Torilla Plain (22° 25' S, 149° 59' E).

SUA-134.	71646209
Wood as ab	ove, 0.9 to 1.5m below surface.

SUA-136. 71636211

Wood as above, 1.8 to 2.1m below surface.

SUA-137. 71636212

Wood as above, 2.5m below surface (22° 25′ S, 149° 54′ E).

SUA-138.	71636213	5785 ± 550
----------	----------	----------------

Wood as above, 2.5 to 2.8 m below surface (22° 25' S, 150° 07' E).

SUA-139. 71636214 6000 ± 400

Wood from diamond drill hole (22° 28' S, 150° 00' E).

General Comment (PJC): samples of wood were pretreated to remove humic acids. Ages suggest that sea level stabilized ca 6000 yr BP, and since then there has been rapid seaward progradation of shoreline with varied sedimentation rates in Broad Sound.

Lake Curlip series

Organic mud samples coll by P G Ladd, Botany Dept, Univ Melbourne, Australia, from sediments in Lake Curlip, near Orbost, Victoria (37° 45′ S, 148° 35′ E).

SUA-159. LC200

Sample 2m below surface of swamp surrounding lake, near level of change from open water to swamp vegetation conditions according to sedimentation and pollen evidence.

SUA-160. LC1000

5200 ± 210

 1685 ± 150

 1110 ± 250

 2450 ± 210

 5850 ± 155

Sample from base of peat and estuarine mud core below swamp. Details of site pub (Ladd, in press).

Gulf of Carpentaria series

Marine shell samples coll by K Grimes, S Needham, and J Smart, Bur Min Resources, Canberra, Australia, from sites near Gulf of Carpentaria, N Australia. Subm by H F Doutch, same address.

SUA-183. 70795047

5345 ± 155

Sample from beach ridge N of Snake Creek, ca 5km inland from coast (16° 42′ S, 141° 15′ E).

SUA-184. 70795050 850 ± 80 Sample from beach rock anterior to youngest beach ridge, 300m from coast (16° 42' S, 141° 12' E).
SUA-185. 72797020 4170 ± 90 Sample from youngest beach ridge, W bank of Kirke R (13° 53' S, 141° 23' E).
SUA-197A. 72796243 1380 ± 80 Gasteropod shells from top of beach at Edward River Mission (14° 54' S, 141° 37' E).
SUA-197B.72796243500 ± 75Bivalve shells, same site as SUA-197A.
SUA-198.72796244 860 ± 80 Sample from beach ridge E of airstrip near Mission.
SUA-199. 72796245 1030 ± 75 Sample from beach ridge W of Mission. 1030 ± 75
SUA-200. 72796246 3970 ± 90 Sample from beach ridge E of Mission. 3970 ± 90
SUA-201A. 72797011 5335 ± 85 Gasteropod shell from oldest beach ridge on W bank of Archer R ($13^{\circ} 25' 30''$ S, $141^{\circ} 41'$ E).
SUA-201B.727970114430 ± 85Bivalve shell, same site as SUA-201A.
SUA-202. 72797025 1035 ± 95 Fragmented shell from youngest beach ridge S of Archer R mouth (13° 23' S, 141° 38' E). 1035 ± 95
SUA-203. 72797026 945 ± 70 Samula class to gits of SUA 202 945 ± 70
Sample close to site of SUA-202. General Comment (HFD): dates are acceptable in that seaward sites younger than inland beach ridges. Gasteropod and bivalve ages from same site differ for unknown reasons, with gasteropods giving ages in better agreement with other data. Sampling does not provide sufficient

Mallacoota Inlet series

Anadara trapezia shells coll by P J Cook from Mallacoota Inlet, Victoria (37° 32' S, 149° 44' E).

evidence for truncation of beach ridge sets. All ages so far <6000 BP, a

possible date for beginning of progradation of coastline.

SUA-231. 71636001

 1420 ± 80

Sample from near Rangers house.

98

SUA-232. 71636004

 1500 ± 70

 710 ± 80

Sample from 1.5m above present sea level.

SUA-233. 71636006

Sample from 3m above present sea level.

General Comment (PJC): all 3 samples probably from aboriginal middens not directly related to sea level.

SUA-408. CL3/3

2410 ± 125

130 ± 2% modern

 3880 ± 105

Sample of compacted organic mud with high silt content, exposed in stream entering Club Lake, Kosciusko Natl Park, N S W, (36° 25' S, 148° 18' 15" E). Coll by A R H Martin, Botany Dept, Univ Sydney, Australia. *Comment* (ARHM): age expected to be >6800 yr BP date on similar material coll 20m N of present site (Gak-393). Young date possibly explained by erosion of older sediments and deposition of deltaic stream beds during last 3000 yr. Agrees reasonably with similar material dated at 1800 ± 100 (Gak-2790) from another stream entering lake at 3m higher alt.

SUA-451. Belarah 1

Peat coll by A R H Martin from 62 to 71cm below surface on Kanangra-Boyd Plateau, N S W (33° 54' S, 180° 30' 40" E). *Comment* (ARHM): modern date, needs more detailed sampling for possible explanation.

SUA-433. Triangle Cliffs

Charcoal coll by K Grimes, Geol Survey Queensland, Brisbane, Australia, from buried soil on Fraser I., Queensland (25° 02' S, 153° 12' E). Dates transgression of sand dunes at Triangle Cliffs which may be related to slight lowering of sea level. Relatively young age suggests tentative chronology based on correlations with Gippsland, Victoria, is in error. Provides calibration point for correlation between soil depth and age of parent sand.

SUA-505. North Pine

Charcoal coll by D Tresize, Geol Survey Queensland, from crossbedded sand and gravel deposits overlain by 1.2m gradational clay soil at mouth of One Mile Creek, tributary of N Pine R, S E Queensland (27° 16' 45" S, 152° 56' 56" E). Date represents lower limit for age of Strathpine terrace assoc with Pine R.

SUA-561. B12

3890 ± 100

 5200 ± 110

Shell (*Cymbiola magnifica*) coll by A Stephens, Geol Survey Queensland, from humic sandrock outcropping 0.63m below mean sea level on W side of Bribie I., Queensland (26° 49' 15" S, 153° 07' 45" E). Date is maximum for sandrock formation at this level.

Victorian coast series

Marine shell coll by E D Gill, Natl Mus Victoria, Melbourne, as part of continuing study of coastal processes.

SUA-87. 1972/7

Opercula of Subninella undulata shells from midden on Cape Reamur (38° 23' S, 142° 08' E).

SUA-88. 1972/8

Limpet shells from midden on beach W of Goose Lagoon, near Port Fairy (38° 24' S, 142° 11' E).

SUA-89. 1972/9

Limpet shells from midden on Cape Reamur (38° 23' S, 142° 09' E).

SUA-90. 1972/10

Shells from midden overlying boulder bed near Apollo Bay (38° 27' S, 144° 05' E).

SUA-191. 1973/7

Shell from midden in small cave at E end of boulder bed at Point Castries (38° 30' S, 144° 02' E).

General Comment (EDG): dates from middens fall into several groups thought to be related to coastal processes rather than intermittent occupation.

SUA-186. 1973/2

Marine still-water facies shells from black silt 1.7m above low water level, near Spring Creek, Torquay (38° 21' S, 144° 20' E). Dates Flandrian transgression at this site.

SUA-187. 1973/3

Shell Subninella undulata from slightly emerged boulder bed, same site as SUA-191. Other evidence of this emergence at Port Fairy dated 2840 BP (Gak-3917).

SUA-188. 1973/4 1275 ± 89

Shell from vegetated shell grit flat, W side of Cape Reamur (38° 24' S, 147° 05' E).

SUA-189. 1973/5

Shell from vegetated shell grit flat, E side of Cape Reamur, as for SUA-188, 100 to 112cm below surface.

SUA-190. 1973/6

Shell, 15 to 24cm below surface, same site as SUA-189. Although result of high energy beach, these flat, slightly emerged terraces increase in age with depth.

Western Victoria volcanic series

Samples coll by E D Gill, Natl Mus Victoria, Melbourne, from volcanic sequence near Lake Weeranganuck (38° 12′ S, 143° 17′ E).

https://doi.org/10.1017/S0033822200004227 Published online by Cambridge University Press

100

1495 ± 80

 995 ± 80

1020 ± 80

 5525 ± 100

 2920 ± 80

 1075 ± 80

2650 ± 85

 1350 ± 80

 3115 ± 85

SUA-266. 1973/8

Pedogenic carbonate modules from soil on top of clay dune.

SUA-267C. 1973/9

Carbonate from bones of extinct marsupials in lacustrine sediments underlying dune of SUA-266 (cf GS-152, 6435 BP).

SUA-267P. 1973/10

Acid insoluble residue from bones of extinct marsupials, same as SUA-267C.

General Comment (EDG): dating of this sequence still unresolved, since Coxiella sp shells from same bed as bones gave date, 25,300 BP (Gak-986).

SUA-268. 1973/11

Pedogenic carbonate in ejectamenta from Red Rock volcanic complex near Albie (38° 15′ S, 143° 30′ E). *Comment* (EDG): date agrees with geomorphologic estimate, may be compared with similar volcanics at Tower Hill (7500 BP) and Lake Condah (6240 BP).

Western NS W series

Samples coll by R J Wasson, Dept Biogeog & Geomorphol, ANU, Canberra, as part of study on alluvial fan stratigraphy.

SUA-166. Dillon Creek

Charcoal fragments embedded in youngest alluvium on surface of small alluvial fan on W side of Belarabon Range, SW of Cobar (31° 59' S, 144° 53' E).

SUA-279. Belarabon 2

Soil carbonate nodules from palaeosol developed in top of small alluvial fan, same site as SUA-166.

SUA-282. Eldee 1

Charcoal fragments in base of youngest alluvium on Eldee fan, W side of Barrier Range (31° 40′ S, 141° 08′ E).

SUA-284. U Fan 2

Carbonate nodules from palaeosol developed in upper part of oldest alluvium exposed in Umberumberka Fan, W side of Barrier Range (31° 49' S, 141° 06' E).

Naracoorte series

Samples coll by F S Aslin and N S Pledge, South Australian Mus, Adelaide, from Henschke's Cave, near Naracoorte (56° 59' S, 140° 46' E).

SUA-140. A3

Dispersed charcoal fragments from silt deposit containing bones of living and extinct species, 105 to 120cm below surface near base of deposit in Area A3.

https://doi.org/10.1017/S0033822200004227 Published online by Cambridge University Press

$16,500 \pm 260$

>35.000

$11,160 \pm 380$

$27,900 \pm 1100$

 5080 ± 1060

 4560 ± 95

7810 ± 115

 4915 ± 105

 $11,980 \pm 200$

SUA-234. Al

 $+ 2400 \\ 33,800 - 1850$

Charcoal from 30 to 75cm below surface in Area A1, assoc with extinct fauna, including new species of giant mallee fowl (*Progura naracoortensis*) (van Tets, 1974).

General Comment (NSP): dates correspond to apparent transitional climatic episode as indicated by fossil assemblage, which shows combination of humid/forest and arid environment animals. Excavations continuing to identify faunal changes related to climate.

Skull Cave series

Samples coll by J K Porta, subm by A Baynes, Western Australian Mus, Perth, from cave in dune limestone near Augusta, W A (34° 17' S, 115° 06' E).

SUA-227.

 2885 ± 85

Charcoal from 21 to 28cm below surface.

SUA-228.

 7865 ± 115

Charcoal from 100 to 115cm below surface.

General Comment (AB): dates show deposit spans large proportion of Holocene, SUA-227 dates last survival of *Pseudomys albocinereus* in this district and arrival of *Rattus tunneyi*.

B. Irian Jaya

Carstenz series

Samples coll by J A Peterson, Dept Geog, Monash Univ, from basins below glaciers in Carstenz region (4° 04' 58" S, 137° 09' 48" E), to check for limestone dilution effect.

SUA-287A. CGE12A 102.5 ± 1.0% modern

Living algae from pond in granite rock basin.

SUA-287B. CGE12B

112.4 ± 0.9% modern

Living wood from stems of *Caprosma* sp, same site as SUA-287A.

SUA-289A. CGE14A

133 ± 2% modern

155 ± 2% modern

Living algae from limestone basin pond.

SUA-289B. CGE14B

Living wood from stems of *Caprosma* sp.

General Comment (JAP): samples all show bomb effect so that incorporation of limestone carbonate should not be a problem. Spread of activities probably related to biologic age of samples. Supports dates obtained on these materials (Gillespie & Temple, 1976; Gillespie, 1976).

II. ARCHAEOLOGIC SAMPLES

A. Australia

Ord Valley series

Samples coll by C E Dortch, Western Australian Mus, from Miriwun rock shelter, now permanently inundated by Lake Argyle (16° 18' S, 128° 42' E). Other dates in this series SUA-54-58; ANU-1129, 1130; Gak-1767, 1768.

SUA-141. B2084

1675 ± 185

Charcoal from depth 28 to 46cm in upper part of shelter, deposit containing diverse faunal remains and point and blade artifact assemblage typical of Ord Valley late stone industrial phase.

SUA-142. B2087

2980 ± 95

Charcoal from depth 50 to 70cm in central part of deposit, containing stratigraphically uppermost assemblage of Ord Valley early phase artifacts and diverse food remains. Date regarded as minimal for early phase assemblage, which is similar to that of basal layer dated at 17,980 \pm 1370 yr BP (ANU-1008).

Macleay River series

Samples coll by G Connah, Dept Prehistory, Univ New England, Armidale, from aboriginal midden "Clybucca 3" in lower Macleay Valley (30° 56' S, 152° 55' E).

SUA-274. CLY 3.72.56	3360 ± 115

Charcoal 30 to 40cm below modern surface.

SUA-275. CLY 3.	72.102	4260	±	120
-----------------	--------	------	---	-----

Charcoal 60 to 70cm below surface.

SUA-276. CLY 3.72.112 5120 ± 145

Charcoal 90 to 110cm below surface.

General Comment (GC): midden composed mainly of oyster and cockle shells, formed over sand ridge at head of bay in Pleistocene shoreline, 10km inland from present shoreline. Assoc cultural material comprised backed blade industry with minor worked bone. Dates may be compared with one from "Clybucca 1" midden on same shoreline of 3850 ± 140 (Gak-2457).

Swansea Channel series

Samples coll by L K Dyall, Dept Chemistry, Univ Newcastle, from shell midden between Lake Macquarie and Pacific Ocean (33° 06' S, 151° 40' E).

SUA-322. Swanch 3

 2080 ± 100

Charcoal assoc with cremated skeleton in midden.

SUA-421. Swanch 4

7530 ± 140

Charcoal from occupation level 24 to 29cm below modern surface of midden. *Comment* (LKD): surprisingly early date for level containing backed blade industry. Other dates from this site SUA-150 and -238 (Gillespie & Temple, 1976).

Sandstone Point series

Samples coll by L Haglund, Dept Anthropol, Univ Sydney, from complex of middens on Sandstone Point, S E Queensland (27° 05' S, 153° 07' E).

SUA-478. 42/G3 620 ± 95

Charcoal from black, loose midden deposit containing crushed shell and fish vertebrae, below white layer probably due to lime burning that destroyed upper part of midden.

SUA-479. 42/G3b

 780 ± 95

Charcoal from base of midden, contains whole shells.

General Comment (LH): size and depth of middens with complex stratigraphy unique in this area.

Bribie Island series

Samples coll by Haglund from W beach on Bribie I., S E Queensland (27° 02′ S, 153° 07′ E).

SUA-480. S3/C50b

 450 ± 95

Charcoal from top of midden deposit.

SUA-481. S3/C50d

 670 ± 95

Charcoal from base of midden, 25cm below SUA-480.

General Comment (LH): similar age of formation to Sandstone Point series above, lithic material of pebble tools and working edges with use-polish typical.

Walyunga series

Samples coll by R H Pearce, Dept Anthropol, Univ Western Australia, from partly vegeated dune in Walyunga Natl Park (31° 44' 20" S, 116° 03' 42" E).

SUA-508. C18-14

3220 ± 100

Charcoal from 60cm below surface, postdates end of regular use of Bryozoan chert. Distinct change in technology toward regular use of backed blades.

SUA-509. C18-19

6135 ± 160

Charcoal from 90cm below surface, related to conclusion of period with no major technology change, Bryozoan chert readily available.

SUA-510. C18-32

Charcoal from 160cm below surface, dates 1st occupation at this site.

SUA-632. C18-4-100

Charcoal from 20cm below surface, predates dense, possibly eroded, artifact horizon.

SUA-633. C18-17-36

Charcoal from 76 to 79cm below surface, predates regular use of mylonite and introduction of flat adze, latest use of Bryozoan chert.

General Comment (RHP): dates suggest source of chert was cut off by rising sea level (Pearce, 1977).

B. Pacific Islands

Santa Cruz series

Samples coll by R C Green, G Hendron and G Ward, Dept Anthropol, Univ Auckland, N Z, from islands in Santa Cruz group.

SUA-111. BS-Sz-8:C-2

Shells from 45 to 60cm below surface at Nanggu village, Nendok (10° 45' S, 166° 10' E). Date agrees with estimates based on Lapita sites elsewhere in Oceania, pottery thought to be early Lapita tradition.

SUA-112. BS-Sz-8:C-3

Shells from 40 to 60cm below surface in another part of same deposit as SUA-111, supports above interpretation.

SUA-113. BB-8-1-C-1

Charcoal from fire pit in coralline sand under rock shelter on Santa Ana I. (10° 50' S, 162° 31' E). Very small sample subm in support of SUA-114, below.

SUA-114. BB-8-1, Sq 51, 52

Shell, same site as SUA-113. Date suggests earlier estimate for potterybearing layer on Santa Ana (I-2878) may have represented stratigraphically mixed sample. Charcoal date SUA-113 confirms reliability of this shell date.

SUA-115. BS-DL-1:C-1

Charcoal from 116cm below surface of rock shelter on Kolua (9° 57' S, 167° 15' E). Date is reasonable for earlier use of shelter located on only landing beach on this island.

SUA-116. BS-DT-2:VV-53

Charcoal from oven at top of old beach line at Kahula village, Taumoko I. (9° 57' S, 167° 13' E). Earth oven 40m from present beach line, covered by waterlaid sand containing pumice.

https://doi.org/10.1017/S0033822200004227 Published online by Cambridge University Press

2860 ± 250

 3050 ± 70

 500 ± 65

 530 ± 65

 3140 ± 70

 3250 ± 70

8000 ± 260

 1330 ± 100

 4560 ± 150

SUA-117. BB-2-7-C-44

380 ± 60

Charcoal from 156 to 158cm below surface in trench near Su'ena, W Ugi I. (10° 15' S, 162° 45' E). Unexpectedly late date when compared with I-6175.

SUA-230. BB-2-7-SS-44

Charcoal from 116cm below surface, same site as SUA-117. Check date agrees with SUA-117 and casts doubt on earlier date for stratigraphically higher sample, I-6175.

SUA-118. BS-Uw-1:2

Charcoal from oven at Haradewi, NE Ulawa (9° 45' S, 161° 55' E). Hamlet-type occupation assoc with chert working and shell ornaments.

SUA-119. BS-Uw-1:3

Charcoal from oven rakeout/midden, same location as SUA-118. Evidence for fishing and shell fishing, hamlet is in center of stone-walled garden complex.

SUA-120. BS-Uw-69:5

Charcoal from oven rakeout/midden at Ewewa, W Ulawa (9° 45' S, 161° 55' E). Site is low mound on coastal platform, assoc with intensive chert usage.

SUA-121. BS-Uw-69:6

250 ± 50 Charcoal from same site as SUA-120, showing faunal evidence suggesting smaller range of exploited environmental zones. Details of these sites pub by Green and Cresswell (1976).

REFERENCES

- Cook, P J and Polach, H A, 1973, A chenier sequence at Broad Sound, Queensland, and evidence against a Holocene high sea level: Marine Geology, v 14, p 253-268.
- Gillespie, R, 1976, Radiocarbon dates from Mount Jaya, in: Hope, G S et al, (eds), The equatorial glaciers of New Guinea, Balkema, Rotterdam, p 200-205. Gillespie, R and Temple, R B, 1976, Sydney University natural radiocarbon measure-
- ments III: Radiocarbon, v 18, p 96-109.
- Green, R C and Cresswell, M M (eds) 1976, South East Solomon Islands cultural history —a preliminary survey: Royal Soc New Zealand, Wellington, Bull 11.

Ladd, P G, 1978, Vegetation history at Lake curlip in lowland eastern Victoria from 5200 BP to present: Australian Jour Botany, in press.

Pearce, R H, 1977, Relationship of chert artefacts at Walyunga in southwest Australia to Holocene sea levels: Search, v 8, p 375-377.

Van Tets, C G, 1974, A revision of the fossil Megapodidae (Aves), including a description of a new species of Progura de Vis.: Royal Soc S Australia, Trans, y 98, p 213-224.

Williams, M A J, 1978, Late Holocene hillslope mantles and stream aggradation in the southern tablelands, NSW: Search, v 9, p 96-97.

 1200 ± 60

 400 ± 80

 940 ± 60

 170 ± 55