

## RADIOCARBON DATES OF RIGA II

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### INTRODUCTION

Our standard procedure of  $^{14}\text{C}$  concentration measurements is reported in Riga I. We report here data on samples from the Latvian SSR and Eastern Siberia.

### GEOLOGIC SAMPLES

#### *Latvia*

#### **Torfkaln Purvs Bog series**

Torfkaln Purvs Bog is SE of Riga, near Salaspils and contains high-moor type sediments. Its area is ca 160ha. Average peat is 3.5m thick, 4.8 max. The bog structure and characteristics were previously studied (Normals, 1943; Druvij & Birkman, 1960).

The botanical composition of the peat indicates that all stages typical for this region of Latvia, from low-lying to highmoor peat bog, are present in the bog development. The absolute chronology of the bog has been described (Stelle, Savvaitov & Veksler, 1974). Samples were subm by V Stelle.

<b>Riga-21.</b>	<b>2140 ± 130</b>
Weakly decomposed sphagnum peat from 1.05 to 1.10m depth.	
<b>Riga-18.</b>	<b>2430 ± 130</b>
Strongly decomposed sphagnum peat from 1.30 to 1.35m depth.	
<b>Riga-18a.</b>	<b>2410 ± 80</b>
Humic acids of previous sample.	
<b>Riga-12.</b>	<b>3880 ± 140</b>
Weakly decomposed sphagnum peat, from 1.75 to 1.80m depth.	
<b>Riga-17.</b>	<b>5290 ± 50</b>
Strongly decomposed peat from 2.05 to 2.10m depth.	
<b>Riga-17a.</b>	<b>5360 ± 60</b>
Humic acids of sample 17.	
<b>Riga-13.</b>	<b>5840 ± 140</b>
Strongly decomposed peat, from 2.30 to 2.40m depth.	

<b>Riga-14.</b>	<b>6430 ± 130</b>
Moderately decomposed sphagnum peat, from 2.55 to 2.60m depth.	
<b>Riga-20.</b>	<b>7390 ± 130</b>
Weakly decomposed sphagnum peat, from 2.75 to 2.80m depth.	
<b>Riga-42.</b>	<b>7450 ± 130</b>
Strongly decomposed hypno-sedge peat, from 2.80 to 2.85m depth.	
<b>Riga-10.</b>	<b>7890 ± 130</b>
Strongly decomposed hypno-sedge peat, from 2.85 to 2.90m depth.	
<b>Riga-10a.</b>	<b>7760 ± 130</b>
Humic acids of sample 10.	
<b>Riga-15.</b>	<b>8020 ± 140</b>
Strongly decomposed hypno-sedge peat, from 2.90 to 2.95m depth. Humid acid dating.	
<b>Riga-19.</b>	<b>8890 ± 140</b>
Strongly decomposed sedge peat, from 3.35 to 3.40m depth.	
<b>Riga-16.</b>	<b>9410 ± 140</b>
Strongly decomposed sedge-equisetic peat, from 3.60 to 3.65m depth. Humic acid dating.	

### Sarnate Bog series

Sarnate Bog is one of the reference chronological sequence sections of the Kurzeme coastline. It is 30km S of the town of Ventspils. Its structure is characterized by a sequence of layers of bog and lake origin. The bog sediments are overlain by fine-grained sands and locally by grayish loamy clays.

Sporo-pollen analysis of the section and its radiocarbon dates (Table 1) were undertaken for the periphery, mainly low-lying peat, the sedimenta-

TABLE 1  
Radiocarbon dates of Sarnate Bog

Lab no.	<sup>14</sup> C date (yr BP)	Sporo-pollen zone	Provenience
Riga-38	7090 ± 140	BO2/AT1	Interface between Boreal and Atlantic layers
-29	7920 ± 160	BO2	Upper max of pine pollen
-56	8150 ± 130	BO1	Lower max of alder and hazel pollen
-23a	8300 ± 200	BO1	Offset of rational interface of alder pollen
-23	8520 ± 200	BO1	Lower Boreal max of pine pollen
-25	8950 ± 200	BO1	
-24	10,580 ± 250	Dr3	Hypnous peat horizon

tion of which occurred during the first half of the postglacial period (Stelle & Veksler, 1975).

### Tirela Bog series

Tirela Bog is in the thermokarst depression of the W Kurzeme upland, 10km S of Edole. It is a highmoor-type peat reservoir, and measures 30ha. Radiocarbon samples were coll in the central part of the bog and subm by A Lacis.

<b>Riga-300.</b>	<b>4080 ± 140</b>
Highmoor peat from 1.25 to 1.35m.	
<b>Riga-301.</b>	<b>4320 ± 140</b>
Highmoor peat from 1.35 to 1.45m.	
<b>Riga-303.</b>	<b>8400 ± 150</b>
Magellanicum peat from 4.9 to 5.0m.	
<b>Riga-304.</b>	<b>8520 ± 140</b>
Magellanicum peat from 5.0 to 5.1m.	
<b>Riga-305.</b>	<b>10,180 ± 140</b>
Sapropel from clayey deposits; depth: 6.65 to 6.70m.	

### Blidenes Bog series

Blidenes Bog is in the limnoglacial plain of E Kurzeme upland near Blidenes and consists of two types of peat, highmoor and low-lying. Samples were coll in the NE part of the low-lying reservoir and subm by A Lacis.

<b>Riga-308.</b>	<b>5840 ± 140</b>
Peat from 3.40 to 3.50m depth.	
<b>Riga-307.</b>	<b>7450 ± 100</b>
Sapropel with peat laminae from 3.50 to 3.60m depth.	
<b>Riga-306.</b>	<b>9300 ± 80</b>
Sapropel from 4.60 to 4.70m depth.	

### Lambartu Bog series

Lambartu Bog is in the limnoglacial plain of Middle-Latvian lowland near Salenieki, Bauska region and measures 400ha. There are three types of peat—highmoor, mixed and low-lying. Samples were coll from the middle highmoor part of the reservoir, and subm by A Lacis.

<b>Riga-317.</b>	<b>2170 ± 100</b>
Peat from 3.65 to 3.75m depth.	

<b>Riga-316.</b>	<b>3610 ± 120</b>
Peat from 4.8 to 4.9m depth.	
<b>Riga-315.</b>	<b>4630 ± 140</b>
Sapropel from 6.0 to 6.1m depth.	
<b>Riga-314.</b>	<b>6510 ± 140</b>
Sapropel from 6.25 to 6.35m depth.	

### Gauya River series

Samples Riga-74, -105, -75, -76, -77 were coll near Viesuleni from river bank. Samples subm by V Stelle.

<b>Riga-74.</b>	<b>11,110 ± 350</b>
Hypnous peat from riverflat terrace alluvium III at 3.38 to 3.25m.	
<b>Riga-105.</b>	<b>11,270 ± 230</b>
Hypnous peat from same horizon.	
<b>Riga-75.</b>	<b>8230 ± 140</b>
Wood from dark-brown peat horizon at 2.35 to 2.25m.	
<b>Riga-76.</b>	<b>1790 ± 120</b>
Wood fragments from alluvial outcrop clearings in sands at 1.75 to 1.90m.	
<b>Riga-77.</b>	<b>950 ± 80</b>
Oak wood from alluvial flat in clayey sands at 0.95 to 1.60m.	
<b>Riga-33.</b>	<b>10,530 ± 250</b>
Small plant fragments from III river flat terrace, river bank 3km from lower Valmiera. Subm by O Aboltniš and V Stelle.	
<b>Riga-256.</b>	<b>2770 ± 300</b>
Wood from 4.5m depth of river flat terrace of bank of lower Nurmīžupite R delta.	
<b>Riga-319.</b>	<b>3030 ± 120</b>
Wood from 4.20 to 4.40m depth of first terrace of bank of lower Nurmīžupite R.	
<b>Riga-318.</b>	<b>1780 ± 80</b>
Wood from 2.55 to 2.60m depth from oxbow-lake sec of high river flat near Mucenieki near Nurmīžupite R. Riga-256, -318, -319 subm by I Daniels.	
<b>Riga-72.</b>	<b>21,420 ± 440</b>
Buried peat from landslide near Adamovo on bank of Daugava R 3km from lower Kraslava.	

- Riga-263.** **≥4370**  
Wood peat with fragments of branches and yellow fine-grained sand laminae with transition to dark-gray rich in organic clay in lower part. Taken from 3.1m depth from bank of Pededze R 250m from lower Sita R delta; subm by I Danilans.
- Riga-320.** **3920 ± 120**  
Wood from 4.5m depth in terrace I outcrop of bank of Daugava R near Piedruya, subm by I Danilans.
- Riga-323.** **7200 ± 120**  
Wood from same section at 5.8 to 6.0m depth; subm by I Danilans.
- Riga-257.** **3250 ± 150**  
Wood from layer 20m above level of Maza Jugla R; subm by I Danilans.
- Riga-37.** **10,320 ± 230**  
Strongly decomposed peat under sands of local basin terrace, from 2.2m depth on bank of Daugava R near Kaulezers Lake; subm by O Aboltniš, G Eberhard and V Stelle.
- Riga-39.** **13,320 ± 250**  
Mossy peat with plant fragments from moraine of bank of Rauna R; subm by O Aboltniš and V Stelle.
- Riga-253.** **6560 ± 250**  
Wood from second river flat terrace of Ogra R near Sturiši; subm by I Danilans.
- Riga-258.** **3750 ± 50**  
Wood from 5m depth at bank of Bolshaya Jugla R near Zaki; subm by I Danilans.
- Riga-271.** **4950 ± 60**  
Peat from 3.6 to 3.2m depth near Kesterciems; subm by Z Meirons.
- Riga-270.** **5300 ± 240**  
Humic acids of Riga-271.
- Riga-140.** **10,650 ± 190**  
Sample of well-preserved pine wood from III river flat terrace of Memele R near Pinelupe; subm by I Straume.
- Riga-69.** **9720 ± 180**  
Strongly decomposed peat with wood fragments from 2.90 to 3.05m depth, under sediments of Runi R bank of oxbow lake, 12km from Priekule. Subm by V Stelle.

**Riga-192.** **7750 ± 180**

Wood from lower layer of gyttja of *Ancylus* lake regression at 3m from surface on bank of Venta R near Varve. Assumed date: Holocene. Subm by I Veinberg.

**Riga-189.** **9560 ± 220**

Wood from contact of clays of *Ancylus* transgression and underlying sands from 2m depth. Sample was taken from bank of Venta R opposite mouth of Packule R. Assumed date: Holocene. Subm by I Veinberg.

**Riga-174.** **7640 ± 150**

Sample from outcrop on bank of Irbe R from lowest part of gyttja overlain by littorina sands and silts, 6m thick. Assumed date: Holocene. Subm by I Veinberg.

**Riga-116.** **12,500 ± 500**

Plant detritus from 2.5m depth on bank of Iecava R near Ozolnieki. Subm by V Stelle.

**Eastern Siberia series****Riga-207.** **2070 ± 120**

Young tree branch 5cm in diam, with 5- to 6-yr rings. Sample taken from scarp of Konda R in layer of frozen peat.

**Riga-203.** **3630 ± 110**

Wood from scarp on bank of Konda R 10km from its delta, 2.0 to 2.1m depth.

**Riga-204.** **5370 ± 160**

Same as Riga-203, 5.2 to 5.5m depth.

**Riga-205.** **3660 ± 120**

Same as Riga-203, 6.85 to 7.1m depth.

**Riga-199.** **3720 ± 150**

Same as Riga-203, 10.1 to 10.25m depth.

**Riga-206.** **3520 ± 160**

Same as Riga-203, 11.15 to 11.25m depth.

**Riga-208.** **3500 ± 170**

Well-preserved brown wood from outcrop of 4m terrace from bank of Chara R in town of Chara, Kalarski region, Chita. Sediments are of channel-alluvial type.

**Riga-202.** **10,620 ± 220**

Wood taken from bank of Mui R. Assumed date: upper Pleistocene-Holocene.

- Riga-298.** **11,840 ± 250**  
Well-preserved wood from spruce root on terrace-like surface of bank of Mui R near Ust-Muya, Buryat ASSR. Assumed date: Holocene-upper Pleistocene.
- Riga-198.** **12,920 ± 210**  
Wood branch 20cm in diam; last 30 rings in sample. Coll from same point as Riga-202, above.
- Riga-322.** **≥45,000**  
Slightly carbonized wood, buried in sediments of Late Neogene, from boring at 200m depth near Ust-Muya, Buryat ASSR. Riga-201, -205, -208, -198, -199, -298, -322 subm by A Kulchitski.
- Riga-126.** **39,000 ± 680**  
Very earthy peat from lower part of humus horizon on surface of III Baikal terrace, W Sv Nos peninsula, Buryat ASSR.
- Riga-127.** **37,000 ± 520**  
Earthy peat from buried soil on surface of III Baikal terrace; same as Riga-126.
- Riga-128.** **35,200 ± 510**  
Upper part of buried soil of III Baikal terrace surface; same as Riga-126.
- Riga-62.** **≥39,200**  
Humic acids from soil-peat humus layer of moraine, Cape Omagachan, Buryat ASSR.
- Riga-58.** **1840 ± 30**  
Peat from bog with fire horizons at 0.5m depth, on surface of 8m Baikal terrace, Cape Bireya, Buryat ASSR.
- Riga-68.** **22,280 ± 450**  
Well-decomposed peat from humus horizon, under deluvial-proluvial sediments at 6.3m depth on surface of 12m Baikal terrace, W bank of Sv Nos peninsula, Buryat ASSR.
- Riga-52.** **2770 ± 108**  
Coal forest fire from coal buried under aeolian sands on surface of 7.5m Baikal terrace, Cape Peschaniye Bugri, Buryat ASSR.
- Riga-53.** **8770 ± 394**  
Coal from forest fire from same section as Riga-52. *Comment:* all samples except Riga-127 subm by V Mats.

**Riga-139.****6750 ± 100**

Peat with plant fragments, from W bank of Tiya R delta at N part of Lake Baikal. Subm by E Karabanov.

## ARCHAEOLOGIC SAMPLES

**Irkutsk series****Riga-50.****7000 ± 150**

Coal from cultural horizon VI from Goreliy Les site, Irkutsk region.

**Riga-51.****8440 ± 120**

Coal from cultural horizon VII; from Goreliy Les site, Irkutsk region.

**Riga-71.****770 ± 100**

Coal from surface of tomb at depth 0.85m at Ust-Belaya site, Irkutsk region. Samples subm by N Savelyev.

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