

**GEOLOGICAL SURVEY OF FINLAND  
RADIOCARBON MEASUREMENTS IV**

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The following results represent measurements carried out since our 3rd date list was prepared. The entire CO<sub>2</sub> purification technique (Radiocarbon, 1962, v. 4, p. 81-83) has been changed to "wet purification." No measurements of C<sup>12</sup>/C<sup>13</sup> ratios have been made.

I. GEOLOGIC SAMPLES

- Su-34. Kuusamo, E Finnish Lapland** **7430 ± 190**  
**5480 B.C.**  
*Bryales* peat taken with piston sampler, depth 4.55 to 4.60 m, surface alt. 272 m, Takasuo bog (65° 56' N Lat, 29° 10' E Long). Coll. 1962 by E. Hyyppä. *Comment*: pollen analysis shows early Atlantic period.
- Su-35. Kuusamo, E Finnish Lapland** **9320 ± 170**  
**7370 B.C.**  
Same bog as Su-34, fine detritus gyttja taken with piston sampler, depth 4.80 to 4.85 m. Coll. 1962 by E. Hyyppä. *Comment*: pollen analysis shows later part of *Betula* maximum time. The C-14 date is possibly too old for this horizon in Lapland.
- Su-36. Pello, W Finnish Lapland** **8250 ± 150**  
**6300 B.C.**  
Fine detritus gyttja taken with piston sampler, depth 5.53 to 5.65 m, surface alt. 101.4 m, Kaakkuririipi bog (66° 47' N Lat, 24° 15' E Long). Coll. 1962 by E. Hyyppä. *Comment*: pollen and diatom analysis indicate early Littorina I stage at beginning of Atlantic period (Hyyppä, 1966).
- Su-37. Virolahti, SE Finland** **7835 ± 170**  
**5885 B.C.**  
Allochthonous peat and coarse detritus gyttja taken with piston sampler, depth 5.05 to 5.12 m, surface alt. 27.11 m, Ruokolampi bog (60° 32' N Lat, 27° 40' E Long). Coll. 1961 by M. Salmi. *Comment*: pollen and diatom analysis indicate beginning of Littorina I stage (Salmi, 1961).
- Su-38. Sippola, SE Finland** **9710 ± 230**  
**7760 B.C.**  
*Sphagnum-Carex-Equisetum* peat taken with piston sampler, depth 6.55 to 6.65 m, surface alt. 52.42 m, Hangassuo bog (60° 47' N Lat, 26° 55' E Long). Coll. 1948 by M. Salmi. *Comment*: pollen analysis shows Pre-Boreal *Betula* maximum (Salmi, 1948).
- Su-39. Kuusamo, E Finnish Lapland** **8080 ± 150**  
**6130 B.C.**  
Coarse detritus gyttja from drowned peat bog, taken with piston sampler, depth 3.03 to 3.08 m, surface alt. 251.06 m, Joukamajärvi (65°

52' N Lat, 30° E Long). Coll. 1963 by E. Hyyppä. *Comment*: pollen analysis shows *Betula* maximum in beginning of Atlantic period.

**8030 ± 200**

**6080 B.C.**

**Su-40. Pello, W Finnish Lapland**

Terrestrial peat taken with piston sampler, depth 6.0 to 6.1 m, surface alt. 228.76 m, Tornio R. Valley (66° 46' N Lat, 24° 04' E Long). Coll. 1961 by E. Hyyppä. Sample coll. from same profile as Su-24 (Radio-carbon, 1963, v. 5, p. 303) in which surface alt. 288 m was in error. *Comment*: sample lay directly above *Betula* wood dated 6200 B.C.

**Su-42. Luumäki, SE Finland**

**Modern**

Wood under sand layer, Käännetsalo Is. (60° 55' N Lat, 27° 30' E Long). Coll. 1965 by E. Hyyppä. *Comment*: wood belongs to very late transgression of Lake Saimaa.

**8660 ± 240**

**6710 B.C.**

**Su-43. Virolahti, SE Finland**

Fine fresh-water mud taken with piston sampler, depth 7.70 to 7.80 m, surface alt. 36.0 m, Huosiosuo bog (60° 33' N Lat, 27° 38' E Long). Coll. 1966 by E. Hyyppä. *Comment*: pollen and diatom analysis indicate Pre-Boreal regression maximum from Yoldia II to Yoldia IV; horizon represents isolation and is overlain by thin layer belonging to Yoldia IV transgression (Hyyppä, 1966).

**2560 ± 100**

**610 B.C.**

**Su-44. Enontekiö, NW Finnish Lapland**

*Sorbus aucuparia* wood from layer of fine sand and sand, taken with piston sampler, depth 2.5 to 3.0 m, Markkina (68° 30' N Lat, 22° 20' E Long). Coll. 1966 by H. Roivainen. *Comment*: horizon represents beginning of Sub-Atlantic flood period.

**4285 ± 130**

**2335 B.C.**

**Su-45. Nurmo, W Finland**

*Sphagnum-Carex* peat from hand-dug sec., depth 1.36 to 1.39 m, surface alt. 93.9 m, Kurjenneva bog (62° 46' N Lat, 23° 08' E Long). Coll. 1962 by M. Salmi. *Comment*: pollen analysis shows beginning of *Picea* curve (Salmi, 1963).

**6420 ± 130**

**2670 B.C.**

**Su-46. Nurmijärvi, S Finland**

*Carex-Sphagnum* peat taken with piston sampler, depth 0.4 to 0.5 m, surface alt. 69 m, Råbacka bog (60° 29' N Lat, 24° 57' E Long). Coll. 1966 by K. Virkkala. *Comment*: sample lay directly under horizon showing beginning of pollen-analytical *Picea* curve (Virkkala, 1966).

**5950 ± 150**

**4000 B.C.**

**Su-47. Joensuu, E Finland**

*Betula* wood from sand layer, taken with piston sampler, depth 3.15 m, surface alt. 84.68 m, Raatekangas (62° 40' N Lat, 29° 50' E Long).

Coll. 1967 by E. Hyyppä. *Comment*: wood belongs to early transgression of Lake Saimaa.

**Su-48. Hauho, S Finland** **1250 ± 70**  
**700 A.D.**

Wood from layer of sand, depth 0.3 m (61° 15' N Lat, 24° 40' E Long). Coll. 1966 by E. Hyyppä. *Comment*: wood possibly belongs to late transgression of Lake Vanajavesi.

**Su-49. Imatra, SE Finland** **8250 ± 200**  
**6300 B.C.**

*Bryales* peat containing remnants of deciduous trees from under silty mud, depth 11.0 m, surface alt. 75.65 m, Kaukopää (61° 10' N Lat, 28° 50' E Long). Coll. 1966 by E. Hyyppä. *Comment*: pollen analysis shows latter half of Boreal period; horizon antedates transgression of Lake Saimaa.

**Su-50. Joensuu, E Finland** **5810 ± 150**  
**3860 B.C.**

Sandy peat from under fine sand, Surakka (62° 40' N Lat, 29° 40' E Long). Coll. 1960 by E. Hyyppä. *Comment*: sample represents early stage of Lake Saimaa transgression.

**Su-51. Asikkala, S Finland** **7550 ± 180**  
**5600 B.C.**

*Pinus* wood from under stony gravel in Kalkkinen canal (61° 15' N Lat, 25° 30' E Long). Coll. 1963 by H. Peltola and E. Hyyppä. *Comment*: wood indicates forest drowned by early Lake Päijänne transgression.

**Su-52. Helsinki, S Finland** **4940 ± 140**  
**2990 B.C.**

*Alnus* wood from hand-dug sec., depth 2.80 m, surface alt. ca. 30 m, Myllypuro (60° 14' N Lat, 25° 07' E Long). Coll. 1965 by E. Hyyppä. *Comment*: horizon represents approx. time of Littorina IV, local shore alt. 23 m.

**Su-54. Luumäki, SE Finland** **1130 ± 100**  
**820 A.D.**

*Carex* peat under sand layer, alt. 75.6 m, Käännetsalo Is. (60° 55' N Lat, 27° 30' E Long). Coll. 1965 by E. Hyyppä. *Comment*: peat belongs to late transgression of Lake Saimaa.

#### **Porvoo series**

Surface and threshold alt. 28.5 m of the Bastuberg peat bog (60° 21' N Lat, 25° 47' E Long). Su-41 and Su-53 coll. 1966, others 1967 by E. Hyyppä.

**Su-41.** **6870 ± 165**  
**4920 B.C.**

Coarse detritus gyttja, depth 1.75 to 1.82 m. *Comment*: pollen and diatom analysis indicate beginning of Littorina II stage.

- Su-53.** **5560 ± 140**  
**3610 B.C.**  
Coarse detritus gyttja, depth 1.27 to 1.33 m. *Comment:* horizon represents time when basin had already isolated from Littorina II stage and Littorina III stage (local shore alt. 26 m) was established.
- Su-55.** **4110 ± 130**  
**2160 B.C.**  
*Betula* bark, depth 0.65 m. *Comment:* pollen analysis shows beginning of *Picea* curve.
- Su-56.** **3910 ± 180**  
**1960 B.C.**  
Peat containing remnants of deciduous trees, depth 0.60 m. *Comment:* same as Su-55.
- Su-57.** **5860 ± 200**  
**3910 B.C.**  
Coarse detritus gyttja, depth 1.30 to 1.35 m. *Comment:* same as Su-53.
- Su-58.** **5570 ± 200**  
**3620 B.C.**  
*Phragmites* leaves and cones, depth 1.30 m. *Comment:* same as Su-53 and Su-57.
- Su-59.** **6010 ± 105**  
**4060 B.C.**  
*Phragmites* leaves and cones, depth 1.60 m. *Comment:* pollen and diatom analysis indicate maximum of Littorina II stage.
- Su-60.** **7950 ± 190**  
**6000 B.C.**  
Wood, depth 2.60 m. *Comment:* horizon represents Littorina I stage directly after maximum stage.
- Su-61.** **8200 ± 270**  
**6250 B.C.**  
*Pinus* wood, depth 2.80 m. *Comment:* horizon represents beginning of maximum transgression of Littorina I stage.
- Su-62.** **6810 ± 165**  
**4860 B.C.**  
Wood, depth 1.80 m. *Comment:* horizon represents beginning of maximum transgression of Littorina II stage.
- Su-63.** **7100 ± 170**  
**5150 B.C.**  
Wood and *Phragmites* leaves, depth 1.70 to 1.75 m. *Comment:* horizon represents beginning of maximum transgression of Littorina II stage.

- Su-64. Helsinki, S Finland** **5110 ± 115**  
**3160 B.C.**  
Same sec. as Su-52, coarse detritus gyttja, depth 3 m. Coll. 1965 by E. Hyypä. *Comment*: diatom analysis shows brackish-water facies; sample belongs to final phase of Littorina III stage.

- Su-65. Virolahti, SE Finland** **6310 ± 130**  
**4360 B.C.**  
Fine detritus gyttja taken with piston sampler, depth 4.40 to 4.50 m, surface alt. 19.67 m, Reskovinsuo bog (60° 33' N Lat, 27° 40' E Long). Coll. 1966 by E. Hyypä. *Comment*: horizon represents time subsequent to Littorina II maximum.

- Su-66. Ulvila, W Finland** **Modern**  
Branch of *Betula* from sand pit, depth 15 m (61° 24' N Lat, 21° 58' E Long). Coll. 1967 by K. Virkkala. *Comment*: sample is from slumped portion in pit.

## II. ARCHAEOLOGIC SAMPLE

- Su-67. Sodankylä, Finnish Lapland** **Modern**  
*Pinus* wood from under boat of ancient Lapp dwelling place, Sompiojärvi (68° 05' N Lat, 27° 27' E Long). Coll. 1964 by E. Hyypä.

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