

## TARTU RADIOCARBON DATES VI

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The present list includes 35 dates of geologic samples analyzed at the Geobiochemical Laboratory of the Institute of Zoology and Botany, Academy of Sciences, Estonian SSR. Benzene synthesized from wood dating from  $1850 \pm 10$  yr served as a reference standard. All radiocarbon dates have been calculated using  $5568 \pm 30$  yr before AD 1950 as the half-life of  $^{14}\text{C}$ .

### Saviku Bog series

A sec from an extensive bog system, Emajõe-Suursoo, located at the estuary of Emajõgi R, on the left bank of the river near its inflow into Lake Peipsi (Tartu Dist, Estonian SSR). Samples coll 1969 by E Ilves and A Sarv, pollen analyses by A Sarv.

<b>TA-317. Saviku</b>	<b><math>1620 \pm 50</math></b>
	<b>AD 330</b>
Reed and sedge peat from depth 90 to 100cm. Boundary of Pollen Zones SA1 and SA2.	
<b>TA-318. Saviku</b>	<b><math>2490 \pm 50</math></b>
	<b>540 BC</b>
Reed peat from depth 150 to 160cm. Pollen Zone SA1.	
<b>TA-319. Saviku</b>	<b><math>2570 \pm 70</math></b>
	<b>620 BC</b>
Wood and reed from depth 230 to 240cm. Pollen Zone SA1.	
<b>TA-320. Saviku</b>	<b><math>2850 \pm 70</math></b>
	<b>900 BC</b>
Wood peat from depth 280 to 290cm. Boundary of Pollen Zones SB2 and SA1, Sub-Boreal and Atlantic contact.	
<b>TA-321. Saviku</b>	<b><math>3130 \pm 60</math></b>
	<b>1180 BC</b>
Wood and reed peat from depth 310 to 320cm. Culmination of spruce pollen. Pollen Zone SB2.	
<b>TA-322. Saviku</b>	<b><math>3880 \pm 60</math></b>
	<b>930 BC</b>
Wood and reed peat from depth 340 to 350cm. Boundary of Pollen Zones SB1 and SB2.	
<b>TA-323. Saviku</b>	<b><math>4060 \pm 70</math></b>
	<b>2110 BC</b>
Wood and reed peat from depth 380 to 390cm. Pollen Zone SB1.	

- 4620 ± 60**  
**2670 BC**
- TA-425. Saviku**  
Wood and reed peat from depth 390 to 400cm. Boundary of Pollen Zones AT2 and SB1, Atlantic and Sub-Boreal contact.
- 5690 ± 70**  
**3740 BC**
- TA-324. Saviku**  
Reed peat from depth 480 to 490cm. Pollen Zone AT2.
- 6900 ± 70**  
**4950 BC**
- TA-325. Saviku**  
Peat-like sapropel with slight admixture of fine-grained sand and fragments of mollusk shells from depth 520 to 530cm. Empirical boundary of spruce pollen. End of Pollen Zone AT1.
- 7110 ± 70**  
**5160 BC**
- TA-326. Saviku**  
Peat-like sapropel with slight admixture of fine-grained sand and fragments of mollusk shells from depth 580 to 590cm. End of Boreal period.
- 8090 ± 70**  
**6140 BC**
- TA-426. Saviku**  
Peat-like sapropel with admixture of fine-grained sand from depth 590 to 600cm. Sample contained mollusk shells (*Valvata piscinalis* [Müll] and *Sphaerium corneum* [L]). Determination of sp by J Vilbaste. Boreal maximum of pine pollen.
- 9090 ± 70**  
**7140 BC**
- TA-327. Saviku**  
Peat-like sapropel with admixture of fine-grained sand from depth 620 to 630cm. Sample contained mollusk shells (*Planorbis carinatus* [Müll], *Sphaerium* sp, *Radix* sp, *Spiroborbis spiroborbis* [L]). Determination by A Järvekülg. Pre-Boreal (PB) and Boreal (BO) contact.
- 10,200 ± 90**  
**8250 BC**
- TA-328. Saviku**  
Peat-like sapropel with admixture of fine-grained sand from depth 690 to 700cm, overlain immediately by DR3 and PB contacts.
- Haani series**  
Submerged organogenic deposits from central part of E shore of Lake Võrtsjärv, Estonian SSR. Samples coll 1970 by E Ilves and T Rinne.
- 470 ± 60**  
**AD 1480**
- TA-233. Haani**  
Peat from depth 87 to 90cm.
- 2510 ± 60**  
**560 BC**
- TA-234. Haani**  
Sapropel from depth 117 to 130cm.

**Kurnovo Bog series**

Kurnovo Bog lies ca 7km E of town of Pechory, Pskov Region, RSFSR. Samples coll 1970 by E Ilves and A Sarv by hand from cleaned wall of quarry.

**TA-231. Kurnovo**

Peat from depth 75 to 80cm.

**2820 ± 70**  
**870 BC**

**TA-232. Kurnovo**

Peat from depth 95 to 98cm.

**3970 ± 70**  
**2020 BC**

**Shalkar series**

Submerged wood remains near Lake Shalkar, Volodar Dist, Kokchetav Region, Kazakh SSR. Samples coll in 1969 and subm by A Shnitnikov, Inst Limnol, Acad Sci USSR.

**TA-383. Shalkar**

Submerged pine stump, age according to annual rings, 90 yr, discovered upside down in thick massif of fine sand on NE shore of lake. Depth, ca 1.2m.

**380 ± 50**  
**AD 1570**

**TA-381. Shalkar**

Submerged tree trunk from deposits of isolated lagoon on N shore of lake. Depth 2.4m below surface of sand bar.

**470 ± 50**  
**AD 1480**

**TA-377. Shalkar**

Submerged pine stump, age according to annual rings, 26 yr, from lower submerged horizon in NE bay of lake.

**310 ± 50**  
**AD 1640**

**TA-376. Korzhun I**

Juniper trunk, age according to annual rings, 527 yr, from Dzhungar Alatau, basin of Koksuz R, upper reaches of Korzhun R, +2730m. Trunk lay on debris of left bank of Korzhun R valley, inside dense juniper shrubbery. No arboreal vegetation in area. Probable age, 400 to 500 yr. Sample coll and subm by A Shnitnikov.

**Modern**

**TA-430. Chatyrkyol I**

Algae from layer of submerged gyttja, 12 to 16cm thick, among silty, well-interstratified sands of ancient deposits on left shore of Lake Chatyrkyol, Central Tien Shan, +3530m. According to mode of occurrence, the sample age, 4000 or 5000 yr, was estimated. Sample coll by A Shnitnikov and E Maximov; subm by A Shnitnikov.

**9300 ± 120**  
**7350 BC**

**Pesochnya Bog series**

Peat bog in Zheleznogorsk Dist, Kursk Region, RSFSR, 200m NE of village of Andreyevskaya, S of Moscow-Kiev Hwy. Samples coll 1970 and

subm by T Serebryannaya, Inst Geog, Acad Sci SSSR, who also did paleobotanic analyses.

**TA-357. Pesochnya** **190 ± 50**  
**AD 1760**

Sedge peat from depth 120 to 125cm, at place of contact overlain by *Carex* and *Bryales* peat. Beginning of intensive forest clearance and plowing up of territories.

**TA-358. Pesochnya** **1820 ± 60**  
**AD 130**

Alder wood from horizon of wood and sedge peat at depth 195 to 205cm. Upper maximum of oak forest distribution.

**TA-352. Pesochnya** **3830 ± 60**  
**1880 BC**

Reed and sedge peat from depth 305 to 310cm. Culmination of linden pollen.

**TA-359. Pesochnya** **3720 ± 60**  
**1770 BC**

Basal reed and sedge peat (with slight admixture of fine-grained sand) from depth 310 to 315cm, above place of contact with reed and sapropel-like peat.

#### **Liniya Bog series**

Liniya peat bog lies in upper reaches of Gnilusha R, tributary of Oka R, Kromysk Dist, Orel Region, RSFSR, 300m NE of village of Liniya, E of Moscow-Simferopol Hwy.

Light gray sapropels with scattered plant remains at base of sec. Higher in sec lie peat-like reed sapropel as well as various kinds of peat: *Bryales* with remains of wood and birch bark, *Menyanthes-Phragmites* and *Menyanthes-Phragmites* peat.

Peat bog covered with diluvial mantle, 120cm thick. Absolute heights of mantle surface ca 220m (Serebryannaya and Ilves, 1973). Samples coll and subm 1970 by T Serebryannaya, Inst Geog, Acad Sci USSR.

**TA-427. Liniya** **1940 ± 50**  
**AD 10**

Arbor-*Menyanthes-Phragmites* peat from depth 123 to 128cm, Upper maximum of oak forest distribution.

**TA-378. Liniya** **2210 ± 60**  
**260 BC**

Birch wood from horizon of *Bryales* peat 185cm below surface, dating from period of oak forest distribution.

**TA-428. Liniya** **2730 ± 60**  
**780 BC**

Reed peat from depth 229 to 232cm at place of contact overlain by arbor-*Menyanthes-Phragmites* peat. Rational boundary of oak pollen.

**TA-429. Liniya****2860 ± 60****910 BC**

Reed peat from depth 249 to 252cm. Replacement of principal forest-forming plant species, oak replaces linden.

**Retyazh series**

Samples from 2 secs in upper reaches of Retyazhi R, left tributary of Oka R, NW of village of Borisovka Kroyssk Dist, Orel Region, RSFSR. River originates from confluence of 2 rather large streams cutting deep into winding valley. First 3 dates are from sec at base of left valley, 0.5km from point of confluence of both sources of Retyazhi R; 4th date from sec lying on steep slope of right valley, 1km from point of confluence of sources. Samples coll and subm 1970 by T Serebryannaya.

**TA-373. Retyazh 6****1250 ± 60****AD 700**

Peaty loam from depth 155 to 160cm, central part of bed.

**TA-374. Retyazh 6****2220 ± 60****270 BC**

*Bryales* and *Carex* peat from depth 220 to 225cm, upper part of bed.

**TA-375. Retyazh 6****3880 ± 60****1930 BC**

*Bryales* and *Carex* peat from depth 290 to 295cm, central part of bed.

**TA-360. Retyazh 8****2410 ± 60****460 BC**

*Carex* peat from depth 170 to 175cm, upper half of bed.

## REFERENCES

- Serebryannaya, T and Ilves, E, 1972, First data on palynology and age of a watershed peat-bog in the central part of Central Russian heights near the town of Zheleznogorsk (in Russian). Acad Sci Estonian SSR Proc, Chem & Geol ser, v 21, no. 2, p 161.
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