

**MOSCOW MV LOMONOSOV STATE UNIVERSITY
RADIOCARBON DATES II
SEA LEVEL INDICATORS FROM COASTAL USSR**

N I GLUSHANKOVA, O B PARUNIN, A O SELIVANOV,
A I SHLUKOV, and T A TIMASHKOVA

Laboratory of Recent Sediments and Pleistocene Paleogeography,
Moscow State University, Moscow 117234, USSR

INTRODUCTION

The following list summarizes the post-1970 laboratory results of ^{14}C dating of ancient sea-level indicators from the coasts of the Soviet Union. One of the aims of the International Geologic Correlation Programme Project No. 61 "Sea level movements during the last deglacial hemicycle" is the global cataloguing and mapping of ancient sea levels. The laboratory, which acts as the USSR National curator for these age measurements obtains dates sampled from its own expeditions and from other institutions of the country.

The list of ^{14}C dated sea-level indicators from the Soviet coasts was sent to Walter S Newman, Queens College, City University of New York, at his request for use in an enlarged world catalogue and maps.

Global mapping and modeling require reference to the laboratory code (MGU) number¹, latitude-longitude position, present elevation, date, and material of each sea-level indicator. A brief site description is published below. Some of the dated sea levels are evidently tectonically deformed but that is not our concern here. For samples younger than 7000 ^{14}C years, we adduce not only the direct age measurements but also the corrected dates in parentheses. We have chosen for correction the dendrochronologic calibration curve of Michael and Ralph (1973).

^{14}C dating was performed by the liquid scintillation method. To exclude from dating recrystallized mollusk shells, we use an x-ray diffractometric method. For a brief description of measurement procedures and methodologic aspects, see Glushankova *et al* (1980) and Kaplin (1976).

ACKNOWLEDGMENTS

We thank P A Kaplin, the Head of the Laboratory, the Head of the National working group on Project No. 61 IGCP, for advice in our research. We are also greatly indebted to all of those who submitted samples for dating.

Arctic Ocean Coasts

MGU-IOAN-129. Spitzbergen Is 8360 ± 140

Wood from ancient driftwood trunk, NE Barentz I. (78° 6' N, 22° 2' E), from scarp of limnodeltaic terrace, at 48m alt. Sample subm by M G Groswald, Inst Geog, Acad Sci, USSR.

¹Dates obtained jointly with the Inst Oceanology, Acad Sci, USSR, are lettered MGU-IOAN.

Laptev Sea series

Samples subm by A Sidorchuk, Moscow State Univ.

MGU-326. Yana River delta **840 ± 250**
(880 ± 250)

Wood from main channel, left bank, 84km from mouth (71° 1' N, 136° 1' E). Sample from marine terrace at 8m alt.

MGU-327. Yana River delta **1970 ± 150**
(1870 ± 150)

Wood from main channel, left bank, 32km from mouth (71° 4' N, 135° 8' E). Sample from marine terrace at 6m alt.

MGU-329. Yana River delta **3640 ± 300**
(3850 ± 300)

Peat from main channel, right bank, 13km from mouth (71° 5' N, 136° 2' E). Sample from marine terrace at 2m alt.

Longa Strait series

Samples subm by L V Tarakanov, Moscow State Univ.

MGU-574. Billings Cape **1370 ± 140**
(1459 ± 140)

Peat from N lagoon coast, 0.9km W of Billings settlement (69° 8' N, 176° 1' E). Sample from ledge of bar at 2.5m alt.

MGU-575. Billings Cape **3007 ± 170**
(3116 ± 170)

Peat from N lagoon coast, 2.7km E of Billings settlement (69° 8' N, 176° 2' E). Sample from ledge of bar at 2.1m alt.

MGU-576. Billings Cape **3650 ± 170**
(3850 ± 170)

Peat from N lagoon coast, 7.2km E of Billings settlement (69° 8' N, 176° 0' E). Sample from ledge of bar at 1.8m alt.

Taimir series

Samples subm by M G Groswald.

MGU-450. Taimir Lowland **25,000 ± 250**

Mollusk shells, 100% aragonite (*Mya truncata*, *Cyrtodaria jenissea*, *Hiatella arctica*, *Astarte montagui striata*) from Ulakhan-Gurakh, right bank, 6km from Novaya R confluence, 45km NNW of Khatanga settlement (72° 3' N, 102° 3' E). Sample from marine terrace at 50 to 55m alt.

MGU-451. Taimir Lowland **30,000 ± 300**

Mollusk shells (*Mya truncata*, *Hiatella arctica*, *Astarte montagui striata*, *Macoma calcarea*, *Cyrtodaria* sp) from Selebir R, upper reaches, 40km NW of Khatanga settlement (72° 2' N, 102° 0' E). Sample from marine terrace at 60m alt.

MGU-452. Taimir Lowland 15,300 ± 500

Mollusk shells (*Mya* sp, *Astarte* sp, *Macoma* sp, *Hiatella* sp) from Ushkan Kamen Heights, Dudypta R, left bank, 90km from mouth of Boganida R at 120m alt (71° 8' N, 93° 2' E).

*Far East Coasts***Western Kamchatka series**

Samples coll by lab expedition; subm by V F Ivanov and L G Nikiforov.

MGU-IOAN-68. W Kamchatka 35,000 ± 700

Wood from 5.5km N of Kihchik R mouth, 350m from lake shore (53° 6' N, 156° 0' E). Sample from scarp of terrace at 1m alt.

MGU-IOAN-185. W Kamchatka 37,000 ± 2100

Buried peat from Utka R near Mitoga settlement (53° 0' N, 156° 0' E). Sample from scarp of terrace at 25 to 30m alt.

MGU-60. W Kamchatka 31,000 ± 900

Wood from peaty layer from modern sea cliff in marine terrace at 6.2m alt (52° 9' N, 156° 0' E).

MGU-202. W Kamchatka 45,000

Wood from same loc as MGU-IOAN-185 at 12.3m alt.

Chukotka series

Samples coll by lab expedition; subm by A A Svitoch and V S Khorev.

MGU-201. Chukotka 27,000 ± 2000

Plant remains from Anadyr estuary, Dionisiy cape (64° 7' N, 177° 3' E). Sample from scarp of terrace at 23m alt.

MGU-311. Chukotka 31,500 ± 850

Peat from Osinovaya R, right bank, 2km from mouth (64° 7' N, 175° 0' E). Sample from scarp of plane surface at 21.5m alt.

MGU-312. Chukotka 44,000

Peat from same loc as MGU-311.

MGU-314. Chukotka 37,500 ± 800

Wood from SW coast of Anadyr estuary, 1.5km N of Khluzny stream (64° 6' N, 177° 3' E). Sample from scarp of marine terrace at 7m alt.

**MGU-320. Chukotka 7060 ± 200
(7740 ± 200)**

Peat from Anadyr estuary coast, 2km N of fishing factory (64° 6' N, 177° 3' E). Sample from scarp of 1st marine terrace at 2.2m alt.

**MGU-321. Chukotka 7010 ± 160
(7680 ± 160)**

Plant remains from same loc as MGU-320 at 2.3m alt.

MGU-340. Chukotka 11,800 ± 200

Peat from Onemen Bay coast (64° 5' N, 176° 8' E). Sample from scarp of marine terrace at 4.8m alt.

MGU-341. Chukotka 8950 ± 200

Peat from same loc as MGU-340 at 2.9m alt.

MGU-342. Chukotka 8200 ± 100

Peat and plant remains from same loc as MGU-320 (64° 6' N, 177° 3' E) at 3.9m alt.

MGU-383. Chukotka 11,600 ± 100

Peat from Koluchinskaya inlet, rear part of Belyanka spit (67° 1' N, 174° 7' W) at 0.5m alt. Subm by L A Zhindarev, MGU.

Kresta Bay series

MGU-384. Kresta Bay 30,000 ± 1100

Mollusk shell, 100% aragonite from Kresta (Cross) Bay, E coast, S of Perkla stream mouth (65° 7' N, 178° 7' W). Sample from scarp of marine terrace at 10.5m alt.

MGU-385. Kresta Bay 30,000 ± 380

Mollusk shell, 100% aragonite from Kresta Bay, E coast, 8km N of Konergino settlement (66° 1' N, 178° 6' W). Sample from slope of watershed plain at 7.2m alt.

MGU-386. Kresta Bay 35,000 ± 530

Mollusk shell, 100% aragonite from same loc as MGU-384 (65° 6' N, 178° 7' W) at 17.5m alt.

**MGU-393. Kresta Bay 5900 ± 110
(6480 ± 110)**

Peat from same loc as MGU-320 (64° 6' N, 177° 3' E) at 1.6m alt.

MGU-394. Kresta Bay 7700 ± 320

Plant remains from same loc as MGU-393 at 2.4m alt.

**MGU-398. Kresta Bay 6120 ± 220
(6770 ± 220)**

Peat from same loc as MGU-394 at 1.6m alt.

Dionisiya River Mouth series

**MGU-402. Dionisiya R 3150 ± 80
(3300 ± 80)**

Plant remains from excavation of ancient spit at 2.8m alt, 1.5km N of mouth (64° 7' N, 177° 3' E).

**MGU-403. Dionisiya R 4180 ± 100
(4400 ± 100)**

Plant remains from same loc as MGU-402 at 2m alt.

- MGU-454. Dionisiya R** **4000 ± 100**
(4360 ± 100)
 Peat from recent marine terrace at 0.5 to 1m alt (64° 7' N, 177° 3' E).
- MGU-478. Dionisiya R** **9900 ± 500**
 Peat from crest of ancient spit (64° 6' N, 177° 3' E) at 4.5m alt.
- MGU-455. Dionisiya R** **4200 ± 120**
(4500 ± 120)
 Peat from same loc as MGU-454 at 0.6m alt.

Japan Sea series

Samples coll by lab expedition and A M Korotky, Vladivostok, Geol Inst, Far East Sci Center, Acad Sci, USSR.

- MGU-IOAN-227. Vostok Gulf** **11,000**
 Peat from 16m depth at 1.7 to 2m from basal surface (42° 8' N, 132° 7' E). Subm by A M Korotky.
- MGU-IOAN-229. Barabashevka R mouth** **7360 ± 160**
 Peat from lagoonal deposits in scarp of terrace at 0.2m alt (42° 9' N, 131° 4' E). Subm by A M Korotky.
- MGU-263. Partizanskaya R mouth** **6260 ± 110**
(6980 ± 110)
 Mollusk shells from marine terrace (42° 8' N, 133° 0' E). Sample from well at -9m alt; subm by A I Shlukov, MGU.
- MGU-264. Partizanskaya R mouth** **5790 ± 110**
(6370 ± 110)
 Mollusk shells from same loc as MGU-263 at -6m alt.
- MGU-305. Kievka Bay** **38,000**
 Peat from Chinchasovaya inlet, 2nd submerged terrace, 30m depth, 1.5km from coast at 0.15 to 3.4m from basal surface (42° 9' N, 134° 0' E).
- MGU-307. Vostok Gulf** **42,000**
 Peaty silt from 2nd submerged terrace, 26m depth, 0.5 to 1m from basal surface (42° 8' N, 132° 7' E).
- MGU-323. Chernaya R mouth** **2880 ± 200**
(2950 ± 200)
 Peat from scarp of lagoonal terrace at 3m alt (43° 1' N, 134° 3' E). Subm by A M Korotky.
- MGU-324. Chernaya R mouth** **4450 ± 100**
(4890 ± 100)
 Peat from same loc as MGU-323 at 2.1m alt.
- MGU-325. Zolotoy Rog Gulf (Golden Gulf)** **29,000 ± 250**
 Algae peat from 7.3m depth, 6.5 to 6.8m from basal surface (43° 1' N, 131° 3' E).

- MGU-408. Zerkalnaya Bay** **2950 ± 60**
Mollusk shells from 20m depth, 3.2 to 3.3m from basal surface (44° 1' N, 135° 8' E).
- MGU-409. Rudnaya Bay** **3300 ± 100**
(**3490 ± 100**)
Mollusk shells from 20m depth, 0.91 to 1.4m from basal surface (44° 2' N, 135° 9' E).
- MGU-461. Zerkalnaya R mouth** **3950 ± 800**
(**4320 ± 800**)
Coal overlying marine pebble from archaeol site on scarp of terrace at 1.8m alt (44° 0' N, 135° 6' E). Subm by V P Stepanov, MGU.
- MGU-501. Zerkalnaya R mouth** **5700 ± 80**
(**6300 ± 80**)
Wood from scarp of low flood plain at 1.5m alt (44° 0' N, 135° 6' E). Subm by S S Karpukhin, MGU.
- MGU-515. Zerkalnaya Bay** **10,680 ± 260**
Silt for analysis of humic acid fraction, 35m depth, in submerged terrace, 4 to 3.8m from basal surface (44° 1' N, 135° 8' E). Subm by A I Vvedenskaya, MGU.
- MGU-516. Rudnaya Bay** **12,190 ± 700**
Silt for analysis of humic acid fraction, 20m depth, in submerged terrace, 4.1 to 4.5m from basal surface (44° 2' N, 135° 9' E). Subm by A I Vvedenskaya.
- MGU-518. Rudnaya Bay** **10,300 ± 260**
Silt for analysis of humic acid fraction, 33m depth, in submerged terrace, 3.3 to 3.4m from basal surface (44° 2' N, 135° 9' E). Subm by A I Vvedenskaya.
- MGU-538. Kema R mouth** **1227 ± 120**
(**1270 ± 120**)
Wood from scarp of terrace at 1.8m alt, 0.6km from coastline (45° 4' N, 137° 3' E). Subm by A M Korotky.
- MGU-539. Kema R mouth** **1270 ± 30**
(**1320 ± 30**)
Wood from same loc as MGU-538 at 1.1m alt.
- MGU-540. Kema R mouth** **2270 ± 120**
(**2851 ± 120**)
Wood from 2.5km S of mouth from scarp of marine terrace at 3.7m alt. Subm by A M Korotky.
- MGU-544. Valentin Bay** **4320 ± 90**
(**4670 ± 90**)
Coal overlying marine pebble from archaeol site at Titova tombolo at 1.8m alt. Subm by V P Stepanov, MGU.

MGU-546. Kema R **2870 ± 50**
(2940 ± 50)

Peat from Khomushina stream mouth from scarp of lagoonal terrace at 1.2m alt (45° 3' N, 137° 3' E). Subm by A M Korotky.

MGU-559. Adimi Bay **2500 ± 170**
(2538 ± 170)

Wood from 2.5km S of Adimi R mouth from scarp of marine terrace at 2.2m alt (47° 2' N, 139° 0' E). Subm by A M Korotky.

MGU-608. Rudnaya Bay **2910 ± 600**
(3000 ± 600)

Silt lens in sand deposits from ancient spit at 1.7m alt, 1km S of Rudnaya R mouth (44° 1' N, 135° 8' E). Subm by A I Shlukov, MGU.

MGU-638. Peter the Great Gulf **28,000**

Peaty silt from 22m depth of submerged terrace, 3.3m from basal surface (42° 6' N, 131° 3' E). Subm by A V Porotov, MGU.

REFERENCES

- Glushankova, N I, Parunin, O B, Timashkova, T A, Khait, V Z, and Shlukov, A I, 1980, Moscow MV Lomonosov State University radiocarbon dates I: Radiocarbon, v 22, p 82-90.
- Kaplin, P A, ed, 1976, Rukovodstvo po Izucheniu Novejshih Otlozhenij M, Moscow Univ Pub House (Manual on recent sediments research).
- Michael, H N and Ralph, E K, 1973, Discussion of radiocarbon dates obtained from precisely dated sequoia and bristlecone pine samples, in Rafter, T H and Grant-Taylor, T, eds, Internatl conf on ¹⁴C dating, 8th, Proc: Wellington, Royal Soc New Zealand, p 27-43.