

Tohoku University Radiocarbon Measurements ?

著者	OMOTO Kunio, MAKITA Hajime, KOSEKI Yoko
雑誌名	The science reports of the Tohoku University.
	7th series, Geography
巻	24
号	2
ページ	205-209
発行年	1974-12
URL	http://hdl.handle.net/10097/44987

Tohoku University Radiocarbon Measurements II

Kunio OMOTO, Hajime MAKITA and Yôko KOSEKI

The following list comprises selected measurements made in ¹⁴C Laboratory of Institute of Geography, Faculty of Science, Tohoku University, with the 2.4L CO₂ proportional counter. Details of procedure are given in previous report (Nishimura *et al.*, 1972). Age calculations are based on the Libby half-life of ¹⁴C, 5570±30 years, and the modern activity given by 95% of the activity of NBS oxalic acid standard. Errors quoted are the standard deviations obtained from the number of counts. When observed activity is less than 2σ above back ground, infinite date is given with a limit corresponding to the activity of 3σ. For shell samples, dates are computed without any correction for environmental and biological isotopic fluctuation. The description, comments, and references are essentially those of the submitters. The measurements between TH-008 and TH-014 were carried out between November 1972 and March 1974 by Makita and Koseki. Financial support was provided by Institute of Geography. The authors wish to express their hearty thanks to Professor K. Nishimura and Professor T. Noh for their critical readings on this manuscript.

Sample Descriptions

1 Check Samples

TH-017. Tôya (B)

 $11,970 \pm 695$

10,020 B.C.

Buried trunk in the deposits between Tôya pyroclastic flow I and II, at road cutting near Osaru, Datemachi, Usu-gun, Hokkaido (42°20′28.3″N Lat., 140°49′33.8″E Long.). Collected in 1970 by K. Omoto. Comment (K. Omoto): Charred wood of the same layer was dated 9820±215 yrs. B.P. (TH-001).

TH-020. Skarvsnes (A)

6020±175 4070 B.C.

Laternula elliptica, about 14 m a.s.l., near Suribachi-ike, Skarvsnes, East Antarctica (69°29.0'S Lat., 39°37.5'E Long.). Collected in 1969 by K. Omoto. Comment (K. Omoto). The same sample was dated 7450 ± 135 yrs. B.P. (N-926). Another Laternula elliptica of 8–10 m a.s.l. at Kizahashihama near TH-020 was dated 4700 ± 100 yrs. B.P. (Yoshida, 1970).

TH-021. East Ongul Island (A)

 1450 ± 110

A.D. 500

Adamussium colbecki, about 2 m a.s.l., at Kitamihama, East Ongul Island, East Antarctica (69°00′29″S Lat., 39°34′30″E Long.). Collected in 1970 by K. Omoto. Comment (K. Omoto): The same sample was dated 2510±110 yrs. B.P. (N-925). While the same kind of the shell sample, at 3-4 m a.s.l. of Kainohama 800 m southwest from Kitamihama, was dated 3840±100 yrs. B.P. (Meguro et al., 1964). Sea water sample near East Ongul Island was dated 2860±125 yrs. B.P. (Omoto, 1972). According to the personal communication from Dr. T. Hoshiai (National Institute of Polar Research), calcareous algae at the elevation of high tide level of East Ongul Island was dated 3340±90 yrs. B.P., and the same sample at 1 meter above the former was dated 3540±90 yrs. B.P. (Gak-3664, and Gak-3665). While the Echinoidea sample on the sea bottom (about 10 m below the mean sea level at East Ongul Island), near Syowa Station was dated 150±80 yrs. B.P. (Gak-3666).

2 Geomorphic Samples

Tôno Series

TH-008. Tôno (1)

 $25,\!250\,{}^{\displaystyle -1690}_{\displaystyle +2145}$

24,250 B.C.

Peat bed in alternation of greyish or white coarse sand and blue-grey clay beds, at about 1.7 km southwest from Iwatekamigô Railway Station, Unanrin, Tôno, Iwate Pref. (39°16′10″N Lat., 141°34′30.8″E Long.). Collected in 1972 by K. Sugawara, N. Chida, and S. Takahashi. Comment (K. Sugawara): Expected result. The age shows that the river terrace deposits were brought on the way to cold stage of the Würm-II inter-glacial stage. It is worthy of notice when the gentle slope, which is slightly higher than the present alluvial plain, but continuous to river terrace surface, was formed.

TH-012. Tôno (3)

15,940±1125 13,990 B.C.

Burried trunk in gentle slope deposits which cover Tôno terrace (Sugawara et al., 1974), at Kotazawa, Tôno, Iwate Pref. (39°23′00″N Lat., 141°33′30″E Long.). Collected in 1973 by K. Sugawara. Comment (K. Sugawara): Slightly older than expected, but seems almost proper. The age shows that the gentle slope formation has started in Dorias stage of the Würm-IV inter-glacial stage.

TH-013. Tôno (2)

 $14,925 \pm 990$

12,975 B.C.

Sample and its locality are the same as TH-012, but the sampling layer is 2 m above the TH-012. Collected in 1973 by K. Sugawara. Comment (K. Sugawara): 2000 years older than expected. The age shows the climax of formation of gentle slope was in Würm-IV.

Miyazakimachi Series

TH-011. Miyazakimachi (1)

 810 ± 295

A.D. 1140

Burried trunk in deposits of Onoda terrace, at Daizaki, Miyazakimachi, Miyagi Pref. (38°36′10″N Lat., 140°45′00″E Long.). Collected in 1971 by O. Miura. Comment (O. Miura): An unexpected result. The sample is covered with Obanazawa pumice bed, which is assumed to be 10,000 yrs. B.P. by archaeological data and river terrace deposits (Yonechi, 1966). The result of pollen analysis by the submitter on the peaty deposits of which the sample was taken out, suggests that they were deposited under cold period of climate, and they included the pollen of *Picea*. It is assumed that the *Picea* has disappeared from Ou Mountains about 10,000 yrs. B.P.

TH-014. Miyazakimachi (2)

 730 ± 95

A.D. 1220

The sample and its locality are the same as TH-011. The layer of the sample is about 1 meter above TH-011. Collected in 1971 by O. Miura.

TH-015. Mukaimachi (A)

 $23,170 \, {-2265 \atop +3170}$

21,220 B.C.

Wood from Sugenodai Surface deposits in Mukaimachi Basin, 5 km southeast from Akakura hot spring, Mukaimachi, Yamagata Pref. (38°40′22.9″ N Lat., 140°35′39″ E Long.). Collected in 1966 by K. Omoto. Comment (K. Omoto): The age shows the second river terrace formation in Mukaimachi Basin, Yamagata Prefecture (Omoto, 1968). The age is younger than expected.

TH-016. Kabaniwa

 1980 ± 360

A.D. 30

Peat bed overlying mudstone bed, at Kabaniwa, Sôma, Fukushima Pref. (37°44′39.8″N Lat., 141°00′45.6″E Long.). Collected in 1967 by Y. Nakamura. Comment (Y. Nakamura): An unexpected result. The young age may suggests that the peat bed had deposited in valley floor. The sampling site is at a cliff of

2.5 m in height, which was formed by the retreat of the coast line of the area (Nakamura, 1969).

TH-019. Funaoka

 2160 ± 240

210 B.C.

Wood from flood plain deposits of the Shiroishi River, at 500 m northeast from Funaoka Railway Station, Funaoka, Miyagi Pref. (38°03'34"N Lat., 140°46'26"E Long.). Collected in 1967 by H. Hotta.

TH-023. Rokkasyo-mura

 $22,750 - 1160 \\ + 1350$

20,800 B.C.

Wood from clay bed including organic materials, overlying tuff breccia at Tomari, Rokkasyo-mura, Kamikita-gun, Aomori Pref. (41°04′43″N Lat., 141°23′26″E Long.). Collected in 1967, by T. Tamura.

3 Geologic Samples

TH-009. Shichigasyuku

more than 26,770

older than 24,820 B.C.

Peat bed in greyish clay bed, at road cutting near Niijuku Pass, Shichigasyuku, Katta-gun, Miyagi Pref. (38°00′50.2″N Lat., 140°17′24″E Long.). Collected in 1971 by T. Asano. Comment (T. Asano): The age shows the formation of a small fan which is on a water devide of Ou Mountains. The Otaki River, one of the tributaries of the Mogami River, has cut into the small fan. Therefore, it is considered that the piracy of the Otaki River took place here after the age. The age also suggests that the river terraces in Yonezawa Basin had begun to form at least 26,770 yrs. B.P.

TH-018. Aizu-kanayama

 $14,060 \pm 450$

12,110 B.C.

Burried trunk in peat bed under volcanic deposits of Yanohara volcano, Shimonakatsugawa, Ōnuma-gun, Fukushima Pref. (37°19′24.1″N Lat., 139°36′36.8″E Long.). Collected in 1970 by Y. Yasuda. Comment (K. Omoto): The age shows the beginning of volcanic activity of Yanohara volcano.

TH-022. Narugo (A)

 $19,860 \pm 870$

17,910 B.C.

Burried trunk in siltstone of Narugo lake deposits, north of Kawatabi Junior Highschool, Narugo, Miyagi Pref. (38°44′06.5″N Lat., 140°46′04.6″E Long.). Collected in 1968 by K. Omoto. Comment (K. Omoto): The sampling site is

very close to that of TH-003, but the age is too young compared with TH-003 (25,580 yrs. B.P.). If the age is assumed to be correct, the whole deposits of the site would be the deposits of Myôsada Surface, the third river terrace in Narugo Basin (Omoto, 1966).

4 Archaeological Sample

TH-010. Tsubonuma

2640±360 690 B.C.

Wood from peaty clay bed, at Tsubonuma, Murata-chô, Miyagi Pref. (38°11′ 22.9″N Lat., 140°46′10.3″E Long.). Collected in 1971 by Y. Yasuda. Comment (Y. Yasuda): The sample is situated at 2 m above the layer of the early stage of Jômon pottery. According to the result of pollen analysis on the peaty clay bed by the submitter, Fagus, Quercus, Ulmus, and Juglans are dominant (Yasuda, 1973).

References (* in Japanese)

- Meguro, H., Yoshida, Y., Uchio, T., Kigoshi, K. and Sugawara, K. (1964): Quaternary marine sediments and their geological dates with reference to the geomorphology of Kronprince Olav Kyst. Antarctic Geology. ed. by R. J. Adie, North Holland Pub. Co., Amsterdam. 73-80.
- Nakamura, Y. (1969): High-level Valleys in Johban Coastal Region with Reference to Dissection Features of Upland. Tohoku Univ. Sci. Rep. 7th Ser. (Geogr.). 18, 1-21.
- Nishimura, K., Omoto, K. and Koseki, Y. (1972): Tohoku University Radiocarbon Measurements I. Ibid. 22, 271-274.
- Omoto, K. (1966): Geomorphological Development of the Narugo Basin, Miyagi Prefecture, northeast Japan*. Geogr. Rev. Japan. 39, 521-537.
- ————— (1972): A Preliminary Report on Modern Carbon Datings at Syowa Station and its Neighbourhood, East Antarctica. Antarctic Rec. 43, 20-24.
- Sugawara, K. and Takahashi, S. (1974): On the Gentle Slopes and Terraces in Tôno Basin*. Annals. Tohoku Geogr. Assoc. 26, 11-21.
- Yasuda, Y. (1973): Ecological Approach to the Prehistoric Man and Environment around the Lower Basin of the Abukuma River*. *Ibid.* 25, 51-63.
- Yonechi, F. and Kikuchi, K. (1966): On the Obanazawa Pumice Bed*. Ibid. 18, 23-27.
 Yoshida, Y. (1970): Raised beach and saline lakes along the Prince Olav Coast, East Antarctica*. Recent Geography (Gendaino Chirigaku), Kokon-syoin, Tokyo. 93-113.