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NATIONAL TAIWAN UNIVERSITY RADIOCARBON MEASUREMENTS II

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The C^{14} dates given below have been obtained by counting CO_2 at 2 atm pressure in a 1 L proportional counter. Details of procedure are given in our previous list (R., 1970, v. 12, p. 187-192). Radiocarbon dates in this list are based on 95% of activity of NBS oxalic acid as the modern standard and were calculated using 5570 yr as the half-life of C^{14}. Errors quoted with the dates are standard deviation originating from the statistical nature of radioactive disintegration process. Results obtained during 1970 and 1971 are described here.

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SAMPLE DESCRIPTIONS

I. GEOLOGIC SAMPLES

A. Japan

1370 ± 40

NTU-124. Hirogami **A.D. 580**

Bogwood from landslide area, Hirogami, Niigata, Japan (37° 20′ N Lat, 139° 00′ E Long), at 0m depth. Coll. and subm. 1969 by S. Yamaguchi, Disaster Prevention Inst., Kyoto Univ. *Comment* (S.Y.): date approximates landslide (Yamaguchi and Lin, 1971).

B. China

Hwalien series

Shell and coral of coral reef from Hwalien harbor, Taiwan (23° 59′ N Lat, 121° 32′ E Long). Coll. 1951 and subm. 1971 by C. C. Lin, Dept. Geol., Natl. Taiwan Univ.

1512 ± 45

NTU-159. Hwalien 1 **A.D. 438**

Coral, at +3m, 2.5m depth.

1052 ± 32

NTU-166. Hwalien 2 **A.D. 898**

Shell, at +3m, 1m depth.

General Comment (C.C.L.): dates coral reef overlying Milun Formation (Lin, 1969) unconformably and is overlain by the Chara-Melanoides Clay

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and Sand Member of the Peipin Formation (Lin, 1969). Dates are geologically reasonable.

Hengchun series

Coral of coral reef from Wangsa village, Hengchun, Taiwan (22° 03′ N Lat, 120° 45′ E Long), at +35m. Coll. and subm. 1971 by C. C. Lin.

NTU-161. Hengchun 1 **>30,000**

Ca. 1m depth.

NTU-162. Hengchun 2 **>30,000**

Ca. 1.5m depth.

NTU-163. Hengchun 3 **>30,000**

Ca. 3m depth.

General Comment (C.C.L.): dates are minimum for isolated Pleistocene emerged coral reef, overlain by laterite soil (with gravel), and underlain by Plio-Pleistocene arenaceous limestone of Maopitou Formation (Lin, 1967). Dates are expected.

Taitung series

Coral and shell of emerged coral reef from Taitung area. Coll. 1960 and subm. 1970 by C. C. Lin.

3820 ± 115

NTU-150. Taitung 1 **1870 B.C.**

Coral from Tanman, Changpin, Taitung, Taiwan (23° 13′ N Lat, 121° 24′ E Long), at +20m, 0.5m depth.

6132 ± 184

NTU-151. Taitung 2 **4182 B.C.**

Coral from Chiwen village, Taitung, Taiwan (23° 08′ N Lat, 121° 23′ E Long), at +35m, ca. 0.5m depth.

1643 ± 49

NTU-152. Taitung 3 **A.D. 307**

Coral from Chiten village, Taitung, Taiwan (23° 07′ N Lat, 121° 22′ E Long), at +20m, ca. 0.5m depth.

1950 ± 59

NTU-153. Taitung 4 **A.D. 0**

Coral from Chengkung, Taitung, Taiwan (23° 06′ N Lat, 121° 22′ E Long), at ca. +35m, ca. 1.5m depth.

3221 ± 97

NTU-154. Taitung 5 **1271 B.C.**

Coral from Chengkung, Taitung, Taiwan (23° 06′ N Lat, 121° 22′ E Long), at ca. +15m, ca. 2m depth.

9234 ± 277

NTU-158. Taitung 6 **7284 B.C.**

Coral from Fukang valley, Taitung, Taiwan (22° 48′ N Lat, 121° 11′ E Long), at +15m, ca. 2m depth.

2349 ± 70

NTU-165. Taitung 7 **399 B.C.**

Shell from Chiwen village, Taitung, Taiwan (23° 08′ N Lat, 121° 23′ E Long), at +35m, ca. 0.5m depth. *Comment* (C.C.L.): younger than expected.

General Comment (C.C.L.): samples expected to date emerged coral reefs. Except for NTU-165, dates are acceptable.

II. ARCHAEOLOGIC SAMPLES

China

Changpin series

NTU-125. Changpin 4 **>15,000**

Charcoal from LHVI (Sung, 1969) cave, Changpin, Taitung, Taiwan (23° 24′ N Lat, 121° 25′ E Long), at +100m, ca. 3.35m to 3.55m depth. Coll. and subm. 1970 by W. H. Sung, Dept. Archaeol. and Anthropol., Natl. Taiwan Univ. *Comment* (W.H.S.): this sample was obtained from geologically and culturally earlier horizon of Changpin culture. Four C^{14} dates, NTU-69-71 (Hsu *et al.*, 1970) and Y-2638 (Sung, 1969) of the latest phase of this culture range from 5000 to 6000 yr B.P. Thus, present date not only agrees with above-mentioned dates but also with estimate of W. H. Sung (1969), that earlier phase of Changpin culture must go back to Pleistocene.

III. GEOPHYSICAL SAMPLES

C^{14} in Atmospheric Carbon Dioxide

Atmospheric radiocarbon activity series, Taipei

C^{14} content in ground level atmospheric CO_2 is monitored monthly at Taipei, Taiwan (25° 02′ N Lat, 121° 32′ E Long). The following list contains exposure time at NaOH solutions to air and per cent increase of C^{14} above 95% NBS oxalic acid. Data are graphed in Fig. 1. The statistical error is less than 1%.

Sample no.	Exposure time	δC^{14}, %
NTU-113	15 Jan. – 20 Jan. 1968	+56.6
NTU-114	15 Feb. – 21 Feb. 1968	+59.5
NTU-115	15 Mar. – 20 Mar. 1968	+61.0
NTU-116	15 Apr. – 21 Apr. 1968	+56.0
NTU-117	18 May – 23 May 1968	+49.9
NTU-118	16 June – 22 June 1968	+55.5
NTU-119	15 July 1968	+55.9

Sample no.	Exposure time	δC^{14}, ‰
NTU-120	20 Sept. – 25 Sept. 1968	+55.6
NTU-121	18 Oct. – 22 Oct. 1968	+53.5
NTU-122	15 Nov. – 20 Nov. 1968	+55.0
NTU-123	17 Dec. – 22 Dec. 1968	+54.7
NTU-126	15 Jan. – 21 Jan. 1969	+51.2
NTU-127	15 Feb. – 21 Feb. 1969	+47.2
NTU-128	16 Mar. – 21 Mar. 1969	+52.7
NTU-129	16 Apr. – 21 Apr. 1969	+43.7
NTU-130	16 May – 21 May 1969	+67.7
NTU-131	17 June – 21 June 1969	+54.2
NTU-132	15 Aug. – 21 Aug. 1969	+49.4
NTU-133	15 Sept. – 21 Sept. 1969	+50.7
NTU-134	15 Oct. – 21 Oct. 1969	+40.0
NTU-135	15 Nov. – 20 Nov. 1969	+54.1
NTU-136	15 Dec. – 20 Dec. 1969	+74.7
NTU-137	15 Jan. – 20 Jan. 1970	+52.4
NTU-138	14 Feb. – 18 Feb. 1970	+55.7
NTU-139	15 Mar. – 21 Mar. 1970	+55.9
NTU-140	15 Apr. – 20 Apr. 1970	+56.4
NTU-141	15 May – 21 May 1970	+55.7
NTU-142	15 June – 21 June 1970	+56.2
NTU-143	15 July – 20 July 1970	+55.0
NTU-144	15 Aug. – 20 Aug. 1970	+45.7
NTU-145	14 Sept. – 21 Sept. 1970	+52.6
NTU-146	14 Oct. – 20 Oct. 1970	+49.8
NTU-147	15 Nov. – 20 Nov. 1970	+44.7
NTU-148	14 Dec. – 20 Dec. 1970	+48.9

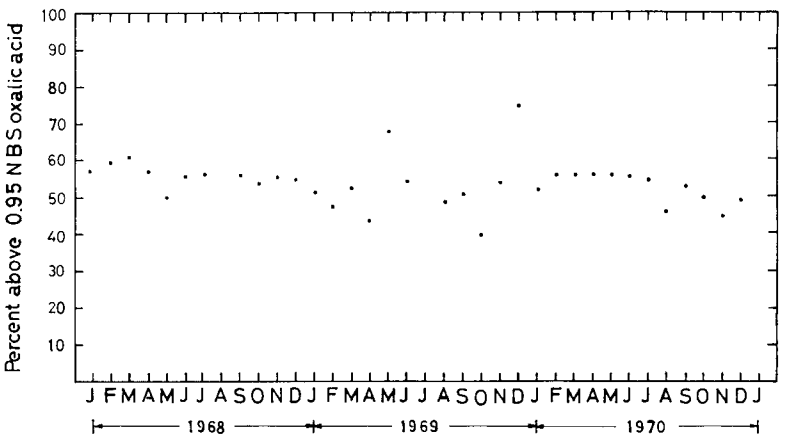

Fig. 1. C^{14} enrichment over NBS standard of atmospheric CO_2 during 1968 to 1970 at Taipei, Taiwan 25° 02′ N Lat, 121° 31′ E Long).

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