

**HIROSHIMA UNIVERSITY RADIOCARBON DATES I  
WEST AND SOUTH COASTS OF SRI LANKA\***

JINADASA KATUPOTHA\*\*

Department of Geography, Hiroshima University, 1-1-89, Higashi  
Senda Machi, Naka-ku, Hiroshima 730, Japan

The following list reports radiocarbon dates of geologic samples collected from the west, southwest and south coasts of Sri Lanka during August 1985. The tidal range on Sri Lanka coasts is very small, the lowest neap at  $-0.48\text{m}$  and highest spring at  $+0.52\text{m}$  from msl (data based on the standard point of Colombo, datum level  $0.38\text{m}$  below msl).

Radiocarbon age measurements were carried out at the Department of Geography, Hiroshima University Radiocarbon Dating Laboratory. The dates were obtained by liquid scintillation counting of methanol using a laboratory procedure (Fujiwara & Nakata, 1984). All coral, shell, and calcareous algae samples were treated in 10% HCl, and pure  $\text{CaCO}_3$  samples were converted into methanol. Dates are correlated with the chronology of the Holocene epoch (Fairbridge, 1968).

The results are expressed in radiocarbon years relative to AD 1950 based on the Libby half-life of  $5568 \pm 30$  years, using new NBS oxalic acid standard (SRM 4900C) as "modern" (Stuiver, 1983).

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GEOLOGIC SAMPLES

**West Coast series**

Two samples from exposed beach rock, W of Negombo ( $7^\circ 12' 30''$  N,  $79^\circ 49' 00''$  E), Negombo dist. Samples dated as Late Holocene (Late Sub-boreal).

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\*\* Address from March 1988: Department of Geography, University of Sri Jayewardenepura, Gangodawila, Nugegoda, Sri Lanka

**HR-125. Negombo** **2470 ± 70**

Calcareous algae from surface of beach rock, elev 0.25m, approx above high tide level. *Comment:* date indicates that one stage of coastal progradation had begun after Late Holocene (Late Subboreal).

**HR-126. Negombo** **3460 ± 160**

Marine shell from same loc as HR-125. *Comment:* same as HR-125.

**Southwest Coast series**

Eleven samples from well-developed buried coral beds, raised coral reef patches and a dug well, Galle dist. Dates correlated with Middle Holocene (Main Atlantic) and Late Holocene (Early Subboreal, Late Subboreal, and Early Subatlantic). Stratigraphic sequences and deposition pattern of branching (*Acropora*) and massive (*Porites*) corals (stood upright) and shells of buried beds (coral quarry nos. 1 and 2) mostly appear in growth position. Relatively good condition of materials reveals that accumulation was not caused by catastrophic event such as storm wave action.

**HR-111. Dimbulduwa-Akurala** **5830 ± 90**

Coral (*Acropora*) from coral quarry no. 1 (6° 12' 10" N, 80° 03' 57" E), depth 1.40m below msl.

**HR-112. Dimbulduwa-Akurala** **5820 ± 90**

Coral (*Echinopora*) from coral quarry no. 1, at same loc as HR-111, depth 2m below msl.

**HR-113. Dimbulduwa-Akurala** **5910 ± 80**

Coral (*Porites*) from coral quarry no. 1, at same loc as HR-111, depth 2.90m below msl.

**HR-114. Dimbulduwa-Akurala** **6000 ± 90**

Coral (*Acropora*) from coral quarry no. 1, at same loc as HR-111, depth 3m below msl.

**HR-115a. Wellemeda-Akurala** **Super modern**

Shell from coral quarry no. 2 (6° 11' 50" N, 80° 03' 57" E), depth 0.25m below msl.

**HR-115b. Wellemeda-Akurala** **5800 ± 80**

Coral (*Acropora*) from quarry no. 2, at same loc as HR-115a, depth 2.10m below msl.

**HR-109. Wellemeda-Akurala** **6110 ± 80**

Coral (*Acropora*) from coral quarry no. 2, at same loc as HR-115a, depth 3.90m below msl.

*General Comment:* dated sequences of coral quarry nos. 1 and 2 reveal that branching corals and massive corals developed inland as isolated patches following marine transgression during Holocene. The author agrees with

suggestions made by Deraniyagala (1958, p 15), and Neef and Veeh (1981).

**HR-110. Habaraduwa 5560 ± 70**

Coral (*Acropora*) from coral quarry no. 3 (5° 59' 50" N, 80° 17' 00" E), depth 0.90m to 1.10m below msl. *Comment:* date correlates with coral quarry nos. 1 and 2.

**HR-121. Galle-Unawatuna 1960 ± 60**

Coral (*Acropora*) from dug well (6° 00' 30" N, 80° 14' 50" E), depth 0.96m, approx below msl. *Comment:* partly rounded coral may be displaced by wave action.

**HR-117. Akurala-Telwatte 4070 ± 80**

Coral (*Goniastrea*) from emerged reef patch, in growth position (6° 10' 10" N, 80° 03' 50" E), elev 0.40m to 0.60m above msl. *Comment:* date confirms that previous sea level was higher than at present between Middle Holocene (Main Atlantic) and Late Holocene (Early Subboreal) in Sri Lanka. The author agrees with suggestions of Shepard (1961; see Hubbs, Bean & Suess, 1962, p 212).

**HR-116. Hikkaduwa 5100 ± 70**

Coral (*Goniastrea*) from emerged reef patch, in growth position cemented with sandstone (6° 07' 45" N, 80° 05' 45" E), elev 0.51m above msl. *Comment:* same as HR-117.

**South Coast series**

Three samples from two shell middens and one sample from emerged shell bed of lake margins, Hambantota dist. Emerged shell bed dated as Middle Holocene (Main Atlantic).

**HR-124. Hungama 5780 ± 110**

Marine shells (*Veneridae*) from dry lagoon bed at Kalametiya Lake (6° 05' 30" N, 80° 55' 30" E), elev 1.31m above msl. *Comment:* the author infers that varieties of shell belonging to marine form living in inter-tidal zone were deposited preceding coastal emergence after Middle Holocene (Early Subboreal).

**HR-123. Karagan Lewaya 3050 ± 100**

Shells from midden in coastal sand dune close to Karagan Lake (6° 07' 20" N, 80° 05' 10" E), elev 2.28m above msl. *Comment:* shell midden consists of uniform species of marine shells (*Veneridae*) forming layer several cm thick. Date suggests inhabitants dwelled along coastal low hilly areas adjoining lagoons prior to Late Holocene (Early Subboreal).

**HR-122. Udamalala 4050 ± 50**

Shells (*Veneridae*) from midden of lake margin (6° 10' 15" N, 80° 10' 00" E), elev 5.25m approx msl. *Comment:* same as HR-123.

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