RADIOCARBON DATES II

Högne Jungner and Eloni Sonninen

INTRODUCTION

This second date list from the Radiocarbon Dating Laboratory of the University of Helsinki is a continuation of the first one published in 1979. The list brings the published dates up to about number Hel-1400 and covers the time from 1976 to 1980.

The detectors mentioned in Date List I are still in use and the replacement of the old electronics by more modern units has not changed the background or modern countrates.

A combustion bomb (Switsur 1972) has been used since 1976 for combustion of samples containing more than ca. 2% of carbon. The flowreactor for methane synthesis was replaced by a bomb type in 1977.

Dates reported are based on 95% of the activity of NBS oxalic acid and the Libby half-life 5568 ± 30 a. Errors quoted (±1σ) include counting uncertainties for sample, standard and background. For samples up to number 1050 the uncertainty in the half-life was also included in the errors given. $\delta^{13}C$ values reported in a few cases are relative to the PDB standard. No correction for isotopic fractionation is applied to the dates.

The date list is compiled according to laboratory number. Series of samples from the same site are, however, grouped together. At the end of the report an index according to submitter is included.

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TYÖTJÄRVI SERIES, HOLLOLA

60°59'N, 25°28'E, 142.8 m a.s.l.
Coll. and subm. 1975 by P. Alhonen, J. Donner and M. Eronen.
General comment(JD): The series of samples, taken with a Livingstone piston sampler, were used for the determination of the rate of sedimentation in the lake and for the dating of the percentage and pollen influx diagrams as well as the diagrams of diatoms and Cladocera. The dates were compared with those from the nearby raised bog (Donner et al. 1978). See also Varrassuo series Hel-823.

Hel-674 — 9020 ± 190 / 7070 BC
Mud, 1.80-1.88 m depth.

Hel-737 — 7870 ± 180 / 5920 BC
Mud, 1.40-1.50 m depth.

Hel-738 — 5620 ± 140 / 3670 BC
Mud, 1.00-1.10 m depth.

Hel-739 — 3460 ± 150 / 1510 BC
Mud, 0.60-0.70 m depth.

Hel-740 — 1220 ± 110 / AD 730
Mud, 0.20-0.30 m depth.

Hel-770 — 2350 ± 100 / 400 BC
Mud, 0.40-0.50 m depth.

Hel-771 — 4690 ± 110 / 2740 BC
Mud, 0.80-0.90 m depth.

Hel-772 — 7230 ± 140 / 5280 BC
Mud, 1.20-1.30 m depth.

Hel-773 — 8480 ± 180 / 6530 BC
Mud, 1.60-1.70 m depth.

Hel-827 — 8580 ± 170 / 6630 BC
Mud, 1.70-1.80 m depth. — $\delta^{13}C$=-24.2 ‰

Hel-828 — 7690 ± 160 / 5740 BC
Mud, 1.50-1.60 m depth. — $\delta^{13}C$=-31.2 ‰

Hel-829 — 7410 ± 160 / 5460 BC
Mud, 1.30-1.40 m depth. — $\delta^{13}C$=-28.8 ‰

Hel-830 — 6150 ± 150 / 4200 BC
Mud, 1.10-1.20 m depth. — $\delta^{13}C$=-30.7 ‰

Hel-847 — 5270 ± 130 / 3320 BC
Mud, 0.90-1.00 m depth. — $\delta^{13}C$=-36.8 ‰

Hel-848 — 4210 ± 150 / 2260 BC
Mud, 0.70-0.80 m depth. — $\delta^{13}C$=-31.8 ‰

Hel-849 — 2950 ± 150 / 1000 BC
Mud, 0.50-0.60 m depth. — $\delta^{13}C$=-31.7 ‰

Hel-850 — 1590 ± 90 / AD 360
Mud, 0.30-0.40 m depth. — $\delta^{13}C$=-31.4 ‰

NIMISJÄRVI SERIES, UTAJÄRVI

64°30'N, 26°46'E, 135 m a.s.l.
Coll. 1975 by C. Reynaud and M. Hjelmroos with a Livingstone piston sampler. Subm. 1975 by C. Reynaud.
Ref. Reynaud and Hjelmroos (1980).

Hel-756 — 4750 ± 230 / 2800 BC
Gyttja, 0.66-0.74 m depth.
Comment(CR): Spruce immigration.

Hel-757 — 3020 ± 170 / 1070 BC.
Gyttja, 0.38-0.46 m depth.
Comment(CR): Spruce decline.

Hel-758 4550 ± 190
2600 BC

Gyttja, 1.10-1.19 m depth.
Comment(CR): First Plantago lanceolata.

Hel-759 9450 ± 220
7500 BC

Gyttja, 2.20-2.28 m depth.
Comment(CR): Pollen zone limit NIM I/NIM II.

Hel-760 10950 ± 350
9000 BC

Gyttja, 2.40-2.54 m depth.
Comment(CR): Isolation phase.

PALLONEVA SERIES, JALASJÄRVI

62°28'N, 22°32'E
Coll. and subm. 1974 by G. Söderman.

Hel-761 5120 ± 170
3170 BC

Peat, 1.15-1.25 m depth, 143.2 m a.s.l.
Comment(GS): Sample taken from central plateau of the raised bog, dated stratum below 25 cm thick aeolian cover sand. Dating indicates maximum age of dune formation at the site.

Hel-762 3740 ± 170
1790 BC

Peat, 0.80-0.90 m depth.
Comment(GS): Sample taken from "kulju"-hollow at the NW-part of the raised bog, dated stratum above aeolian cover sand. The dating indicates minimum age of seized aeolian activity at the site.

Hel-763 LEVITUNTURI, SIRKKA 2790 ± 110
840 BC

67°45'N, 24°51'E, 202.8 m a.s.l.
Peat, 2.90-3.00 m depth.
Coll. and subm. 1974 by G. Söderman.
Comment(GS): Sample taken from bog SE of Mt Levitunturi. Peat-stratum above solifluction sheet.

DEGERMOSSA SERIES, BRÄNDÖ, AALAND

60°25'N, 21°05'E

Coll. with piston sampler and subm. 1975 by G. Glückert.

Hel-764 3370 ± 120
1420 BC

Gyttja clay and sand, 3.80-3.90 m depth.

Comment(GG): The postglacial invasion of Picea in SW Finland.

Hel-768 1800 ± 160
AD 150

Gyttja, 1.90-2.00 m depth.

Comment(GG): Isolation of the basin from the Baltic. The age of shoreline L VII.

Hel-765 HEIKINSAARENSUO, YLÄNE 2720 ± 210
770 BC

60°50'N, 22°15'E

Clay gyttja, 1.75-1.80 m depth.

Coll. with piston sampler and subm. 1975 by G. Glückert.

Comment(GG): Hiatus (Clypeus-stage).

Hel-766 JÄNESSUO, YLÄNE 5930 ± 260
3980 BC

60°50'N, 22°15'E

Clay gyttja, 3.05-3.10 m depth.

Coll. with piston sampler and subm. 1975 by G. Glückert.

Comment(GG): Hiatus (Clypeus-limit).

Hel-767 HIITTENMÄENSUO, HALIKKO 8620 ± 190
6670 BC

60°26'N, 23°00'E

Clay gyttja, 2.20-2.30 m depth.

Coll. with piston sampler and subm. 1975 by G. Glückert.

Comment(GG): The end of the Ancylus transgression in SW Finland.

Hel-768 DEGERMOSSA SERIES Hel-764

Hel-769 PULKKILA 2970 ± 170
1020 BC

64°15'N, 25°50'E, about 80 m a.s.l.

Wood, about 2.0 m depth.

Coll. 1975 by H. Kallio in connection with building work.

Subm. 1975 by Y. Vasari.

Comment(YV): Dated in order to check the possible need for further studies concerning this wood found "within till". It is possible that the wood has been buried as result of shifts in the course of the nearby Siikajoki.

Hel-770 - 773 TYÖTJÄRVI SERIES Hel-674

Hel-774 HAILUOTO 740 ± 90
AD 1210
65°01'N, 24°40'E, 10 m a.s.l.
Peat, 0.23-0.25 m depth.
Coll. and subm. 1975 by C. Reynaud.
Ref. Reynaud and Hjelmroos (1976) and Reynaud and Hjelmroos (1980).
Comment(CR): Date of the first human influence on Hailuoto.

DOMSVATNET SERIES, VARDØ, NORWAY

70°19'30"N, 31°02'E
Coll. 1975 by H. Hyvärinen, M. Saarnisto and M. Eronen with a Livingstone sampler. Subm. 1975 by H. Hyvärinen.
General comment(HH): Five samples from Domsvatnet were dated to determine the rate of sedimentation and to date the local pollen zones. The results are consistent mutually and with the overall stratigraphy and suggest an even rate of sedimentation of 0.37 mm/yr (Hyvärinen 1976).

Hel-775 8570 ± 200
6620 BC
Clay gyttja, 2.80-2.90 m depth.

Hel-776 7370 ± 170
5420 BC
Clay gyttja, 2.40-2.50 m depth.

Hel-777 6000 ± 150
4050 BC
Clay gyttja, 1.90-2.00 m depth.

Hel-778 4010 ± 140
2060 BC
Clay gyttja, 1.20-1.30 m depth.

Hel-779 2560 ± 120
610 BC
Clay gyttja, 0.60-0.70 m depth.

Hel-780 TAIVALKOSKI 630 ± 140
AD 1320
66°55'N, 24°42'E
Wood
Coll. and subm. 1975 by K. Korpela.
Comment(KK): The sample is taken to date a solifluction in the bank of Kemijoki river.

PERÄPOHJOLA SERIES

Samples coll. 1975, 1976 and 1979 by M. Saarnisto using a piston corer.
General comment(MS): The following dates on mud (gyttja) from small lake basins in the area north of the Gulf of Bothnia provide data on deglaciation history, emergence of the area from the Baltic basin waters and pollen stratigraphy. Most samples are composites from equivalent stratigraphical levels of duplicate corers. See also Hel-707 - 709 and Hel-714 - 717 in Jungner (1979). Ref. Saarnisto (1981).

Hel-781 YLEMPI SILMÄSLAMPI, ROVANIEMI 8780 ± 230
6830 BC
66°39.5'N, 25°58'E, 206.7 m a.s.l.
Diatom mud, 5.39-5.45 m depth.
Comment(MS): For control of Hel-796. Birch pollen zone.

Hel-782 LOMPOLOJÄRVI, PELLO 10230 ± 300
8280 BC
66°41'N, 24°13'E, 170 m a.s.l.
Mud, 6.03-6.09 m depth.
Comment(MS): The date is older than expected, on the basis of nearby sites, by more than 1000 years.

Hel-795 YLEMPI SILMÄSLAMPI, ROVANIEMI 6660 ± 190
4710 BC
Diatom mud, 4.89-4.95 m depth.
Comment(MS): Birch-pine-alder pollen zone.

Hel-796 YLEMPI SILMÄSLAMPI, ROVANIEMI 9030 ± 200
7080 BC
Clay mud, 5.45-5.51 m depth.
Comment(MS): Emergence (isolation) of Lake Ylempi Silmäslampi from Baltic basin waters. Minimum date for deglaciation. Birch pollen zone.

Hel-797 LOMPOLOJÄRVI, PELLO 9480 ± 290
7530 BC

Mud, 5.97-6.03 m depth.
Comment(MS): See Hel-782.

Hel-938 ISO MUSTAJÄRVI, YLITORNIO 4820 ± 170
2870 BC

66°25'N, 23°50'E, 70.0 m a.s.l.
Mud, 1.81-1.87 m depth.
Comment(MS): Emergence (isolation) of Lake Iso Mustajärvi from Baltic basin waters. Another date from equivalent stratigraphical level 5380±65 (Lu-1431) in Hjelmroos (1979).

Hel-984 LUPOJÄRVI, PELLO 7860 ± 150
5910 BC

66°46'N, 24°02'E, 91.8 m a.s.l.
Mud, 4.98-5.05 m depth.
Comment(MS): Emergence (isolation) of Lake Lupojärvi from Baltic basin waters. The date is older than expected by more than 500 years.

Hel-1334 KAAKKURINLAMPI, ROVANIEMI 5950 ± 110
4000 BC

66°36'N, 25°37'E, 79.2 m a.s.l.
Mud, 4.10-4.20 m depth.
Comment(MS): For control of Hel-1335.

Hel-1335 KAAKKURINLAMPI, ROVANIEMI 6220 ± 120
4270 BC

Clay mud, 4.20-4.30 m depth.
Comment(MS): Emergence (isolation) of Lake Kaakkurinlampi from Baltic basin waters.

LAPINLAMPI SERIES, YLIKIIMINKI

65°10'N, 26°08'E, 86.9 m a.s.l.
Samples coll. 1979 by M. Saarnisto using a piston corer.
Subm. 1979 by M. Saarnisto.

Hel-1332 3930 ± 110
1980 BC

Mud, 3.05-3.20 m depth.
Comment(MS): Immigration of spruce in pollen stratigraphy.

Hel-1333 6430 ± 90
4480 BC

Clay-mud, 5.06-5.16 m depth.
Comment(MS): Immediately predates the emergence (isolation) of Lake Lapinlampi from Baltic basin waters ("clypeus" lagoon of the Litorina Sea).

MAASELÄNPURO SERIES, POSIO

66°02'N, 28°03'E
Coll. and subm. 1975 by O. Heikkinen.
Ref. Heikkinen and Kurimo (1977).

Hel-783 MAANSELÄNPURO, lake 8880 ± 190
6930 BC

7326.0N, 548.0 E, 247 m a.s.l.
Sand/silt gyttja, 4.70 m depth.
Comment(OH): Uppermost flowing water sediments of the ancient outflowchannel of Lake Kitka.

Hel-784 MAANSELÄNPURO, lake 9480 ± 190
7530 BC

Gyttja, 4.95 m depth.
Comment(OH): Basal organic material in the ancient outflow channel of Lake Kitka.

Hel-785 MAASELÄNPURO, bog 8440 ± 170
6490 BC

7326.5 N, 547.0 E, 248 m a.s.l.
Eq- and C-rich gyttja, 2.75-2.80 m depth.
Comment(OH): Cessation of flow conditions in the ancient outflow channel of Lake Kitka.

Hel-786 MAANSELÄNPURO, bog 9390 ± 170
7440 BC

Sand/silt gyttja, 3.30-3.35 m depth.
Comment(OH): Basal organic material in the ancient outflow channel of Lake Kitka.

Hel-787 MAANSELÄNPURO, bog 10050 ± 180
8100 BC

Sand and silt with some gyttja, 3.45-3.55 m depth.
Comment(OH): Basal organic material in the ancient outflow channel of Lake Kitka.

SONKAJA SERIES, ILOMANTSI

62°45'N, 30°45'E, 180.8 m a.s.l.
Coll. 1975 by H. Hyvärinen and M. Saarnisto, 1976 by H. Hyvärinen and H. Jungner with a piston corer.
Subm. 1976 by H. Hyvärinen.

Hel-788 SO II/5 — 9170 ± 180 / 7220 BC

Gyttja clay, 2.90-3.00 m depth.
Comment(HH): Humic fraction of sample Hel-745 dated at 9840±180 BP. The sample is from organic silt intercalated between sands at the base of the section and it belongs to the Artemisia pollen zone (Younger Dryas). The dates are younger than expected. The lower age obtained for the humic fraction suggests contamination by younger humus in groundwater percolated through the basal sands.

Hel-842 SO III/7 — 9360 ± 190 / 7410 BC

Clay gyttja/gyttja, 1.025-1.050 m depth.
Comment(HH): The date relates to the early Flandrian Birch Zone and conforms to expectation.

Hel-843 SO III/8 — 8950 ± 170 / 7000 BC

Clay gyttja/gyttja, 0.925-0.950 m depth.
Comment(HH): The date relates to the Birch Zone/Pine Zone transition and conforms to expectation.

Hel-844 SO III/9 — 8540 ± 180 / 6590 BC

Clay gyttja/gyttja, 0.825-0.850 m depth.
Comment(HH): The date relates to the lower part of the Pine-Birch Zone and is consistent with other dates from the core (Hel-845, 843, 842).

Hel-845 SO III/10 — 7510 ± 170 / 5560 BC

Clay gyttja/gyttja, 0.525-0.550 m depth.
Comment(HH): The date relates to the middle part of Pine-Birch Zone and is consistent with other dates from the core (Hel-844, 843, 842).

See also Sonkaja series Hel-73, 85, 86, 744, 745 in Jungner (1979).

PERÄ-PUIKKONEN SERIES, POSIO

7328.5 N, 549.5 E / 66°03'N, 28°05'E, 246 m a.s.l.
Coll. 1975 by O. Heikkinen and M. Eronen. Subm. 1975 by O. Heikkinen.
Ref. Heikkinen and Kurimo (1977).

Hel-789 — 9340 ± 210 / 7390 BC
Gyttja clay and clay gyttja, 5.05-5.15 m depth.
Comment(OH): Basal organic material of a peat-filled basin isolated from Lake Kitka.

Hel-790 — 9320 ± 200 / 7370 BC
Clay gyttja, 4.97-5.02 m depth.
Comment(OH): Basal organic material of a small lake isolated from Lake Kitka.

Hel-791 — 8570 ± 170 / 6620 BC
Clay gyttja, 4.68-4.73 m depth.
Comment(OH): Appearance of alder.

Hel-792 — 7540 ± 210 / 5590 BC
Clay gyttja, 4.47-4.52 m depth.
Comment(OH): Spread of alder.

Hel-793 — 6550 ± 190 / 4600 BC
Gyttja, 3.775-3.825 m depth.
Comment(OH): Isolation of basin.

Hel-794 KILTERI SERIES Hel-475

Hel-795 - 797 PERÄPOHJOLA SERIES Hel-781

PAATSJOEN LUUSUA, INARI

Coll. 1974 by M. Torvinen. Subm. 1975 by A. Siiriäinen.

Hel-798 — 7310 ± 200 / 5360 BC
Charcoal, 0.15 m depth.

Hel-870 4840 ± 140
2890 BC

Charcoal, 0.10 m depth.

HUKKALANHARJU SERIES, VIEREMÄ

Coll. 1975 by L. Pohjakallio. Subm. 1975 by A. Siiriäinen. General comment(LP): The samples are from a hearth. The dwelling site is archaeologically dated to the Early Asbestos Ceramic or the typical Comb Ceramic period.

Hel-799 5190 ± 140
3240 BC

Charcoal, 0.10 m depth.

Hel-800 5340 ± 150
3390 BC

Charcoal, 0.50 m depth.

Hel-801 PYHEENSILTA, MYNÄMÄKI 1460 ± 130
AD 490

Charcoal, 14775:110
Coll. 1959 by C.F. Meinander.
Subm. 1975 by M. Perkko.

Hel-802 PYHEENSILTA, MYNÄMÄKI 940 ± 130
AD 1010

Charcoal, 14775:291

SKI SERIES

Samples from skis of various types found in bogs.
Subm. 1974-1980 by E. Naskali and A. Siiriäinen.

Hel-803 PETÄJÄAAPA, KEMIJÄRVI 1270 ± 100
AD 680

KM 9908

Hel-1059 KORTEJÄRVI, URJALA 1550 ± 110
AD 400

Hel-1077 SUMMASJÄRVI, SAARIJÄRVI 1460 ± 130
AD 490

MVKTE 8528

Hel-1078 KAATAMO, LIPERI 1670 ± 100
AD 280

MVKTE 10351

Hel-1079	SÄRÄISNIEMI, VAALA	1640 ± 110 AD 310
Hel-1097	SIILINJÄRVI	930 ± 120 AD 1020
Hel-1233	ÄKÄSLOMPOLO, KOLARI MVKTE 10521	530 ± 90 AD 1420
Hel-1235	HÄMÄLÄNMÄKI, PUUMALA MVKTE 10586	300 ± 90 AD 1650
Hel-1237	POSIO MVKTE 10421	210 ± 100 AD 1740
Hel-1328	POSIO MVKTE 10670	1420 ± 100 AD 530
Hel-1329	SYSMÄ KM 13016	2220 ± 100 270 BC
Hel-1330	SALLA MVKTE 8227	4470 ± 110 2520 BC
Hel-1331	PIELISJÄRVI MVKTE 8586	540 ± 90 AD 1410
Hel-1342	VIRRAT MVKTE 8773	900 ± 110 AD 1050
Hel-1343	LAPPI TL. MVKTE 8913	1110 ± 90 AD 840
Hel-1344	TYRVÄÄ MVKTE 8704	1880 ± 90 AD 70
Hel-1345	KATILA, KANGASALA MVKTE 10697	1780 ± 100 AD 170

Hel-804 DÄVITS, ESPOO 2500 ± 110
550 BC

60°11'N, 24°45'E
Charcoal, 19431:17, about 0.35-0.40 m depth.
Coll. and subm. 1974 by M. Schauman-Lönnqvist.
Comment(MS-L): The sample is from a fire-place in a dwelling site connected to a burial ground and the date agrees with the archaeological finds from the site.
Ref. Meinander (1969).

MANGS SERIES, KIRKNIEMI, LOHJA

60°11'N, 23°55'E
Coll. 1975 by S. Sarkki. Subm. 1975 by A. Siiriäinen.
General comment(SS): Charcoal pit with stone siding close to Early Iron Age burial cairns.

Hel-805 MANGS 1 470 ± 120
AD 1480

106/102, 2. level
Charcoal, about 0.30 m depth.

Hel-806 MANGS 2 510 ± 130
AD 1440

106/104, 5. level
Charcoal, about 0.60 m depth.

SUBFOSSIL PINE SERIES FROM NORTHERN FINLAND

Coll. and subm. 1975 and 1976 by M. Eronen.
Ref. Eronen (1979), Eronen and Hyvärinen (1981).

Hel-807 TSARSEJOKSKAIDI 980 ± 120
AD 970

7741.55 N, 475.935/27°E, 227 m a.s.l.
Appr. 60 outermost tree-rings.
Comment(ME): Subfossil pine (in water near shore of a lake) from pine tree limit zone.

Hel-808 LOHIKOSTE I 620 ± 110
AD 1330

7751.65 N, 475.30/27°, 115 m a.s.l.
Appr. 25 innermost tree-rings.
Comment(ME): Subfossil pine (on muddy shore of a lake) from pine limit.

Hel-821 LOHIKOSTE II 1190 ± 130
AD 760
7751.30 N, 474.95/27°E, 115 m a.s.l.
Appr. 10-40 tree-rings.
Comment(ME): Subfossil pine (on muddy shore of a lake) from pine limit.

Hel-822 LOHIKOSTE III 3900 ± 130
1950 BC
7751.5 N, 475.05/27°E, 115 m a.s.l.
Appr. 35 innermost tree-rings.
Comment(ME): Subfossil pine (on muddy shore of a lake) from pine limit.

Hel-833 AILIGASJÄRVI I 1730 ± 150
AD 220
7759.35 N, 502.90/27°E, 75 m a.s.l.
10 innermost tree-rings.
Comment(ME): Subfossil pine (in water near shore of a small lake) found beyond the present pine limit.

Hel-834 AILIGASJÄRVI II 2280 ± 130
330 BC
7759.35 N, 502.95/27°E, 78 m a.s.l.
Appr. 15 innermost tree-rings.
Comment(ME): Subfossil pine (in water near shore of a small lake) found beyond the present pine limit.

Hel-835 KEÄSSEMAHJOHKA I 4170 ± 190
2220 BC
7777.15 N, 525.00/27°E, 85 m a.s.l.
Appr. 30 innermost tree-rings.
Comment(ME): Subfossil pine (in a ditch on a mire) found beyond the present pine limit.

Hel-836 KEÄSSEMAHJOHKA II 3050 ± 170
1100 BC
7777.30 N, 524.85/27°E, 75 m a.s.l.
Appr. 35 innermost tree-rings.
Comment(ME): Subfossil pine (on shore of a small lake on a mire) found beyond the present pine limit.

Hel-837 PETSIKKO I 6930 ± 220
4980 BC
7708.80 N, 508.80/27°, 260 m a.s.l.
Appr. 70 innermost tree-rings.

Comment(ME): Subfossil pine (in shallow water in a small pool) found in outer part of the present pine tree limit zone.

Hel-912 NÄKKÄLÄ I, ENONTEKIÖ 3420 ± 150
1470 BC
7619.45 N, 486.35/24°E, 410 m a.s.l.
Comment(ME): Subfossil pine (in water near shore of a small lake) found in the outer part of the pine tree limit zone.

Hel-913 NÄKKÄLÄ II, ENONTEKIÖ 4320 ± 150
2370 BC
7619.00 N, 486.20/24°E, 410 m a.s.l.
Comment(ME): Subfossil pine (in a muddy depression) found in the outer part of the present pine tree limit zone.

Hel-914 NÄKKÄLÄ III, ENONTEKIÖ 5410 ± 170
3460 BC
7619.00 N, 486.20/24°E, 410 m a.s.l.
Comment(ME): Subfossil pine (in a muddy depression) found in the outer part of the present pine tree limit zone.

Hel-915 TSOHKKAJAVRI, ENONTEKIÖ 4180 ± 160
2230 BC
7619.50 N, 541.30/21°E, 505 m a.s.l.
Comment(ME): Subfossil pine (in water near shore of a small lake) found beyond the present pine limit.

Hel-916 HAUKIJÄRVET I, ENONTEKIÖ 5760 ± 180
3810 BC
7618.60 N, 540.95/21°E, 478 m a.s.l.
Comment(ME): Subfossil pine (in water near shore of a small lake) found beyond the present pine limit.

Hel-917 HAUKIJÄRVET II, ENONTEKIÖ 4990 ± 170
3040 BC
7618.05 N, 540.85/21°, 468 m a.s.l.
Comment(ME): Subfossil pine (in water near shore of a small lake) found beyond the present pine limit.

Hel-918 HAUKIJÄRVET III, ENONTEKIÖ 4620 ± 170
2670 BC
7618.00 N, 540.90/21°E, 468 m a.s.l.
Comment(ME): Subfossil pine (in water near shore of a small lake) found beyond the present pine limit.

Hel-919 PÄTTIKKÄ, ENONTEKIÖ 4160 ± 170
2210 BC
7612.40 N, 531.80/21°E, 385 m a.s.l.
Comment(ME): Subfossil pine (in water near shore of a small lake) found beyond the present pine limit.

Hel-1063 PIKKUVAARAN LOMPOLO I 5620 ± 120
3670 BC
7656.70 N, 497.15/21°, 560 m a.s.l.
Appr. 40 innermost tree-rings.
Comment(ME): Subfossil pine (in water near shore of a small lake) found beyond the present pine limit.

Hel-1064 PIKKUVAARAN LOMPOLO II 5140 ± 110
3190 BC
7656.70 N, 497.15/21°E, 560 m a.s.l.
Appr. 50 innermost tree-rings.
Comment(ME): Subfossil pine (in water near shore of a small lake) found beyond the present pine limit.

Hel-1065 AILAKKAVAARAN LOMPOLO I 5650 ± 110
3700 BC
7651.95 N, 497.95/21°E / 68°57'N, 20°57'E,
505 m a.s.l.
Appr. 130 innermost tree-rings.
Comment(ME): Subfossil pine (in water near shore of a small lake) found beyond the present pine limit.

Hel-1066 PEERAVAARAN LOMPOLO I 4640 ± 130
2690 BC
7645.75 N, 505.55/21°E, 495 m a.s.l.
Appr. 110 innermost tree-rings.
Comment(ME): Subfossil pine (in water near shore of a small lake) found beyond the present pine limit.

Hel-1067 VALLIJÄRVI I 4860 ± 130
2910 BC
7622.80 N, 523.55/21°E / 68°41'20"N, 21°34'45"E,
470 m a.s.l.
Appr. 125 innermost tree-rings.
Comment(ME): Subfossil pine (in water near shore of a small lake) found beyond the present pine limit.

Hel-1068 VALLIJÄRVI II 6600 ± 130
4650 BC
Appr. 150 tree-rings.
Comment(ME): Subfossil pine (in water near shore of a small lake) found beyond the present pine limit.

Hel-1192 AILAKKAVAARAN LOMPOLO II 3740 ± 100
1790 BC
Appr. 40 innermost tree-rings.
Comment(ME): Subfossil pine (in water near shore of a small lake) found beyond the present pine limit.

Hel-1193 AILAKKAVAARAN LOMPOLO III 4780 ± 110
2830 BC
Appr. 40 innermost tree-rings.
Comment(ME): Subfossil pine (in water near shore of a small lake) found beyond the present pine limit.

Hel-1194 AILAKKAVAARAN LOMPOLO IV 3760 ± 110
1810 BC
Appr. 70-130 outermost tree-rings.
Comment(ME): Subfossil pine (in water near shore of a small lake) found beyond the present pine limit.

Hel-1387 VALLIJÄRVI III 5610 ± 120
3660 BC
Comment(ME): Subfossil pine (in water near shore of a small lake) found beyond the present pine limit.

Hel-1388 VALLIJÄRVI IV 4830 ± 130
2880 BC
Comment(ME): Subfossil pine (in water near shore of a small lake) found beyond the present pine limit.

Hel-1389 VALLIJÄRVI V 6280 ± 130
4330 BC
Comment(ME): Subfossil pine (in water near shore of a small lake) found beyond the present pine limit.

TEL LACHISH SERIES, PALESTINA

Coll. 1975-1976 during an excavation under direction of D. Ussishkin. Subm. 1976-1977 by M. Louhivuori.
Ref. Ussishkin (1978).

Hel-809 3450 ± 120
1500 BC
Area P. Level VIII. A storeroom in Middle Bronze Palace: Locus 3106.
Charred wood from shelves or jar-stands.
Palace destroyed at end of Middle Bronze - 16th century BC.

Hel-810 3090 ± 120
1140 BC
Area P. Level VI. Late Bronze Temple: near staircase.
Charred wood (cedar) from beams used in structure.
Temple destroyed at end of Late Bronze ca. 1200 BC.

Hel-1025 No 10883 2830 ± 110
880 BC
Area G. Level II. A storeroom: Locus 4084.
Charred wood (cedar) from shelves or jar-stands.
The store destroyed in 588/6 BC.

Hel-1026 No 8943 2940 ± 110
990 BC
Area S. Level III. A courtyard of a house: Locus 3561.
Charred wood found near wall of structure.
The house destroyed in 701 BC.

Hel-1027 No 13543 2830 ± 150
880 BC
Area S. Level IV - Later Phase, an installation in Level IV house.
Charred wood found inside the installation.
Duration of level: ca. 900-750 BC.

Hel-1028 No 15388 3510 ± 120
1560 BC
Area P. Level VI. Late Bronze Temple: northern entrance.
Charred wood (cedar) from panels of doorway.
Temple destroyed at end of Late Bronze ca. 1200 BC.

Hel-811 ALAJOKI, LAPUA 2760 ± 170
810 BC
6301/2258
Bone of an elk.
Coll. 1902 by K.B. Miller. Subm. 1976 by A. Forstén.

Hel-812 JUOJÄRVI, OUTOKUMPU 9150 ± 280
7200 BC

62°40'N, 28°35'E, No 41063
Gyttja, 0.35-0.65 m depth.
Coll. with a piston corer and subm. 1975 by E. Sandberg.
Ref. Sandberg (1976).

Hel-813 AHVENJÄRVI, ALAVOJAKKALA, TORNIO 1640 ± 130
AD 310

Turfa Herbalea, 0.37-0.39 m depth.
Coll. 1973 and subm. 1976 by M. Hjelmroos.

RETULANSUO SERIES, HATTULA

61°10'N, 24°20'E, 81 m a.s.l.
Coll. 1975 and subm. 1976 by I. Vuorela.
Ref. Núñez and Vuorela (1979).

Hel-814 160 ± 90
AD 1790

Sphagnum peat, 0.17-0.19 m depth.
Comment(IV): The steep rise of the Cerealia curve in association with distinct reactions of the herbs and tree species and the loss-on-ignition values.

Hel-815 modern

Sphagnum peat, 0.09-0.11 m depth.
Comment(IV): The steep rise of the Calluna curve. The sample may have been contaminated by thin Calluna roots.

Hel-816 260 ± 100
AD 1690

Sphagnum peat, 0.40-0.42 m depth.
Comment(IV): The stabilization of the Cerealia curve.

KAINUUNKYLÄ SERIES, KANNALA, YLITORNIO

Coll. 1975 and subm. 1976 by P. Koivunen.

Hel-817 No 1 720 ± 130
AD 1230

7347.35 N, 489.61 E (Área A I, 1 10)
Charred wood from a hearth, 0.53 m depth.

Hel-818 No 4 900 ± 130
AD 1050
7347.35 N, 489.61 E (A I, i 14)
Humified wood, 0.79 m depth.

Hel-819 No 6 830 ± 100
AD 1120
7347.35 N, 489.61 E (A I, h 12)
Charred wood, 0.73 m depth.

Hel-820 No 9 260 ± 120
AD 1690
7347.52 N, 489.45 E (B II, e 43)
Humified wood, 0.86 m depth.

Hel-821 - 822 SUBFOSSIL PINE SERIES Hel-807

VARRASSUO SERIES, HOLLOLA

60°59'N, 25°29'E, 147 m a.s.l.
Coll. and subm. 1975 and 1976 by P. Alhonen, J. Donner and M. Eronen.
Comment(JD): The series of samples from the raised bog, taken with a piston sampler, were used for the determination of the rate of peat growth and for dating the percentage and pollen influx diagrams for a comparison with the nearby Työtjärvi lake sediments. Donner et al. (1978). See Työtjärvi series Hel-674.

Hel-823 3380 ± 160
1430 BC
Peat, 1.20-1.30 m depth.

Hel-824 5140 ± 140
3190 BC
Peat, 2.30-2.40 m depth.

Hel-825 8580 ± 170
6630 BC
Peat, 3.25-3.35 m depth. $\delta^{13}C = -25.7$ ‰

Hel-826 9010 ± 160
7060 BC
Peat, 4.10-4.18 m depth. $\delta^{13}C = -27.4$ ‰

Hel-838	1400 ± 100 AD 550
Peat, 0.50-0.60 m depth.	$\delta^{13}C$=-28.7 ‰
Hel-839	3160 ± 150 1210 BC
Peat, 1.50-1.60 m depth.	$\delta^{13}C$=-27.4 ‰
Hel-840	5900 ± 140 3950 BC
Peat, 2.50-2.60 m depth.	$\delta^{13}C$=-28.2 ‰
Hel-841	8020 ± 170 6070 BC
Peat, 3.50-3.60 m depth.	$\delta^{13}C$=-31.0 ‰
Hel-846	3650 ± 120 1700 BC
Peat, 1.10-1.20 m depth.	$\delta^{13}C$=-30.5 ‰
Hel-863	4210 ± 130 2260 BC
Peat, 1.90-2.00 m depth.	
Hel-864	7850 ± 160 5900 BC
Peat, 2.90-3.00 m depth.	$\delta^{13}C$=-25.1 ‰
Hel-865	9010 ± 180 7060 BC
Peat, 3.70-3.80 m depth.	$\delta^{13}C$=-22.3 ‰
Hel-866	9160 ± 190 7210 BC
Peat, 3.90-4.00 m depth.	
Hel-908	2560 ± 110 610 BC
Peat, 0.90-1.00 m depth.	$\delta^{13}C$=-25.8 ‰
Hel-909	4340 ± 160 2390 BC
Peat, 2.10-2.20 m depth.	$\delta^{13}C$=-22.4 ‰
Hel-910	6020 ± 140 4070 BC
Peat, 2.70-2.80 m depth.	$\delta^{13}C$=-24.2 ‰

Hel-911 7980 ± 200
6030 BC
Peat, 3.10-3.20 m depth. $\delta^{13}C$=-24.3 ‰

Hel-923 2480 ± 110
530 BC
Peat, 0.70-0.80 m depth. $\delta^{13}C$=-24.1 ‰

Hel-924 3690 ± 130
1740 BC
Peat, 1.70-1.80 m depth.

Hel-925 8560 ± 170
6610 BC
Peat, 3.60-3.70 m depth. $\delta^{13}C$=-22.0 ‰

Hel-926 2920 ± 120
970 BC
Peat, 1.00-1.10 m depth. $\delta^{13}C$=-23.2 ‰

Hel-927 4000 ± 120
2050 BC
Peat, 1.60-1.70 m depth. $\delta^{13}C$=-23.5 ‰

Hel-928 8660 ± 170
6710 BC
Peat, 3.40-3.50 m depth. $\delta^{13}C$=-22.1 ‰

Hel-827 - 830 TYÖTJÄRVI SERIES Hel-674

KUKKARKOSKI, LIETO

Coll. 1975 by M. Torvinen and M. Núñez.
Subm. 1976 by T. Edgren.

Hel-831 4320 ± 170
2370 BC
19727:163
Charcoal, 0.35 m depth.

Hel-832 4890 ± 150
2940 BC
196/C/17
Charcoal, 1.01 m depth.

Hel-833 - 837 SUBFOSSIL PINE SERIES Hel-807

Hel-838 - 841 VARRASSUO SERIES Hel-823

Hel-842 - 845 SONKAJA SERIES Hel-788

Hel-846 VARRASSUO SERIES Hel-823

Hel-847 - 850 TYÖTJÄRVI SERIES Hel-674

LAIKIPIA SERIES, KENYA

0°23'N, 36°45'E
Coll. and subm. 1976 by A. Siiriäinen.
General comment for Hel-851, 871 and 852 (AS): Dates the early Late Stone Age pastoral occupation in the Eastern Highlands of Kenya (Siiriäinen 1977).

Hel-851 KFR-A5/Burial 1 2490 ± 110
540 BC
Bone, 0.80 m depth.

Hel-852 KFR-A5/Burial 2 2320 ± 160
370 BC
Bone

Hel-853 KFR-C4 760 ± 90
AD 1190
Bone, 0.40 m depth.
Comment(AS): A cairn burial in Central Kenya showing the latest possible date of the adaption of the burial practice still in use among the Nilotic and Cushitic tribes in East Africa.

Hel-871 KFR-A5/Burial 1b 2830 ± 120
880 BC
Charcoal, 0.70-0.80 m depth.

OULANKA SERIES, NORTH-EASTERN FINLAND

Various methods (piston corer, digging, diving) have been used in collecting organic material (buried trunks, submerged peat etc.) in solving the deglaciation, fluvial processes and palaeohydrological questions in the Oulanka valley.
Coll. and subm. 1976 and 1979 by L. Koutaniemi.

For ref. Hel-854 see Koutaniemi (1979a, 1981b), Hel-855, 857, 929 Koutaniemi (1979a,b), Hel-1253, 1254, 1280 Koutaniemi (1981a), and Hel-988, 1252, 1439, 1440 Koutaniemi (1982).

Hel-854 VIHVILÄLAMPI, KUUSAMO 8920 ± 240 6970 BC

7355.44 N, 484.92 E
Mud, 8.52-8.62 m depth.

Hel-855 KOURULAMPI, KIUTAKÖNGÄS, KUUSAMO 10350 ± 290 8400 BC

7364.46 N, 468.80 E
Detritus gyttja, 7.83-7.88 m depth.
Comment(LK): Obvious hard-water effect.

Hel-857 KOTALAMPI, LIIKASENVAARA 8360 ± 240 6410 BC

7370.46 N, 473.42 E
Detritus gyttja, 2.08-2.13 m depth.

Hel-929 OULANKA, KUUSAMO 2300 ± 160 350 BC

7360.67 N, 478.03 E
Humified peat from the bottom of an ancient channel of the river Oulankajoki, 1.175-1.200 m depth.

Hel-935 VIHVILÄLAMPI, KUUSAMO 8090 ± 250 6140 BC

7355.44 N, 484.92 E
Humified peat, 8.31-8.41 m depth.

Hel-936 KOURULAMPI, KIUTAKÖNGÄS, KUUSAMO 8240 ± 230 6290 BC

7364.46 N, 468.80 E
Detritus gyttja, 7.65-7.70 m depth.

Hel-937 KOTALAMPI, LIIKASENVAARA, KUUSAMO 8930 ± 170 6980 BC

7370.46 N, 473.42 E
Detritus gyttja, 1.88-1.98 m depth.

Hel-988 OULANKA, KUUSAMO 9500 ± 220 7550 BC

66°25'N, 29°31'E
Plant remains from bottom of the river Oulankajoki.

Hel-1252 SIIKAUOPAJA, OULANKA, KUUSAMO 8600 ± 150
6650 BC
7357.60 N, 481.52 E
Plant remains, about 3 m depth.

Hel-1253 SIIKAUOPAJA, OULANKA, KUUSAMO 1620 ± 160
AD 330
7359.76 N, 478.70 E
Deposited plant remains, 1.96-2.01 m depth.

Hel-1254 SIIKAUOPAJA, OULANKA, KUUSAMO 1530 ± 140
AD 420
Deposited plant remains, 1.52-1.57 m depth.

Hel-1278 JÄKÄLÄMUTKA, OULANKA, KUUSAMO modern
7355.46 N, 483.29 E
Wood, about 0.5 m depth.

Hel-1279 JÄKÄLÄMUTKA, OULANKA, KUUSAMO modern
Wood, about 0.5 m depth.

Hel-1280 RAJAVYÖHYKE, OULANKA, KUUSAMO 2660 ± 110
710 BC
7354.19 N, 484.79 E
Wood, 4.85 m depth.

Hel-1304 SIIKAUOPAJA, OULANKA, KUUSAMO modern
7356.85 N, 481.66 E
Wood, 1 m depth.

Hel-1305 SIIKAUOPAJA, OULANKA, KUUSAMO modern
Wood, 1 m depth.

Hel-1306 SIIKAUOPAJA, OULANKA, KUUSAMO 240 ± 90
AD 1710
Wood, about 2 m depth.

Hel-1307 SIIKAUOPAJA, OULANKA, KUUSAMO modern
7357.00 N, 481.60 E
Wood, 0.80 m depth.

Hel-1308 NURMISAARI 290 ± 110
AD 1660
7362.04 N, 475.49 E
Wood, 1.4 m depth.

Hel-1309 NURMISAARI 310 ± 90
AD 1640
Wood, 1.5 m depth.

Hel-856 RUUNAPÄÄNNIEMI, SULKAVA 1070 ± 90
AD 880
61°46'N, 28°24'E, 86 m a.s.l.
Charcoal, 0.10 m depth.
Coll. 1975 by C. Carpelan and H. Jungner.
Comment(CC): Charcoal from the podzol representing some ancient forest fire at a Stone Age dwelling site. The sample was collected in connection to thermoluminescent dating.

Hel-857 OULANKA SERIES Hel-854

Hel-858 PUISTOLA modern
Bone found in gravel.
Subm. 1976 by B. Kurtén.
Comment: The date excludes the possibility that the bone is from a bison.

LAUHANVUORI SERIES

Coll. with a piston corer and subm. 1976-1980 by R. Salomaa.
General comment(RS): Clay/silty mud, mud and peat samples from basins of various altitudes in the Lauhavuori area, southern Pohjanmaa, western Finland. The samples date the post-glacial shore-line displacement history, forest history and paludification of the area (Salomaa 1982, Salomaa and Alhonen 1983).

Hel-859 SPITAALIJÄRVENSUO, ISOJOKI 6230 ± 160
4280 BC
6902.2 N, 248.1 E / 62°08'N, 22°10'E, about 176 m a.s.l.
Sphagnum peat, 1.50-1.45 m depth.
Comment(RS): The beginning of paludification of dry land.

Hel-860 LIKOLAMMINSUO, KAUHAJOKI 6840 ± 160
4890 BC
6908.4 N, 249.1 E / 62°12'N, 22°11'E, about 180 m a.s.l.
Carex-Sphagnum peat, 2.30-2.25 m depth.
Comment(RS): The beginning of paludification of dry land.

Hel-861 KÄLMINKEIDAS, ISOJOKI 7490 ± 170
5540 BC
6894.8 N, 244.7 E / 62°04'N, 22°06'E, about 115 m a.s.l.
Sphagnum peat, 3.32-3.25 m depth.
Comment(RS): The beginning of paludification of dry land.

Hel-862 KYLMÄNKULLAANKEIDAS, ISOJOKI 4920 ± 140
2970 BC
6905.5 N, 246.2 E / 62°10'N, 22°08'E, about 154 m a.s.l.
Sphagnum peat, 0.50-0.43 m depth.
Comment(RS): The beginning of paludification of dry land.

Hel-1171 HAUKILAMMI, ISOJOKI 8230 ± 160
6280 BC
62°03'N, 22°05'E, about 107 m a.s.l.
Claygyttja and gyttja, 1.96-1.90 m depth (2x).
Comment(RS): Isolation of the basin from the Ancylus Lake. The minimum age of immigration of Alnus to the area.

Hel-1172 SPITAALIJÄRVENSUO, ISOJOKI 3730 ± 150
1780 BC
62°08'N, 22°10'E, about 176 m a.s.l.
Carex-Sphagnum peat, 1.20-1.15 m depth.
Comment(RS): Immigration of Picea (Pc^+) to the area.

Hel-1173 LIKOLAMMENSUO, KAUHAJOKI 3720 ± 140
1770 BC
62°12'N, 22°11'E, about 180 m a.s.l.
Sphagnum peat, 1.30-1.20 m depth.
Comment(RS): Immigration of Picea (Pc^+) to the area.

Hel-1174 LIKOLAMMENSUO, KAUHAJOKI 3900 ± 130
1950 BC
Sphagnum peat, 1.80-1.70 m depth.
Comment(RS): The beginning of Picea curve (Pc^o).

Hel-1175 KODESJÄRVI, ISOJOKI 8010 ± 160
6060 BC
62°03'N, 22°04'E, about 94 m a.s.l.
Claygyttja, 3.26-3.13 m depth.
Comment(RS): Isolation of the basin from the Ancylus Lake.

Hel-1291 KAUHAJÄRVI, KAUHAJOKI 7960 ± 170
6010 BC
62°12'N, 22°18'E, about 144 m a.s.l.
Silty gyttja, 3.85-3.70 m depth.
Comment(RS): Just upon the spread of Alnus (A^+). The

immigration of Alnus to the area took place between this date and Hel-1292.

Hel-1292 KAUHAJÄRVI, KAUHAJOKI 8510 ± 190
6560 BC
Silty gyttja, 3.95-3.85 m depth.
Comment(RS): Isolation of the basin from the Ancylus Lake. Just below the immigration of Alnus (A^+) to the area.

Hel-1293 JUURAKKOJÄRVI, KAUHAJOKI 8920 ± 180
6970 BC
62°15'N, 22°27'E, 167 m a.s.l.
Gyttja, 4.60-4.50 m depth.
Comment(RS): Immigration of Alnus (A^+) to the area. The age is obviously some 500 years too old. See Hel-1291, 1292, 1364. However, the other date from the same core 30 cm lower seem to be correct. Sedimentation seem to be continuous without hiatus points.

Hel-1294 JUURAKKOJÄRVI, KAUHAJOKI 9070 ± 190
7120 BC
Gyttjasilt and silty gyttja, 4.90-4.75 m depth.
Comment(RS): Isolation of the basin from the Ancylus Lake. The minimum age of immigration of Pinus to the area.

Hel-1364 SPITAALIJÄRVI, ISOJOKI 8250 ± 190
6300 BC
62°08'N, 22°10'E, about 175 m a.s.l.
Muddy dy, 2.525-2.450 m depth.
Comment(RS): Immigration of Alnus (A^+) to the area.

Hel-1365 SPITAALIJÄRVI, ISOJOKI 9020 ± 130
7070 BC
Silty gyttja, 2.70-2.60 m depth.
Comment(RS): Isolation of the basin from the Ancylus Lake. The isolation age is probably somewhat too young because of a small hiatus in stratigraphy. The minimum age of immigration of Pinus to the area.

Hel-1366 PIENI HAAPAJÄRVI, SIIKAINEN 6410 ± 150
4460 BC
61°58'N, 21°59'E, about 81 m a.s.l.
Gyttja, 2.62-2.55 m depth.
Comment(RS): The postisolation age, just after the isolation.

Hel-1367 PIENI HAAPAJÄRVI, SIIKAINEN 6760 ± 150
4810 BC

Clay-gyttja, 2.70-2.62 m depth.
Comment(RS): Isolation of the basin from the Litorina Sea. The basin is situated very near the highest Litorina shore (clypeus-limit).

Hel-863 - 866 VARRASSUO SERIES Hel-823

Hel-867 KMD/XI(2), LOWASERA, MARSABIT, KENYA 9420 ± 200
7470 BC

02°56'N, 36°43'E
Coll. and subm. 1976 by A. Siiriäinen.
Comment(AS): Shells from a beach deposit of Lake Turkana (Rudolf) ca. 74 m above present level (Phillipson 1977).

JÖNSAS SERIES, VANTAA

60°16'N, 24°51'E / 6683.66 N, 547.36 E, 32-35 m a.s.l.
Coll. 1972-1973 by P. Purhonen and 1976-1977 by E. Linturi and S. Ojonen. Subm. 1976 and 1977 by T. Edgren and A. Siiriäinen.
General comment: For Hel-868, 869, 892-896, 963-965, 985-987, 1008, 1044-1050:The dating results refer to the epineolithic habitation at the site. For Hel-1006: The dating result refers to the Corded Ware Culture period at the site. For Hel-1007:The dating result refers to the mesolithic habitation at the site. For Hel-962: AD 930 is younger than expected, samples taken in the same place lower down gave the results refering to the epineolithic period (Purhonen 1980).

Hel-868 JÖNSAS 1975-02 2300 ± 110
350 BC

Charcoal from a hearth.

Hel-869 JÖNSAS 1975-03 2470 ± 110
520 BC

Charcoal from a hearth.

Hel-892 JÖNSAS 1976-01 2250 ± 110
300 BC

Charcoal from a hearth.

Hel-893 JÖNSAS 1976-03 2340 ± 110
390 BC

Charcoal from a hearth.

Hel-894 JÖNSAS 1976-06 2110 ± 110
160 BC
Charcoal from a hearth, 0.65-0.75 m depth.

Hel-895 JÖNSAS 1976-07 2110 ± 100
160 BC
Charcoal from a hearth, 0.77-1.02 m depth.

Hel-896 JÖNSAS 1976-08 2080 ± 110
130 BC
Charcoal from a hearth, 1.15 m depth.

Hel-962 JÖNSAS 1976-09 1020 ± 120
AD 930
Charcoal from a hearth, 0.04-0.15 m depth.

Hel-963 JÖNSAS 1976-10 2420 ± 130
470 BC
Charcoal from a hearth, 0.34-0.40 m depth.

Hel-964 JÖNSAS 1976-11 2320 ± 100
370 BC
Charcoal from a hearth, 0.85-0.90 m depth.

Hel-965 JÖNSAS 1976-12 2280 ± 110
330 BC
Charcoal from a hearth, 0.85-0.90 m depth.

Hel-985 JÖNSAS 1972-01 2860 ± 110
910 BC
Charcoal from a hearth, 0.60 m depth.

Hel-986 JÖNSAS 1972-02 2770 ± 110
820 BC
Charcoal from a hearth, 0.60-0.70 m depth.

Hel-987 JÖNSAS 1973-01 2920 ± 120
970 BC
Charcoal from a hearth, 0.50 m depth.

Hel-1006 JÖNSAS 1977-01 4520 ± 130
2570 BC
Charcoal, 0.68-0.78 m depth.

Hel-1007 JÖNSAS 1977-02 7420 ± 170
5470 BC
Charcoal from a hearth, 0.30 m depth.

Hel-1008 JÖNSAS 1977-03 2580 ± 120
630 BC
Charcoal from a hearth, 0.90-1.10 m depth.

Hel-1044 JÖNSAS 736736 2460 ± 100
510 BC
Charcoal from a hearth, 0.79 m depth.

Hel-1045 JÖNSAS 736736 2730 ± 100
780 BC
Charcoal from a hearth, 0.91 m depth.

Hel-1046 JÖNSAS 736736 2550 ± 130
600 BC
Charcoal from a hearth, 0.83 m depth.

Hel-1047 JÖNSAS 732732 2770 ± 100
820 BC
Charcoal from a hearth, about 0.79 m depth.

Hel-1048 JÖNSAS 728734 2690 ± 130
740 BC
Charcoal from a hearth, 0.56 m depth.

Hel-1049 JÖNSAS 728736-728734 2690 ± 100
740 BC
Charcoal from a hearth, 0.96 m depth.

Hel-1050 JÖNSAS 728732 2690 ± 100
740 BC
Charcoal from a hearth, 1.23 m depth.

Hel-1201 JÖNSAS 2170 ± 110
220 BC
766696
Charcoal, sample number 4.
Subm. 1978 by M. Aalto.
Comment(MA): This is an old dwelling site. There was some grains of cereals in this sample. The ceramic evidences, however, indicate older, Stone Age culture. There may be mixing of materials of Early Roman Age and Stone Age cultures.

Hel-1202 JÖNSAS 330 ± 140
AD 1620
766696
Charcoal, sample number 6 (bottom).

Hel-870 PAATSJOEN LUUSUA Hel-798

Hel-1044 JÖNSAS 736736 2460 ± 100
510 BC
Charcoal from a hearth, 0.79 m depth.

Hel-1045 JÖNSAS 736736 2730 ± 100
780 BC
Charcoal from a hearth, 0.91 m depth.

Hel-1046 JÖNSAS 736736 2550 ± 130
600 BC
Charcoal from a hearth, 0.83 m depth.

Hel-1047 JÖNSAS 732732 2770 ± 100
820 BC
Charcoal from a hearth, about 0.79 m depth.

Hel-1048 JÖNSAS 728734 2690 ± 130
740 BC
Charcoal from a hearth, 0.56 m depth.

Hel-1049 JÖNSAS 728736-728734 2690 ± 100
740 BC
Charcoal from a hearth, 0.96 m depth.

Hel-1050 JÖNSAS 728732 2690 ± 100
740 BC
Charcoal from a hearth, 1.23 m depth.

Hel-1201 JÖNSAS 2170 ± 110
220 BC
766696
Charcoal, sample number 4.
Subm. 1978 by M. Aalto.
Comment(MA): This is an old dwelling site. There was some grains of cereals in this sample. The ceramic evidences, however, indicate older, Stone Age culture. There may be mixing of materials of Early Roman Age and Stone Age cultures.

Hel-1202 JÖNSAS 330 ± 140
AD 1620
766696
Charcoal, sample number 6 (bottom).

Hel-870 PAATSJOEN LUUSUA Hel-798

Hel-871 LAIKIPIA SERIES Hel-851

Hel-872 IHANANIEMI, SUURIKYLÄ, SYSMÄ 1580 ± 130
AD 370
61°30'N, 25°40'E
Charcoal, 0.30 m depth.
Coll. 1975 by K. Anttila. Subm. 1976 by A. Siiriäinen.
Comment(AS): An Iron Age burial/offering cairn with fragments of burnt bone (incl. human) and potsherds.

ÄRJENLAMPI SERIES, POSIO

7329.5 N, 548.5 E / 66°04'N, 28°04'E, 247.2 m a.s.l.
Coll. and subm. 1976 by O. Heikkinen.
Ref. Heikkinen and Kurimo (1977).

Hel-873 6670 ± 190
4720 BC
Coarse gyttja, 2.18-2.22 m depth.
Comment(OH): Above the contact corresponding to isolation from Lake Kitka.

Hel-874 6540 ± 130
4590 BC
Gyttja, 2.22-2.26 m depth.
Comment(OH): Below the contact corresponding to isolation from Lake Kitka.

Hel-875 KHORDLORTOQ, GREENLAND 880 ± 90
AD 1070
Charcoal, 0.15 m depth (ruingruppe Ø 38).
Coll. 1976 by T. Edgren.
Comment(TE): The sample comes from a kitchen-midden at the ruincomplex Ø 38 in SW Greenland documentated by the Finnish research group of the Scandinavian expedition in 1976. The result is a little older than expected since the ruins of the Khordlortoq-valley are dated to the 13thand 14th century.

PASKALAMPI SERIES, POSIO

7331.0 N, 548.5 E / 66°04'N, 28°04'E, 244.6 m a.s.l.
Coll. and subm. 1976 by O. Heikkinen.
Ref. Heikkinen and Kurimo (1977).

Hel-876 6190 ± 170
4240 BC
Coarse gyttja, 2.44-2.48 m depth.
Comment(OH): Above the contact corresponding to isolation from Lake Kitka.

Hel-877 6350 ± 200
4400 BC
Gyttja, 2.48-2.52 m depth.
Comment(OH): Below the contact corresponding to isolation from Lake Kitka.

Hel-878 4840 ± 130
2890 BC
Gyttja, 2.20-2.24 m depth.
Comment(OH): Appearance of spruce.

AALAND SERIES

Samples collected with a piston corer 1975 and subm. 1976 by G. Glückert.

Hel-879 BREDMOSSEN, GETA 6090 ± 190
4140 BC
60°23'30"N, 19°50'E
Sand and gyttja, 1.80 m depth.
Comment(GG): Isolation from the Baltic at the end of the Litorina transgression.

Hel-880 SIGNILDSKRUBBA, GETA 4010 ± 170
2060 BC
60°27'30"N, 19°53'E
Gyttja, 2.85 m depth.
Comment(GG): Isolation from the Baltic (Litorina Sea).

Hel-881 TJÄRNBERGSMOSSEN, FAGERVIK, SALTVIK 3890 ± 130
1940 BC
60°20'N, 20°06'E
Silty gyttja, 4.60 m depth.
Comment(GG): Isolation of the basin from the Baltic, age of shoreline Litorina IV.

Hel-882 TJÄRNBERGSMOSSEN, FAGERVIK, SALTVIK 2020 ± 130
70 BC
Gyttja, 3.75-3.80 m depth.
Comment(GG): General spread of Picea in NE Aaland.

Hel-897 VÄSTERKLEVSBERGSMOSSEN, SALTVIK 5160 ± 180
3210 BC
60°20'N, 20°05'E
Gyttja, 1.00 m depth.
Comment(GG): Isolation of the basin from the Baltic, the age of shoreline Litorina II in Aaland.

Hel-898 ÖDKARBYMOSSEN, SALTVIK 3890 ± 120
1940 BC
60°20'N, 19°50'55"E
Gyttja, 2.10 m depth.
Comment(GG): Isolation of the basin from the Baltic. Age of shoreline Litorina III in Aaland.

Hel-899 BLÄCKSMYRA, SUND 2910 ± 140
960 BC
60°13'N, 20°05'E
Gyttja, 1.30 m depth.
Comment(GG): Isolation of the basin from the Baltic (Litorina Sea).

Hel-900 SLÄTTMOSSEN, KATTBY, HAMMARLAND 3570 ± 170
1620 BC
60°13'N, 19°43'E
Gyttja, 2.50 m depth.
Comment(GG): Isolation of the basin from the Baltic.

Hel-920 STÄNGSLEMOSSEN, DRAKENBÖLE, HAMMARLAND
1840 ± 110
AD 110
60°12'N, 19°45'E
Gyttja, 1.35 m depth.
Comment(GG): Isolation from the Baltic. Age of shoreline Litorina VII. Invasion of Picea in SW Aaland.

Hel-921 STORMOSSEN, DJURVIK, JOMALA 1820 ± 120
AD 130
60°08'N, 19°44'E
Sand and gyttja, 1.60 m depth.
Comment(GG): Isolation from the Baltic and invasion of Picea in SW Aaland.

Hel-922 STORMOSSARNA, FLAKA, LEMLAND 2190 ± 110
240 BC
60°02'30"N, 20°09'E
Gyttja, 1.10 m depth.
Comment(GG): Isolation of the basin from the Baltic.

AHMASJÄRVI SERIES, UTAJÄRVI

64°39'N, 26°27'E, 98.5 m a.s.l.
Coll. with a Livingstone sampler and subm. 1976 by C. Reynaud.
Ref. Reynaud and Hjelmroos (1980).

Hel-883 — 6930 ± 230 / 4980 BC
Gyttja, 2.10-2.18 m depth below sediment surface.
Comment(CR): Grazing phase.

Hel-884 — 4740 ± 150 / 2790 BC
Gyttja, 1.16-1.23 m depth.
Comment(CR): Spruce immigration.

Hel-885 — 4120 ± 150 / 2170 BC
Gyttja, 0.83-0.90 m depth.
Comment(CR): Starting point of the "Cerealia" curve.

Hel-946 — 5540 ± 190 / 3590 BC
Gyttja, 1.40-1.48 m depth.
Comment(CR): Grazing phase.

Hel-947 — 3240 ± 180 / 1290 BC
Gyttja, 0.41-0.46 m depth.

JÄRVELÄNJÄRVI SERIES, VIHANTI

64°33'N, 24°47'E, 100 m a.s.l.
Coll. with a Livingstone sampler and subm. 1976 by C. Reynaud.
Ref. Reynaud and Hjelmroos (1980).

Hel-886 — 5640 ± 190 / 3690 BC
Gyttja, 1.69-1.72 m depth.
Comment(CR): First pollen of Plantago lanceolata.

Hel-887 — 4830 ± 170 / 2880 BC
Gyttja, 0.74-0.84 m depth.
Comment(CR): Spruce immigration.

Hel-948 — 5270 ± 170 / 3320 BC.
Gyttja, 1.25-1.30 m depth.

Comment(CR): Grazing phase.

Hel-949 — 5250 ± 180 / 3300 BC

Gyttja, 1.06-1.16 m depth.

Hel-950 — 5440 ± 180 / 3490 BC

Gyttja, 1.56-1.60 m depth.
Comment(CR): Grazing phase.

Hel-951 — 4120 ± 190 / 2170 BC

Gyttja, 0.56-0.64 m depth.
Comment(CR): Spruce maximum.

Hel-960 — 5850 ± 190 / 3900 BC

Gyttja, 1.85-1.89 m depth.
Comment(CR): Forest immigration.

KIIMAJÄNKÄ SERIES, KEMI

65°59'N, 24°38'E, 40 m a.s.l.
Coll. with a Russian corer and subm. 1976 by C. Reynaud.
Ref. Reynaud and Hjelmroos (1980).

Hel-888 — 2590 ± 140 / 640 BC

Peat, 1.36-1.32 m depth.
Comment(CR): Beginning of the forest clearance.

Hel-955 — 1630 ± 130 / AD 320

Peat, 0.51-0.57 m depth.
Comment(CR): Pollen of flax.

Hel-956 — 1260 ± 140 / AD 690

Peat, 0.38-0.40 m depth.
Comment(CR): Decrease of spruce.

Hel-961 — 2180 ± 150 / 230 BC

Peat, 0.75-0.79 m depth.
Comment(CR): Clearance phase maximum.

Hel-889 OULANKA 160 ± 90
AD 1790
Wood

Hel-890 VÖYRI 195 ± 80
AD 1755
The outdoor museum of Vörå (Vöyri), Ostrobothnia.
Coll. 1972 by L-E. Förars.
Subm. 1976 by B. Lönnqvist.
Comment(BL): Coffin of mediaeval type (15th century). Supposed to be remnant from the end of the 15th century (the old Church of Vörå), but will presumably have been made in the 18th century with pattern from an older coffin (long ago perished) in mediaeval style from which the iron escutcheons have been removed to the sample examined.

Hel-891 KOKKOJÄRVI, MANAMANSALO, VAALA 140 ± 110
AD 1810
64°23'N, 27°03'E, 111-113 m a.s.l.
Juniper wood, 13-15 m depth.
Coll. 1976 by P. Vuolteenaho.
Subm. 1976 by J. Alestalo.

Hel-892 - 896 JÖNSAS SERIES Hel-868

Hel-897 - 900 AALAND SERIES Hel-879

DISKO SERIES, WEST GREENLAND

Coll. and subm. 1976 by J. Donner.
Comment(JD): Dates of shells and one date of peat were used to date Holocene land/sea level changes and deglaciation especially in Disko (Donner 1978).

Hel-901 NORDFJORD 7980 ± 150
6030 BC
69°56'N, 54°17'W, 11.2 m above present Balanus line. $\delta^{13}C = +0.8$ ‰
Mya truncata (GGU no 152801).
Shells from upper part of marine silty sand and gravel underneath shingle in gliff section of terrace at 21.4 m.

Hel-902 UNGUSSIVIK, NIPISAT 4780 ± 120
2830 BC
69°27'N, 54°14'W, 8.7 m above present Balanus line. $\delta^{13}C$=+1.4 ‰
Mytilus edulis (GGU no 152802).
Shells from marine sand in 3 m deep stream section with 1.5 m eolian sand without shells at surface.

Hel-903 QIVITUT 8020 ± 170
6070 BC
69°26'N, 53°42'W, 6.8 m above present Balanus line. $\delta^{13}C$=+1.8 ‰
Mya truncata (GGU no 152803).
Shells from upper 0.5 m of stony clay on slope by stream W of peninsula.

Hel-904 QIVITUT 6760 ± 150
4810 BC
69°27'N, 53°40'W, 18.7 m above present Balanus line. $\delta^{13}C$=+2.1 ‰
Mya truncata (GGU no 152804).
Shells from upper 0.5 m of sand and gravel of ridgelike accumulation between two gneiss outcrops on N end of peninsula.

Hel-905 IKINEQ 6840 ± 140
4890 BC
69°29'N, 53°38'W, 3.3 m above present Balanus line. $\delta^{13}C$=+1.5 ‰
Mya truncata (GGU no 152805).
Shells from upper 0.5 m of stony gravel of small ridge between gneiss outcrops on S point of peninsula.

Hel-906 IKINEQ 8250 ± 170
6300 BC
69°29'N, 53°38'W, 40.3 m above present Balanus line. $\delta^{13}C$=+2.0 ‰
Mya truncata (GGU 152806).
Shells from upper 0.5 m of stony gravel of small ridge between gneiss outcrops N of peninsula.

Hel-907 IKINEQ 8270 ± 170
6320 BC
69°29'N, 53°38'W, 21.6 m above present Balanus line. $\delta^{13}C$=+4.5 ‰.

Mya truncata (GGU no 152807).
Shells from upper 0.5 m of stony gravel of small ridge between gneiss outcrops N of peninsula (close to site above).

Hel-945 IKINEQ 970 ± 110
AD 980
69°29'N, 53°38'W, 0.3 m above present Balanus line.
Dark peat, 0.2-0.3 m depth on stony beach sand and underneath 0.2 m sandy peat on present beach, on S point of peninsula (near sample Hel-905).

Hel-908 - 911 VARRASSUO SERIES Hel-823

Hel-912 - 919 SUBFOSSIL PINE SERIES Hel-807

Hel-920 - 922 AALAND SERIES Hel-879

Hel-923 - 928 VARRASSUO SERIES Hel-823

Hel-929 OULANKA SERIES Hel-854

Hel-930 KUKONMYLLY, RISTIINA 680 ± 130
AD 1270
61°26'N, 27°33'E
Wood from a trunk below water level.
Coll. and subm. 1976 by V. Lappalainen.

HÄNNISENLAMPI SERIES, KITEE

62°05'N, 30°12'E
Coll. 1975 by J. Vuorinen and P. Huttunen with Russian corer.
Subm. 1976 by J. Vuorinen.

Hel-931 1270 ± 140
AD 680
Mud, 1.32-1.37 m depth.
Comment(JV): About 600 years older than by varve counts.

Hel-932 1530 ± 140
AD 420
Mud, 1.43-1.48 m depth.
Comment(JV): About 600 years older than by varve counts.

Hel-939 2220 ± 130
270 BC
Gyttja, 0.64-0.69 m depth.
Comment(JV): Cultural sediment, radiocarbon age is about 2000 years older than that obtained from varve counts.

Hel-940 3230 ± 160
1280 BC
Mud, 2.17-2.23 m depth.
Comment(JV): About 350 years older than by varve counts.

Hel-941 5870 ± 150
3920 BC
Mud, 3.02-3.08 m depth.
Comment(JV): About 600 years older than by varve counts.

HIILISUO SERIES, KARELIAN ASSR, USSR

About 61°45'N, 34°20'E, 147 m a.s.l.
Gyttja and peat samples from various levels of the bottom parts of Hiilisuo (east-central part of it, to the north of a little tarn), Prionega distr., SE of Petrozavodsk.
Coll. 1974 by Y. Vasari, together with N.I. Pyavchenko and other members of the Institute of Biology, Karelian Branch of USSR Academy of Sciences, using a Russian peat sampler.
The samples were composite of equivalent sections in several cores . Subm. 1976 by Y. Vasari.
General comment(YV): The datings do not fit mutually in chronological order. Together they prove convincingly, however, the Early Boreal age of the bottom part of Hiilisuo on this place. Pollenanalytically, the basal peat could have been of Late-glacial origin, as earlier suggested by Donner (1951). The new result is in agreement with the concept of Soviet scientists and their dating (Liiva et al. 1979: 8530±80 (TA-955), Elina 1981, pp. 82-85).

Hel-933 9070 ± 190
7120 BC
Coarse gyttja, 6.00-5.90 m depth.
Comment(YV): Beginning of organic deposition on this place.

Hel-934 8090 ± 180
6140 BC
Equisetum-Bryales peat, 5.60-5.50 m depth.

Hel-942 8880 ± 180
6930 BC
Equisetum-Bryales peat, 5.22-5.12 m depth.

Hel-943 8610 ± 180
6660 BC
Bryales peat, 4.92-4.82 m depth.

Hel-1020 8790 ± 220
6840 BC
Equisetum-Bryales peat, 5.90-5.80 m depth.

Hel-935 - 937 OULANKA SERIES Hel-854

Hel-938 PERÄPOHJOLA SERIES Hel-781

Hel-939 - 941 HÄNNISENLAMPI SERIES Hel-931

Hel-942 - 943 HIILISUO SERIES Hel-933

Hel-944 PELLO 6590 ± 230
4640 BC
66°48'N, 24°00'E, about 100 m a.s.l.
Wood, 3.00 m depth.
Coll. 1976 by the local master builder (P. Korteniemi).
Subm. by Y. Vasari.
Comment(YV): Dated to check the age of this wood found in 3 m depth in the river terrace, about 50 m from the present river valley. The age suggests shifts in the course of the River Tornio.

Hel-945 DISKO SERIES Hel-901

Hel-946 - 947 AHMASJÄRVI SERIES Hel-883

Hel-948 - 951 JÄRVELÄNJÄRVI SERIES Hel-886

VANAJAVESI SERIES

61°10'N, 24°20'E
Coll. 1976 and 1977 by I. Vuorela and M. Eronen with a Livingstone sampler. Subm. 1977 and 1978 by I. Vuorela.
Ref. Vuorela (1980).

Hel-952 3110 ± 140
1160 BC
Gyttja, 0.70-0.80 m depth.
Comment(IV): The beginning of the Juniperus phase. The date is considerably older than that of the corresponding phase at the adjacent bog (cf. Hel-814, 816).

Hel-953 3120 ± 140
1170 BC
Gyttja, 1.40-1.50 m depth.
Comment(IV): The earliest occurence of Cerealia. The date is about 1000 years older than the corresponding one in the adjacent Lake Armijärvi.

Hel-1031 3170 ± 140
1220 BC
Silty gyttja, 0.35-0.45 m depth.
Comment(IV): An increase in Cerealia pollen curve. The date is considerably too old (cf. Hel-509).

Hel-1032 3670 ± 110
1720 BC
Silty gyttja, 0.90-1.00 m depth.
Comment(IV): Start of the continuous Cerealia curve. The date is considerably older than expected.

Hel-1142 4490 ± 100
2540 BC
Gyttja, 5.20-5.30 m depth (water depth 1.5 m).
Comment(IV): Rise in the Picea curve (Pc^{+}). The date is probably too old (cf. Hel-511).

Hel-1197 3030 ± 120
1080 BC
Silty gyttja, 2.55-2.70 m depth (water depth 1.5 m).
Comment(IV): Start of continuous Cerealia curve. Contamination by older organic material possible (cf. Hel-509).

Hel-1198 2990 ± 130
1040 BC
Silty gyttja, 3.30-3.40 m depth.
Comment(IV): First Cerealia pollen (cf. Hel-510).

Hel-1199 2600 ± 120
650 BC
Humic fraction of sample Hel-1197.

Hel-1200 2610 ± 140
660 BC
Humic fraction of sample Hel-1198.

Hel-954 MIEHIKKÄLÄ modern

Seeds of Lotus Corniculatus.
Subm. 1977 by R. Ruuhijärvi.

Hel-955 - 956 KIIMAJÄNKÄ SERIES Hel-888

ISOKORPI SERIES, RUOTSINKYLÄ, TUUSULA

Coll. and subm. 1976 by H. Haila.

Hel-957 ISOKORPI 21 8710 ± 200
6760 BC
6694.268 N, 556.652 E, 52 m a.s.l.
Peat, 1.00-1.05 m depth.
Comment(HH): The beginning of peat growth, giving the maximum age for the isolation from the Ancylus Lake.

Hel-958 ISOKORPI 30 6270 ± 160
4320 BC
6694.402 N, 556.924 E, 52 m a.s.l.
Roots of Alnus glutinosa, 1.20-1.50 m depth.
Comment(HH): Subfossil roots of Alnus glutinosa (in situ position).

Hel-959 HELSINKI 360 ± 120
AD 1590
Human bone, 1.70 m depth.
Coll. 1976 by K. Rissanen.

Hel-960 JÄRVELÄNJÄRVI SERIES Hel-886

Hel-961 KIIMAJÄNKÄ SERIES Hel-888

Hel-962 - 965 JÖNSAS SERIES Hel-868

BRÄNNSKOGEN SERIES, PETALAX

62°45'N, 21°20'E, 25-26 m a.s.l.
Coll. 1976 by M. Miettinen. Subm. 1976 by A. Siiriäinen.
General comment(MM): A epineolithic dwelling site from which pottery of Morby style has been found. The dates are in agreement with the archaeological interpretations.

Hel-966 — 2910 ± 140 / 960 BC
Charcoal, 0.29 m depth.

Hel-967 — 2890 ± 130 / 940 BC
Charcoal, 0.66 m depth.

Hel-968 GRANLIDEN, SIDBÄCK, PÖRTOM — 5580 ± 140 / 3630 BC
62°40'N, 21°40'E, 67.15 m a.s.l.
Charcoal from a hearth (bottom), 0.43 m depth.
Coll. 1976 by M. Miettinen. Subm. 1976 by A. Siiriäinen.
Comment(MM): The sample is from a hughe Stone Age dwelling site. The result is in agreement with the date obtained from land uplift. Pottery of the Jäkärlä style or the II Comb Ceramic period were found on the site.

NEREŚL, NAREW VALLEY, NE-POLAND

53°12'N, 22°47'E, 105.5 m a.s.l.
Coll. 1976 by J. Grzybowski. Subm. 1977 by O. Heikkinen.
General comment(JG): The excavation is situated near the present mouth of the river Nereśl to the river Narew. The river Nereśl flows in the new channel for about 25 years. The new channel was cut during the melioration work in the valley. The excavation is situated near the boundary of the flood plain and the higher terrace. In the northern part of the excavation very fine river sands were found. Above river deposits fossil trunks and branchs were found (Pinus silvestris). They are covered by eolian sands of thickness of about 2 m. Trunks are certainly in situ and they have not any connection with present river deposits and present vegetation.
Data obtained for two trunks within artefacts found in the neighboring area, the analysis of stratigraphy and historical

literature make possible to identify the following periods of eolian activity in the Holocene: 1) 4000-1600 BC, 2) 1200-1600 AD, 3) since about 1800 till nowadays (Grzybowski 1981, Grzybowski and Heikkinen 1980).

Hel-969 NEREŚL I 830 ± 150
AD 1120

Wood, 2 m depth.

Hel-970 NEREŚL 1200 ± 130
AD 850

Wood, 2 m depth.

Hel-971 YLI-ANTTILA, LESTIJÄRVI 2050 ± 100
100 BC

63°29'N, 24°48'E

Charcoal KM 17487:55, about 0.30 m depth.

Coll. 1977 by V. Luho. Subm. 1977 by A. Siiriäinen.

Ref. Siiriäinen (1979).

Comment(AS): Charcoal from a hearth on a site with a Late Bronze Age spear head and pottery. The dating result is slightly younger than expected (see Hel-972).

Hel-972 KUUTAMA, SÄÄMÄJÄRVI 2500 ± 110
550 BC

62°05'N, 33°00'E

Charcoal, about 0.20 m depth.

Coll. 1976 by H. Hyvärinen, M. Saarnisto and A. Siiriäinen.

Subm. 1977 by A. Siiriäinen.

Comment(AS): A charcoal concentration in the cultural layer of a Eastern Karelian site with Early Metal Age textile pottery (see Hel-971).

PALSA SERIES, NORTHERN FINLAND

Coll. 1976 and 1977 and subm. 1977 by M. Seppälä.

The samples belong to the dating series of the formation of palsas.

Hel-973 LEPP-1, UTSJOKI 340 ± 110
AD 1610

69°40'N, 27°08'E

Peat from the surface of a palsa.

Hel-974 RISKASKAMA, VUOTSO, SODANKYLÄ 3600 ± 140
1650 BC
68°02'N, 27°15'E
Peat, 0.25 m depth.
Comment(MS): The dating belongs to a series of datings of the top peat found on many fells in Finnish Lapland. An earlier dating (Hel-144) has been published by Seppälä (1972).

Hel-1038 SKALLOVAARA, UTSJOKI 1210 ± 110
AD 740
69°49'N, 27°08'E
Peat (from a palsa), 0.00-0.01 m depth.

Hel-1039 SKALLOVAARA, UTSJOKI 1630 ± 130
AD 320
Peat (from a palsa), 0.00-0.01 m depth.

Hel-1040 SKALLOVAARA, UTSJOKI 1070 ± 90
AD 880
Peat (from a palsa), 0.00-0.01 m depth.

Hel-1041 SKALLOVAARA, UTSJOKI 840 ± 100
AD 1110
Peat, 0.00-0.01 m depth.

Hel-1042 ALAKILPISJÄRVI 1970 ± 100
20 BC
68°56'N, 20°55'E
Peat, about 0.30 m depth.

MASEHJAURI SERIES, ENONTEKIÖ

69°03'N, 20°29'E, 680 m a.s.l.
Coll. 1976 by H. Hyvärinen, M. Saarnisto and M. Eronen with a Livingstone sampler. Subm. 1977 by H. Hyvärinen.
General comment(HH): The series relates to studies in tree-line history and Flandrian pollen stratigraphy in N Fennoscandia. The results appear somewhat too old throughout. The topmost sediment yielded an age of 1680±110 (Hel-1037), although no gaps is apparent from the pollen record. A possible explanation is the hard water effect. There are palaeozoic calcareous rocks nearby immediately to the west of the site.

Hel-975 — 9690 ± 220 / 7740 BC

Gyttja, 1.40-1.47 m depth.

Hel-976 — 8260 ± 170 / 6310 BC

Gyttja, 1.10-1.20 m depth.

Hel-977 — 5770 ± 170 / 3820 BC

Gyttja, 0.80-0.90 m depth.

Hel-978 — 3740 ± 130 / 1790 BC

Gyttja, 0.50-0.60 m depth.

Hel-979 — 2620 ± 140 / 670 BC

Gyttja, 0.18-0.32 m depth.

Hel-1037 — 1680 ± 110 / AD 270

Gyttja, 0.00-0.10 m depth.

PETROSKOI, USSR

62°10'N, 32°50'E, 190-200 m a.s.l.
Coll. 1976 by H. Hyvärinen, M. Saarnisto and A. Siiriäinen with a Hiller sampler. Subm. 1977 by H. Hyvärinen.

Hel-980 LAMPI III A — 11390 ± 190

Silty gyttja, 5.35-5.45 m depth.
Comment(HH): The sample represents the basal organic sediment in a lake sediment section. Pollen stratigraphically the sample is from the lower part of the Artemisia Zone, expected to be of Younger Dryas age.

Hel-981 LAMPI III B — 10300 ± 180

Coarse gyttja, 4.85-4.95 m depth.
Comment(HH): The sample dates the lower part of the Birch Zone, underlain by the Artemisia Zone, expected to correspond to the Flandrian/Weichselian transition.

VALKIAJÄRVI SERIES, RUOVESI

61°54'N, 23°53'E, 110.1 m a.s.l.
Subm. 1977 and 1978 by M. Saarnisto.
General comment(MS): The sediments of Lake Valkiajärvi were sampled 1975 and 1976 by M. Saarnisto (continuous 90 mm diameter cores Va-75 and Va-76) from its deepest part, below 25 m of water, where the organic sediment sequence is nearly 3 metres in thickness. The sediment is consistently laminated throughout its entire length and contains ca 8700 varves. The following determinations were made in order to compare radiocarbon and varve dates. The samples used for radiocarbon dating are taken from cores connected to the core, from which the varves are counted, through pollen analytical and stratigraphic methods. The depths of Va-75 and Va-76 are not directly comparable. The deviations are partly expected partly unexpected and inconsistent for unknown reasons. One explanation may be contamination of the samples by ^{14}C used for labeling at the Lammi Biological Station. Radiocarbon dates from the varve core have been obtained later (Hel-1441 - 1454).
See also Hel-194 - 196 (Jungner 1979).
Ref. Hjelmroos (1979), Saarnisto (1981).

Hel-982 Va-75 — 5540 ± 180 / 3590 BC
Laminated mud, 1.15-1.20 m depth.

Hel-983 Va-75 — 6850 ± 210 / 4900 BC
Laminated mud, 1.60-1.65 m depth.

Hel-1021 Va-75 — 8350 ± 170 / 6400 BC
Laminated mud, 2.51-2.61 m depth.

Hel-1022 Va-76 — 690 ± 110 / AD 1260
Laminated mud, 0.24-0.34 m depth.

Hel-1023 Va-75 — 7780 ± 160 / 5830 BC
Laminated mud, 2.085-2.185 m depth.

Hel-1024 Va-76 — 3050 ± 140 / 1100 BC

Laminated mud, 1.135-1.193 m depth.

Hel-1114 Va-76 — 1980 ± 90 / 30 BC

Laminated mud, 0.645-0.745 m depth.

Hel-1115 Va-76 — 1550 ± 120 / AD 400

Laminated mud, 0.85-0.95 m depth.

Hel-1116 Va-76 — 4790 ± 130 / 2840 BC

Laminated mud, 1.67-1.73 m depth.

Hel-1117 Va-76 — 7310 ± 110 / 5360 BC

Laminated mud, 2.06-2.12 m depth.

Hel-1118 Va-76 — 8140 ± 120 / 6190 BC

Laminated mud, 2.31-2.37 m depth.

Hel-1119 — modern / $d^{14}C$=+8.0 ‰

The humic fraction of Hel-1114.

Hel-1120 — 1000 ± 100 / AD 950

The humic fraction of Hel-1115.

Hel-1121 — 3100 ± 120 / 1150 BC

The humic fraction of Hel-1116.

Hel-1122 — 6820 ± 110 / 4870 BC

The humic fraction of Hel-1117.

Hel-1123 — 7440 ± 120 / 5490 BC

The humic fraction of Hel-1118.

Hel-984 PERÄPOHJOLA SERIES Hel-781

Hel-985 - 987 JÖNSAS SERIES Hel-868

Hel-988 OULANKA SERIES Hel-854

MUKKAVAARAN LAMPI SERIES, ENONTEKIÖ

68°55'N, 21°00'E, 535 m a.s.l.
Coll. 1976 by H. Hyvärinen, M. Eronen and M. Saarnisto with a Livingstone sampler. Subm. 1977 by H. Hyvärinen.
General comment(HH): The sample series relates to studies in tree-line history and Flandrian pollen stratigraphy in N Fennoscandia. The basal samples appear too old relative to the deglaciation history. Two control samples from the lower part of the core were dated for soluble (humus) and insoluble fraction (Hel-1069, 1070 and Hel-1071, 1072) however the ages obtained for the different fractions do not differ significantly.
The dates obtained for the immigration of pine (7500-7000 BP, interpolated) and for the retreat of pine (4500-5000 BP) are consistent with other dates from Lapland.
Ref. Eronen and Hyvärinen (1981).

Hel-989 — 9960 ± 190 / 8010 BC
Gyttja, 2.60-2.65 m depth.

Hel-990 — 8430 ± 160 / 6480 BC
Gyttja, 2.30-2.35 m depth.

Hel-991 — 6130 ± 190 / 4180 BC
Gyttja, 2.00-2.05 m depth.

Hel-992 — 4930 ± 190 / 2980 BC
Gyttja, 1.65-1.70 m depth.

Hel-993 — 3530 ± 150 / 1580 BC
Gyttja, 1.10-1.20 m depth.

Hel-1069 — 9040 ± 140 / 7090 BC
Gyttja, 2.40-2.55 m depth.

Hel-1070 — 8890 ± 190 / 6940 BC
The humic fraction of Hel-1069.

Hel-1071 — 7480 ± 140 / 5530 BC
Gyttja, 2.10-2.25 m depth.

Hel-1072 7040 ± 150
5090 BC

The humic fraction of Hel-1071.

LAKE NAIVASHA SERIES, KENYA

0°45'S, 36°22'E
Coll. and subm. 1976 by A. Siiriäinen.
Comment(AS): A site with Pastoral "Neolithic" pottery, one of the earliest occurences of domesticates (cattle, sheep/goat) in East Africa. Ref. Onyango-Abudje (1977).

Hel-994 CRESCENT ISLAND 21/4 2920 ± 110
970 BC

Bone, 0.30 m depth.

Hel-995 CRESCENT ISLAND 21/6 3130 ± 120
1180 BC

Bone, 0.40 m depth.

LAMMASLAMPI SERIES, VANTAA

60°16'N, 24°48'E, 31.8 m a.s.l.
Subm. 1977 by M. Eronen.
Ref. Alhonen et al. (1978).

Hel-996 7740 ± 170
5790 BC

Mud, 6.60-6.75 m below water surface.
Comment(ME): Diatom analysis indicates that the dated clayey mud layer belongs to the slightly saline Mastogloia phase of the Baltic.

Hel-997 7450 ± 160
5500 BC

Mud, 6.30-6.40 m below water surface.
Comment(ME): The level 6.30 m is the beginning of the brachish water Clypeus-flora in the diatom stratigraphy. The dated sample is just below that boundary. The level 6.40 m means the beginning of a continuous Tilia curve in the pollen diagram.

Hel-998 7310 ± 170
5360 BC

Mud, 6.20-6.30 m below water surface.

Comment(ME): The lowermost Litorina Sea sediment, just above the Clypeus-limit in the diatom stratigraphy.

Hel-999 6550 ± 170
4600 BC
Mud, 5.90-5.80 m depth below water surface.
Comment(ME): Most of the brachish-water diatoms disappear in the diatom stratigraphy. That means the isolation of the basin from the Litorina Sea.

Hel-1000 6160 ± 160
4210 BC
Mud, 5.60-5.50 m below water surface.
Comment(ME): The final disappearance of brachish-water diatoms which were living in the basin after its isolation from the Litorina Sea.

SAMPLES FROM LOGBOATS OF DIFFERENT TYPES

Coll. 1976 by E. Naskali. Subm. 1977 by A. Siiriäinen.

Hel-1001 VALKOLAMPI, KIRKKONUMMI 410 ± 110
AD 1540
Wood
Comment(AS): Dugout from one log.

Hel-1002 KOLMIKULMALAMPI, ESPOO 720 ± 90
AD 1230
Wood
Comment(AS): Dugout from one log.

Hel-1003 NYÅKER, SNAPPERTUNA 690 ± 100
AD 1260
Wood, about 0.50 m depth.
Comment(AS): Dugout of a composite type.

Hel-1004 JÄRVENSUO, HUMPPILA 4210 ± 140
2260 BC
Coll. 1976 by E. Naskali.
Subm. 1977 by A. Siiriäinen.
Wood, about 1 m depth.
Comment(AS): A sample from a paddle found in a bog from a depth of ca. 1 m.

KOIRALAMMINSUO SERIES, LAMMINSALO, RÄÄKKYLÄ

62°16'N, 29°42'E
Coll. 1976 by M. Huurre and E. Naskali.
Subm. 1977 and 1978 by A. Siiriäinen.
General comment(AS): Samples from a sewn boat found in a bog from a depth of ca. 0.5 m.
Ref. Naskali (1979).

Hel-1005 820 ± 130
AD 1130
Wood
Comment(AS): A sample from one side board.

Hel-1093 780 ± 100
AD 1170
Comment(AS): A sample of a withe.

Hel-1006 - 1008 JÖNSAS SERIES Hel-868

PIENI NÄÄTÄLAMPI SERIES, KUUSAMO

65°48'N, 29°43'E, 293 m a.s.l.
Gyttja samples from various levels of the lake bottom deposits. Coll. 1976 from the ice using a piston sampler and subm. 1976 by Y. Vasari and T. Mikkonen.
The purpose of the samples was to date the vegetational succession at this site, known from earlier work (Vasari 1962). The ages obtained are consistently higher than expected, probably due to the hard water effect.

Hel-1009 10140 ± 180
Gyttja, 2.70-2.55 m depth, composite of equivalent levels in two replicate cores.
Comment(YV): End of local Lateglacial vegetational phase.

Hel-1010 10000 ± 230
Gyttja, 2.40-2.15 m depth, composite of equivalent stratigraphic levels in two replicate cores.
Comment(YV): Boundary between Birch and Pine maxima.

Hel-1011 6780 ± 210
4830 BC

Gyttja, 1.55-1.45 m depth.
Comment(YV): Spread of Picea (Pc^{+}).

RAJALAMPI SERIES, KUUSAMO

65°49'N, 29°40'E, 258 m a.s.l.
Gyttja samples from various levels of the lake bottom.
Coll. 1976 from the ice using a piston sampler by Y. Vasari and T. Mikkonen. Subm. 1976 by Y. Vasari.
The purpose of these samples was to date the vegetational succession at this site known from earlier work (Vasari 1962) and compare it with the results from near-by Pieni Näätälampi, 3 km from this place.

Hel-1012 9210 ± 170
7260 BC

Gyttja, 3.75-3.65 m depth, composite of equivalent stratigraphic levels in two replicate cores.
Comment(YV): Date for the early Holocene pine maximum. Roughly 1500 years older than supposed. Hard water effect?

Hel-1013 7980 ± 210
6030 BC

Gyttja, 3.50-3.40 m depth.
Comment(YV): Beginning of the Hypsithermal. About 1500 years older than originally supposed, possibly due to hard water effect.

Hel-1014 6130 ± 150
4180 BC

Gyttja, 3.15-3.05 m depth, composite of equivalent stratigraphic levels in two replicate cores.
Comment(YV): Date for immigration of spruce, somewhat older (about 650 years) than supposed. Slightly younger than the corresponding horizon in the more easterly Pieni Näätälampi series.

Hel-1015 4860 ± 180
2910 BC

Gyttja, 2.65-2.55 m depth, composite of equivalent levels in two replicate cores.

Comment(YV): Date for the beginning of the climatic deterioration. Fits reasonably well with earlier concepts.

HÖYTIÄINEN SERIES

Samples from different sites around Lake Höytiäinen.
Coll. and subm. 1977 and 1978 by H. Vesajoki.

Hel-1016 VIEREVÄNNIEMI, HÖYTIÄINEN 6400 ± 160
4450 BC
62°45'45"N, 29°49'40"E, 87.5 m a.s.l.
Plant remains in silty sand, 0.50-0.60 m depth.
Comment(HV): Possibly redeposited material in an accumulation shore terrace.

Hel-1017 VIEREVÄNNIEMI, HÖYTIÄINEN 7390 ± 200
5440 BC
Wood remains in silty sand.
Comment(HV): Possibly redeposited material in an accumulation shore terrace.

Hel-1018 SÄYNEPURO, HÖYTIÄINEN 6490 ± 210
4540 BC
62°57'N, 29°39'E, 96 m a.s.l.
Plant remnants in mud, 1 m depth.
Comment(HV): Exposed lake bottom (Vesajoki 1980).

Hel-1019 SÄYNEPURO, HÖYTIÄINEN 4640 ± 180
2690 BC
Peat, 0.5 m depth.
Comment(HV): Exposed lake bottom (Vesajoki 1980).

Hel-1033 VIEREVÄNNIEMI, HÖYTIÄINEN 5040 ± 120
3090 BC
Wood remains in silty sand.
Comment(HV): Possibly redeposited material in an accumulation shore terrace.

Hel-1034 SUONIEMI, HÖYTIÄINEN 5990 ± 130
4040 BC
62°56'00"N, 29°40'30"E, 98.5 m a.s.l.
Peat below sand, 1.8 m depth.
Comment(HV): An abandoned beach ridge of Lake Höytiäinen.

Hel-1035 SUONIEMI, HÖYTIÄINEN 650 ± 110
AD 1300
Wood below sand, 1.2 m depth.

Comment(HV): A pine stump in situ buried by aeolian sand (Vesajoki 1980).

Hel-1036 ÄNÄKKÄLÄNNIEMI, HÖYTIÄINEN 8610 ± 180
6660 BC
62°59'00"N, 29°38'10"E, 96.5 m a.s.l.
Wood below sand, 1.0 m depth.
Comment(HV): A pine stump buried by transgressive beach sand.

Hel-1136 TIAISSUO 1, POLVIJÄRVI 8850 ± 130
6900 BC
62°56'N, 29°26'E, 100.5 m a.s.l.
Coarse detritus gyttja, 2.45-2.47 m depth.
Comment(HV): The beginning of organic sedimentation following the isolation of Höytiäinen to an independent lake (Vesajoki 1980).

Hel-1137 TIAISSUO 1, POLVIJÄRVI 8680 ± 130
6730 BC
Peat, 2.35-2.37 m depth.
Comment(HV): The basal part of terrestric peat (Vesajoki 1980).

Hel-1138 TIAISSUO 2, POLVIJÄRVI 9570 ± 130
7620 BC
62°56'20"N, 29°27'E, 100 m a.s.l.
Coarse detritus gyttja, 3.65-3.75 m depth.
Comment(HV): Beginning organic sedimentation indicating the isolation of Höytiäinen to an independent lake. A slight ageing effect of graphite is possible (Vesajoki 1980).

Hel-1139 TIAISSUO 2, POLVIJÄRVI 8820 ± 130
6870 BC
Dy, 3.10-3.20 m depth.
Comment(HV): Isolation of the mire pool from Lake Höytiäinen (Vesajoki 1980).

Hel-1144 RAPALAHTI 4, KONTIOLAHTI 9380 ± 120
7430 BC
62°46'N, 29°35'30"E, 92 m a.s.l.
Clay mud, 1.60-1.65 m depth.
Comment(HV): Beginning organic sedimentation indicating the isolation of Höytiäinen to an independent lake. A slight ageing effect of graphite is possible (Vesajoki 1980).

Hel-1145 RAPALAHTI 4, KONTIOLAHTI 9120 ± 170
7170 BC

Mud, 1.45-1.50 m depth.
Comment(HV): The minimum age for the isolation of Lake Höytiäinen. Possibility of a slight ageing effect of graphite is still present (Vesajoki 1980).

Hel-1146 RAPALAHTI, KONTIOLAHTI 9230 ± 130
7280 BC

62°46'10"N, 29°35'20"E, 95.5 m a.s.l.
Peat, 1.10-1.12 m depth.
Comment(HV): Exposed lake bottom of Höytiäinen.

Hel-1020 HIILISUO SERIES Hel-933

Hel-1021 - 1024 VALKIAJÄRVI SERIES Hel-982

Hel-1025 - 1028 TEL LACHISH SERIES Hel-809

LAPURINSAARI SERIES, VIRONLAHTI

60°27'15"N, 27°35'00"E
Coll. 1977 by H: Alopaeus. Subm. 1977 by T. Edgren.
Comment(TE): The buildingtechnique of the Lapuri-wreck has very close parallells in Scandinavian ships (Skuldelev) from the Viking Age now confirmed by the datings, of which Hel-1030 is made of the oakum of the ship consisting of cow hair.
(Cf. The Maritime Museum Helsinki. Annual Report 1977, p. 4.)

Hel-1029 1190 ± 90
AD 760

Oak wood

Hel-1030 1010 ± 80
AD 940

Cow hair

Hel-1031 - 1032 VANAJAVESI SERIES Hel-952

Hel-1033 - 1036 HÖYTIÄINEN SERIES Hel-1016

Hel-1037 MASEHJAURI SERIES Hel-975

Hel-1038 - 1042 PALSA SERIES Hel-973

Hel-1043 HORSLÖK, PERNAJA 630 ± 100
AD 1320
Wood
Coll. 1977 by T. Laine. Subm. 1977 by O. Granö.

Hel-1044 - 1050 JÖNSAS SERIES Hel-868

Hel-1051 KURKELANSUO, NAKKILA 2810 ± 100
860 BC
6804.10 N, 555.30 E, 18.5 m a.s.l.
Peat, 2.0 m depth.
Coll. and subm. 1977 by M. Tikkanen.
Comment(MT): Isolation of the basin from the Baltic. Immigration of Picea in Nakkila (Tikkanen 1981).

NUOTTILAMPI SERIES, PYHÄJÄRVI

7087.50 N, 461.70 E, 146.2 m a.s.l.
Coll. 1977 with piston corer and subm. 1977 and 1978 by M. Tikkanen.

Hel-1052 9460 ± 170
7510 BC
Mud, 5.65 m depth.
Comment(MT): Isolation of the basin from the Baltic.

Hel-1081 5500 ± 140
3550 BC
Mud, 3.25 m depth.
Comment(MT): Immigration of Picea.

Hel-1128 9480 ± 120
7530 BC
Mud, 5.45 m depth.
Comment(MT): Isolation of the basin from the Baltic.

Hel-1129 9180 ± 130
7230 BC
Mud, 5.30 m depth.
Comment(MT): Immigration of Alnus.

KUNONNIEMI SERIES, KITEE

62°06'N, 30°13'E
Coll. 1976 by J. Vuorinen and K. Tolonen with spade and

a Russian corer. Subm. 1977 and 1978 by J. Vuorinen.
General comment(KT): A rapidly grown S. fuscum hummock was chosen for comparison of different methods useful in dating of surface peats. The same peat samples were used for estimation of heavy metal and SIRM fluxes onto the bog surface through time. All the ^{14}C ages obtained are stratigraphically consistent and in good agreement with ^{210}Pb-dating, with moss increment dating and with the onset of rye cultivation some AD 1200 as dated by annual laminations from a small lake nearby (Tolonen 1977, Pakarinen and Tolonen 1977, Oldfield et al. 1981, El-Daoushy et al. 1981, Vuorinen 1978, 1979).

Hel-1053 — 950 ± 110 AD 1000
Sphagnum peat, 0.80-0.83 m depth.
Pollen analysis strongly indicates an intensive slash- and burn practice in the vicinity from 80 cm upwards.

Hel-1094 — 1820 ± 120 AD 130
Sphagnum peat, 1.00-1.05 m depth.

Hel-1140 — 800 ± 120 AD 1150
Sphagnum peat, 0.75-0.80 m depth.

Hel-1141 — 1270 ± 100 AD 680
Sphagnum peat, 0.83-0.88 m depth.

TORRONSUO SERIES, TAMMELA

60°43'N, 23°35'E, 105 m a.s.l.
Coll. 1977 and subm. 1978 by A. Siiriäinen.
General comment(AS): Gyttja and peat samples from a bog basin isolated from the Baltic Sea during the Ancylus stage. Thus the result of Hel-1054 indicates a hiatus of ca. 2000 years between the clay and gyttja layers (Aartolahti 1965).

Hel-1054 — 5020 ± 110 3070 BC
Gyttja, 5.18-5.25 m depth.

Hel-1055 — 4560 ± 110 2610 BC
Peat, 4.52-4.60 m depth.

Hel-1056 3450 ± 130
1500 BC
Peat, 3.75-3.82 m depth.

Hel-1057 2900 ± 140
950 BC
Peat, 2.80-2.87 m depth.

Hel-1058 2590 ± 110
640 BC
Peat, 2.20-2.27 m depth.

Hel-1059 SKI SERIES Hel-803

YYTERI SERIES

61°33'N, 21°30'E, about 7 m a.s.l.
Coll. 1977 by T. Wallin. Subm. 1977 by T. Aartolahti.
General comment(TA): Dunes in Finland were built in two stages: inland dunes 10000-8000 years ago and dunes at recent coast 500-100 years ago (or during the little ice age). According to the location about 7 m a.s.l. the uppermost fossil dune at Yyteri was built about 950 yeras ago and is the oldest known dune at recent coast. The structure of dune indicates, that the dune has not moved.

Hel-1060 YYTERI 1 920 ± 100
AD 1030
Wood

Hel-1061 Yyteri 2 1040 ± 100
AD 910
Wood

Hel-1062 KALAJOKI 420 ± 110
AD 1530
64°11'N, 23°42'E, about 5 m a.s.l.
Wood
Coll. 1976 and subm. 1977 by T. Aartolahti.
Comment(TA): A young coastal dune was built by wind, shifted near shore in forest and buried pines when dune moved away the stump appeared on deflation basin. According to the rate of land uplift the dune was built about 400 years ago. The dune moved about 100 m during 400 years according to a speed of 0.25 m/year. The dune is still moving.

Hel-1063 - 1068 SUBFOSSIL PINE SERIES Hel-807

Hel-1069 - 1072 MUKKAVAARAN LAMPI SERIES Hel-989

MAMMOTH FINDS IN FINLAND

General comment(J Donner): A molar and two bones of mammoth were dated as well as plant remains stuck to one of the bones. The ages of mammoth may suggest that large parts of Finland were ice-free in Middle Weichselian time (Donner et al. 1979).

Hel-1073 HERTTONIEMI I 4270 ± 100
2320 BC

Plant remains (stuck to the bone).

Hel-1074 HERTTONIEMI II 15500 ± 200

Humerus of mammoth (between clay and sand under a bog).

Hel-1075 LOHTAJA 25200 ± 500

Femur of mammoth (in a grey clay covered by 1 m of sand).

Hel-1076 ESPOO >43000

Molar of mammoth (in till).

Hel-1077 - 1079 SKI SERIES Hel-803

FINSTRÖM SERIES, AALAND

Coll. 1977 by M. Dreijer and 1978 by K. Weber.
Subm. 1977 by T. Edgren and 1978 by A. Siiriäinen.
Comment(TE): The samples of the Finström series originate from wooden constructions from several parts of the medieval church of Finström. The datings are obviously a few hundred yeras too old.

Hel-1080 1000 ± 70
AD 950

Wood

Hel-1167 430 ± 90
AD 1520

Wood

Hel-1168 700 ± 90
AD 1250

Wood

Hel-1169 650 ± 110
AD 1300
Wood

Hel-1170 700 ± 100
AD 1250
Wood

Hel-1081 NUOTTILAMPI SERIES Hel-1052

RÅTTUVARRI SERIES

69°21'N, 20°19'E, about 100 m a.s.l.
Coll. 1977 by H. Hyvärinen and M. Saarnisto with a Livingstone sampler. Subm. 1978 by H. Hyvärinen.
General comment(HH): The Råttuvarri series relates to studies in tree-line history and Flandrian pollen stratigraphy in N Fennoscandia. The basal date is consistent with the deglaciation history. Both radiocarbon dates and pollen indicate that the core is truncated, the topmost section covering about 3000 years being absent. The spread of pine is dated at 7300-7200 yrs BP (Eronen and Hyvärinen 1981).

Hel-1082 9460 ± 140
7510 BC
Gyttja, 2.55-2.65 m depth.

Hel-1083 7850 ± 130
5900 BC
Gyttja, 2.10-2.20 m depth.

Hel-1084 7020 ± 130
5070 BC
Gyttja, 1.60-1.70 m depth.

Hel-1085 5540 ± 110
3590 BC
Gyttja, 1.05-1.15 m depth.

Hel-1086 4250 ± 110
2300 BC
Gyttja, 0.50-0.60 m depth.

ALTA SERIES, NORWAY

69°52.5'N, 23°28'E, about 200 m a.s.l.
Coll. 1977 by H. Hyvärinen and M. Saarnisto with a Livingstone

sampler. Subm. 1978 by H. Hyvärinen.
General comment(HH): The Alta series relates to studies in Flandrian tree-line history and pollen stratigraphy in N Fennoscandia. The site is just inside the Tromsö-Lyngen (Younger Dryas) endmoraines, and the basal date is broadly consistent with the deglaciation history. On the basis of the pollen stratigraphy and the age of the topmost sample 20-30 cm below the top of the core, the core appears to be truncated.

Hel-1087 — 9930 ± 140 / 7980 BC
Gyttja, 1.35-1.45 m depth.

Hel-1088 — 8780 ± 130 / 6830 BC
Gyttja, 1.10-1.20 m depth.

Hel-1089 — 7030 ± 130 / 5080 BC
Gyttja, 0.80-0.90 m depth.

Hel-1090 — 5400 ± 110 / 3450 BC
Gyttja, 0.50-0.60 m depth.

Hel-1091 — 3880 ± 140 / 1930 BC
Gyttja, 0.20-0.30 m depth.

Hel-1092 THRUPP HOUSE FARM, ENGLAND — 13260 ± 180

Clay gyttja, 0.19-0.24 m depth.
Coll. 1977 by M. Aalto and P. Gibbard.
Subm. 1978 by M. Aalto.
Comment(MA): The sample is taken from an organic deposit resting in gravel and sand exposed at Thrupp House Farm. The gravels and sand were laid in a bed-load dominated river under cold climatic conditions. Another date from the same organic deposit gave an age of 13580±120 (Q-2017) whilst a date of 47700^{+4000}_{-2600} (Su-932) was obtained from obviously secondary Pinus bark (Aalto, and Gibbard in print.).

Hel-1093 KOIRALAMMINSUO SERIES Hel-1005

Hel-1094 KUNONNIEMI SERIES Hel-1053

Hel-1095 KYMENRANTA, KUUSANKOSKI 5090 ± 130
3140 BC

Wood, KM 20117.
Coll. by E. Naskali. Subm. 1977 by A. Siiriäinen.
Comment(AS): Sample from a sledge runner.

Hel-1096 NOORMARKKU 4900 ± 150
2950 BC

61°36'N, 22°03'E
Wood
Coll. by E. Naskali. Subm. 1977 by A. Siiriäinen.
Comment(AS): Sample from a sledge runner found in a bog from which both macrofossil and pollen evidence has been obtained of Late Stone Age, Bronze Age and Iron Age forest clearance, grazing and cultivation activities (Aalto et al. 1981).

Hel-1097 SKI SERIES Hel-803

Hel-1098 BURN OF BENHOLM, KINCARDINESHIRE, SCOTLAND >42000

Peat
Coll. 1934 by E. Mikkola. Subm. 1978 by J. Donner.
Comment(JD): Radiocarbon assay and pollen spectra suggest that the peat lenses in the basal parts of the exposed till are from Early or Middle Denvensian time (Donner 1979).

KÄRKKÄ SERIES, SALO

60°20'N, 23°10'E, about 30 m a.s.l.
Coll. 1977 by K. Tolonen with spade and Russian corer.
Subm. 1978 by M. Tolonen.
General comment(MT): The series belongs to an archaeological-botanical co-work. Pollen analysis is under investigation.

Hel-1099 SUO I:1 5170 ± 130
3220 BC

Coarse detritus gyttja and remnants of wood, 1.86-1.92 m depth.

Hel-1100 SUO I:2 4930 ± 130
2980 BC

LC-peat, 1.70-1.75 m depth.

Hel-1101 SUO I:3 4560 ± 120
2610 BC

LC-peat H6(7), 1.35-1.40 m depth.

Hel-1102 SUO I:4 4690 ± 150
2740 BC

LCS-peat, 1.00-1.05 m depth.

HAHKIALA SERIES, HAUHO

61°09'N, 24°36'E, about 85 m a.s.l.
Coll. 1977 by K. Tolonen. In situ freezing.
Subm. 1978 by M. Tolonen.
General comment(MT): The dates are associated with the beginning of cultivation in the county of Tavastia. Due to the morphometry of the basin the material consisted of a notable portion of allochtonous particles (twigs, conifercones, leaves etc.). Preliminary pollen analysis indicated that the three uppermost dates are not stratigraphically consistent and the sedimentation in the basin has not been peaceful. It is not possible to judge if the ages are correct.

Hel-1103 LIINA II 1 5080 ± 130
3130 BC

Coarse detritus gyttja, 1.91-1.97 m depth.

Hel-1104 LIINA II 2 4310 ± 120
2360 BC

Coarse detritus gyttja, 1.70-1.74 m depth.

Hel-1105 LIINA II 3 3480 ± 120
1530 BC

Coarse detritus gyttja, 1.50-1.54 m depth.

Hel-1106 LIINA II 4 2630 ± 110
680 BC

Coarse detritus gyttja, 1.24-1.28 m depth.

KISSALAMPI SERIES, LAITIKKALA, PÄLKÄNE

61°15'N, 24°21'E, about 90 m a.s.l.
Coll. 1977 by K. Tolonen. In situ freezing.
Subm. 1978 by M. Tolonen.

Ref. Tolonen,M. (1981).

Hel-1107 KISSA I:1 3940 ± 120
1990 BC
Coarse detritus laminated gyttja, 1.41-1.45 m depth.
Comment(MT): Lower part of Subboreal Period with the first single Cerealia-type pollen grains in the profile.

Hel-1108 KISSA I:2 3060 ± 120
1110 BC
Coarse detritus gyttja, 1.25-1.30 m depth.
Comment(MT): Small-scale cultivation with the final QM-decline below the SB/SA zone-boundary.

Hel-1109 KISSA I:3 2400 ± 110
450 BC
Coarse detritus gyttja, 1.00-1.05 m depth.
Comment(MT): Continuous large scale agricultural activity in the Roman Iron Age. The date is ca. 600-800 years too old due to allochtonous eroded material from the watershed.

KETOHAKA SERIES, SALO

6705 N, 287 E / 60°23'N, 23°09'E, about 20 m a.s.l.
Coll. 1977 by K. Tolonen with spade and knife.
Subm. 1978 by M. Tolonen.
General comment(MT): The six dates from four different levels provide dating for local development of vegetation and environment. The site is situated within the Iron Age settlement site with burial cairn and fields. The study was made in co-operation with the archaeological Salo project. The dates and the profile stratigraphically consistent.

Hel-1110 3240 ± 110
1290 BC
Mineral soil profile with humus and charcoal (B-horizon), 0.38-0.40 m depth.
Comment(MT): The sample shows the lowest record of agricultural activity during the older Bronze Age.

Hel-1111 1190 ± 100
AD 760
Peaty mineral soil profile with sand and charcoal (A-horizon), 0.215-0.230 m depth.

Comment(MT): The sample dates permanent, continuous cultivation in younger Iron Age.

Hel-1126 3220 ± 120
1270 BC

The humic fraction of Hel-1110.
Comment(MT): Sample was dated as a check for Hel-1110, and no significant age difference was present between the fraction.

Hel-1127 1190 ± 100
AD 760

The humic fraction of Hel-1111.
Comment(MT): A check for Hel-1111. No age difference present.

Hel-1362 1850 ± 130
AD 100

Humusrich mineral soil profile (mull), 0.24-0.27 m depth (coll. 1979, subm. 1980).
Comment(MT): Beginning of Secale cultivation and permanent settlement after forest clearance.

Hel-1363 2320 ± 120
370 BC

Humusrich mineral soil profile (mull), 0.33-0.34 m depth (coll. 1979, subm. 1980).
Comment(MT): Pollen analysis revealed small-scale cultivation before the final deflorestatation.

LIKOLAMPI SERIES, SALPAKANGAS, LAHTI

60°59'N, 25°31'E
Coll. 1977 by K. Tolonen. In situ freezing.
Subm. 1978 by M. Tolonen.

Hel-1112 1710 ± 120
AD 240

Coarse detritus gyttja, 1.20-1.25 m depth.
Comment(MT): Beginning of continuous farming and clearance in the early Iron Age.

Hel-1113 1740 ± 130
AD 210

Coarse detritus gyttja, 0.95-1.00 m depth.
Comment(MT): Large-scale agricultural activity on the

watershed caused eroding and the date is ca. 700-800 years too old.

Hel-1114 - 1123 VALKIAJÄRVI SERIES Hel-982

MALMTRÄSKET SERIES, PORVOO

60°21'07"N, 25°47'44"E, 22.7 m a.s.l.
Coll. and subm. 1978 by M. Eronen.

Hel-1124 5420 ± 140
3470 BC

Gyttja, 6.10-6.05 m depth.
Comment(ME): Gyttja deposited after isolation of basin from the Litorina Sea.

Hel-1125 5720 ± 120
3770 BC

Clay-gyttja, 6.15-6.10 m depth.
Comment(ME): Isolation of the basin from the Litorina Sea.

Hel-1126 - 1127 KETOHAKA SERIES Hel-1110

Hel-1128 - 1129 NUOTTILAMPI SERIES Hel-1052

BAKUNKÄRRSTRÄSKET SERIES, SIPOO

60°17'45"N, 25°12'00"E, 32.2 m a.s.l.
Coll. with a piston corer and subm. 1978 by H. Hyvärinen.
General comment(HH): These samples relate to studies in relative sea-level changes near Helsinki. Hel-1130 dates the beginning of a slightly brackish stage in the basin history (Mastogloia/early Litorina) and Hel-1131 the isolation of the basin from the Baltic (Hyvärinen 1979, see also Hyvärinen 1980).

Hel-1130 8010 ± 120
6060 BC

Gyttja, 3.45-3.55 m depth.

Hel-1131 7250 ± 120
5300 BC

Gyttja, 3.05-3.15 m depth.

VARRASSUO SERIES, HOLLOLA

6765.8 N, 580.3/24°E / 61°00'N, 25°28'E, 149 m a.s.l.
Coll. 1977 by K. Tolonen with steal cylinder, spade and knife.
Subm. 1978 by K. Tolonen.
General comment(KT): Four successive radiocarbon samples were dated from a Sphagnum fuscum hummock in order to obtain figures for net accumulation of peat. All the ages obtained are stratigraphically consistent, the uppermost one (Hel-1132) nicely fitting with the age estimation based on moss-increment dating from the same core.
Ref. Donner et al. (1978), Tolonen,K. (1979), Pohjola et al. (1980), (1981).

Hel-1132 370 ± 110
AD 1580
(N)S H5(-6) S fuscum (b.d. 74.2 gdm^{-3}),
0.30-0.40 m depth.

Hel-1133 860 ± 120
AD 1090
SH_4(fuscum) (b.d. 51.1 gdm^{-3}), 0.50-0.60 m depth.
Comment(KT): Donner et al. (1978) dated 0.50-0.60 m level from a hollow site about 1 m north from the coring site obtaining an age 1400±100.

Hel-1134 880 ± 100
AD 1070
ErSH_4(fuscum) (b.d. 48 gdm^{-3}), 0.70-0.80 m depth.
Comment(KT): Donner et al. (1978) dated 0.70-0.80 m level with an age 2480±110.

Hel-1135 1200 ± 100
AD 750
SH_4(S fuscum) (b.d. 54.3 gdm^{-3}), 0.90-1.00 m depth.
Comment(KT): Donner et al. (1978) dated 0.90-1.00 m level back to 2560±110. It seems evidently that the slightly decomposed hummock site within the uppermost meter, at least, has grown much faster than the hollow site of Donner et al. (1978).

Hel-1136 - 1139 HÖYTIÄINEN SERIES Hel-1016

Hel-1140 - 1141 KUNONNIEMI SERIES Hel-1053

Hel-1142 VANAJAVESI SERIES Hel-952

Hel-1143 TROLLBERG, HOUTSKARI 2990 ± 140
1040 BC

60°12'N, 21°24'E
Charcoal
Subm. 1978 by A. Erä-Esko.
Comment(A Siiriäinen): A burial cairn of the common Bronze Age type with no datable archaeological finds.

Hel-1144 - 1146 HÖYTIÄINEN SERIES Hel-1016

JOUPINKYLÄ, SEINÄJOKI

62°47'50"N, 29°49'10"E, 36 m a.s.l.
Coll. and subm. 1979 by M. Eronen.
Ref. Eronen et al. (1979).

Hel-1147 5690 ± 150
3740 BC

Shells of Mytilus edulis.
Comment(ME): According to the radiocarbon date and the shoreline displacement data the common mussels have been living in rather deep water.

Hel-1148 6010 ± 170
4060 BC

Organic matter from silt surrounding the shells of Mytilus edulis.
Comment(ME): The dates from shells and the organic matter of the silt show that the molluscs were living here when the silt deposits were formed.

SPÅKENES SERIES, NORWAY

69°45.5'N, 20°30'E
Coll. and subm. 1978 by H. Hyvärinen.
General comment (HH): Spåkenes samples date the occurence of pine outside its present range in the Lyngenfjorden area. The nearest present occurence of pine is at Skibotn about 50 km to

the east (Eronen and Hyvärinen 1981).

Hel-1149 3780 ± 100
1830 BC

Subfossil pine stump, about 0.5 m below the surface of the section.

Hel-1150 5020 ± 110
3070 BC

Subfossil pine stump, about 1.5 m below the surface of the section.

LAAVIOSUO SERIES, JAHKOLA, LAMMI

6769.0 N, 391.5 E / 61°01'N, 25°00'E, 160 m a.s.l.
Coll. 1977 by K. Tolonen with a steel cylinder and a Russian corer 10x100 cm. Subm. 1978 by K. Tolonen.
General comment(KT): For obtaining dry matter accumulation figures for a representative raised bog in S. Finland a volumetric core profile was taken and dated by thirteen successive radiocarbon datings. All the ages obtained are stratigraphically consistent and in agreement with the expectations based on pollenanalytical features, which are earlier dated from the study area (Tolonen,K. 1979).

Hel-1151 110 ± 90
AD 1840

SH_5, b.d. 36.8 gdm^{-3}, 0.50-0.60 m depth.

Hel-1152 600 ± 90
AD 1350

SH_{4-5}(Sphagnum fuscum), b.d. 70.3 gdm^{-3}, 0.90-1.00 m depth.

Hel-1153 1870 ± 110
AD 80

SH_4 (Sphagnum fuscum), b.d. 60.6 gdm^{-3}, 1.80-1.90 m depth.
Comment(KT): Sample taken just above distinct Picea fall, a common feature in Lammi area. Cerealia and Cannabis pollen grains 10 cm above the dated level.

Hel-1154 1280 ± 90
AD 670

SH_4(Sphagnum fuscum), b.d. 70.3 gdm^{-3}, 1.40-1.50 m depth.

Comment(KT): Dated sample just below the first occurence of rye (Secale) pollen grains.

Hel-1155 690 ± 130 AD 1260

$ErSH_5$(Sphagnum acutifolia), b.d. 52.6 gdm^{-3}, 1.00-1.10 m depth.
Comment(KT): Pollen diagram indicates crop cultivation in the area.

Hel-1156 2400 ± 140 450 BC

SH_4(Sphagnum fuscum), b.d. 37.7 gdm^{-3}, 2.80-2.90 m depth.
Comment(KT): 20 cm below clear QM^- and Alnus decline. Picea very high.

Hel-1157 2320 ± 100 370 BC

SH_4(Sphagnum fuscum), b.d. 42.9 gdm^{-3}, 2.40-2.50 m depth.
Comment(KT): 10 cm above clear QM^- and Alnus decline. Wettest stage in the history of the bog. Picea very high.

Hel-1158 3100 ± 150 1150 BC

SH_5(Sphagnum fuscum), b.d. 64.0 gdm^{-3}, 3.30-3.40 m depth.
Comment(KT): Picea about 20% of AP. QM still quite high.

Hel-1159 4420 ± 130 2470 BC

$ErSH_6$(Sphagnum fuscum), b.d. 92.6 gdm^{-3}, 4.00-4.10 m depth.
Comment(KT): $Picea^{o,+}$, decline in Ulmus and Tilia.

Hel-1160 8780 ± 120 6830 BC

$ErSH_7$, b.d. 90.9 gdm^{-3}, 5.35-5.45 m depth.
Comment(KT): Below rational Alnus limit. 10 cm below the sample level the share of Betula rises to 76-91% of AP.

Hel-1161 7690 ± 160 5740 BC

$ErSH_8$, b.d. 112.6 gdm^{-3}, 5.05-5.15 m depth.
Comment(KT): Alnus about 10% of AP, starting of Ulmus, Corylus 2-6%.

Hel-1162 6580 ± 150
4630 BC

$ErSH_8$, b.d. 98.3 gdm^{-3}, 4.85-4.95 m depth.
Comment(KT): $Tilia^o$. Maximum in Alnus and QM.

Hel-1163 5620 ± 100
3670 BC

$ErSH_7$, b.d. 70.8 gdm^{-3}, 4.45-4.55 m depth.
Comment(KT): $Tilia^+$ is about 10 cm below this level.

PYHEENSILTA SERIES, MYNÄMÄKI

Coll. 1978 by L. Väkeväinen. Subm. 1978 by T. Edgren.

Hel-1164 2390 ± 110
440 BC
Charcoal from stone setting I, 0.20-0.30 m depth.

Hel-1165 2080 ± 110
130 BC
Charcoal from stone setting I, 0.20-0.30 m depth.

Hel-1166 2130 ± 100
180 BC
Charcoal from stone setting II, 0.20-0.30 m depth.

Hel-1167 - 1170 FINSTRÖM SERIES Hel-1080

Hel-1171 - 1175 LAUHANVUORI SERIES Hel-859

YLIMYSNEVA SERIES, PARKANO

$62^o08'N$, $22^o52'E$, 172 m surface alt.
Samples from various levels of a mire, taken in order to date the vegetational succession and to calculate the rate of peat growth.
Coll. 1975 using a Russian peat sampler by A. Huttunen.
Subm. 1978 by A. Huttunen and Y. Vasari.

Hel-1176 220 ± 100
AD 1730
ErS-peat, 0.475-0.425 m depth.
Comment(AH): The meaning of this sample was mainly to date the beginning of agriculture on the basis of the rise of Cerealia pollen curve. The age obtained was too young and a control sample (Hel-1180) was taken from a charcoal layer

near the margin of the mire. The pollen stratigraphy there corresponds with that of this site. The much too young age has possibly been caused by deep penetrating roots.

Hel-1177 3320 ± 150
1370 BC

CS-peat, 1.10-1.15 m depth.
Comment(AH): Local elm decline towards the end of the Hypsithermal period, and the spread of spruce (Pc^{+}).

Hel-1178 5030 ± 160
3080 BC

CS-peat 1.525-1.575 m depth.
Comment(AH): Immigration of spruce (Pc^{o}). Almost contemporaneous with the common concept concerning the age of the boundary AT/SB with, however, no clear pollenstratigraphical changes other than Pc^{o}.

Hel-1179 8100 ± 160
6150 BC

Telmatic SC-peat, 2.35-2.40 m depth.
Comment(AH): Pine maximum slightly below the rise of Alnus curve (A^{+}). Corresponds with the stratigraphical boundary silty gyttja/telmatic peat.

Hel-1180 800 ± 130
AD 1150

Coal layer, covered by peat, 0.29 m depth.
Comment(AH): Sample taken in order to correct the obviously wrong age of the beginning of the Cerealia curve as obtained through the sample Hel-1176. This age is in good agreement with prevalent concepts concerning the age of the agriculture here, and with the peat growth curve.

Hel-1181 AUTIORANTA, SIILINJÄRVI 250 ± 120
AD 1700

6988.62 N, 523.68 E / 63°00'N, 27°26'E
Charcoal
Coll. 1977 by L. Pohjakallio. Subm. 1977 by A. Siiriäinen
Ref. Pohjakallio (1978).

KATAJAMÄKI - KETOHAKA SERIES, SALO

60°24'N, 23°08'E, 35-45 m a.s.l.

Charcoal samples from an Iron Age dwelling site area. The samples are mainly from hearths and postholes and date the period of habitation. Coll. and subm. 1978 and 1979 by C. Carpelan.

Ref. Carpelan and Jungner (1982), Uino (1982).

Hel-1182 KATAJAMÄKI 1830 ± 110
AD 120
570/694/5
Charcoal from hearth 95.

Hel-1183 KATAJAMÄKI 1940 ± 110
AD 10
558/700/6
Charcoal from posthole 48.

Hel-1184 KETOHAKA 2870 ± 120
920 BC
570/740/4
Charcoal from culture layer 201.

Hel-1185 KATAJAMÄKI 1770 ± 110
AD 180
546/682/3
Charcoal from hearth 9.

Hel-1187 KATAJAMÄKI 1800 ± 90
AD 150
530/692/3
Charcoal from hearth 2.

Hel-1188 KATAJAMÄKI 1390 ± 110
AD 560
550/682/3
Charcoal from hearth 13.
Comment(CC): See the comment for Hel-1265.

Hel-1189 KATAJAMÄKI 1780 ± 100
AD 170
570/694/4
Charcoal from hearth 95.

Hel-1190 KETOHAKA 2880 ± 130
930 BC
570/740/5
Charcoal from culture layer 201.

KATAJAMÄKI - KETOHAKA SERIES, SALO

60°24'N, 23°08'E, 35-45 m a.s.l.

Charcoal samples from an Iron Age dwelling site area. The samples are mainly from hearths and postholes and date the period of habitation. Coll. and subm. 1978 and 1979 by C. Carpelan.

Ref. Carpelan and Jungner (1982), Uino (1982).

Hel-1182 KATAJAMÄKI 1830 ± 110
AD 120
570/694/5
Charcoal from hearth 95.

Hel-1183 KATAJAMÄKI 1940 ± 110
AD 10
558/700/6
Charcoal from posthole 48.

Hel-1184 KETOHAKA 2870 ± 120
920 BC
570/740/4
Charcoal from culture layer 201.

Hel-1185 KATAJAMÄKI 1770 ± 110
AD 180
546/682/3
Charcoal from hearth 9.

Hel-1187 KATAJAMÄKI 1800 ± 90
AD 150
530/692/3
Charcoal from hearth 2.

Hel-1188 KATAJAMÄKI 1390 ± 110
AD 560
550/682/3
Charcoal from hearth 13.
Comment(CC): See the comment for Hel-1265.

Hel-1189 KATAJAMÄKI 1780 ± 100
AD 170
570/694/4
Charcoal from hearth 95.

Hel-1190 KETOHAKA 2880 ± 130
930 BC
570/740/5
Charcoal from culture layer 201.

Hel-1255 KATAJAMÄKI 2270 ± 110
320 BC
544/696/3
Charcoal from covered ditch 8 with pottery finds 7.

Hel-1256 KATAJAMÄKI 1530 ± 110
AD 420
550/684/3
Charcoal from hearth 13.
Comment(CC): See the comment for Hel-1265.

Hel-1257 KATAJAMÄKI 1970 ± 110
20 BC
550/684/3
Charcoal from hearth 12.
Comment(CC): See the comment for Hel-1265.

Hel-1258 KATAJAMÄKI 1730 ± 110
AD 220
556/692/4
Charcoal from posthole 36.

Hel-1259 KETOHAKA 2110 ± 120
160 BC
568/728/5
Charcoal from hearth 202.

Hel-1260 KATAJAMÄKI 1890 ± 110
AD 60
574/694/3
Charcoal from hearth 105.

Hel-1261 KATAJAMÄKI 1970 ± 100
20 BC
580/698/3
Charcoal from hearth 110.

Hel-1262 KATAJAMÄKI 1910 ± 110
AD 40
552-554/688-690/3
Charcoal from hearth 19.

Hel-1263 KATAJAMÄKI 2000 ± 110
50 BC
552-554/690-692/3
Charcoal from hearth 20.

Hel-1264 KATAJAMÄKI 1900 ± 110
AD 50

552-554/686/3
Charcoal from hearth 18.

Hel-1265 KATAJAMÄKI 1720 ± 110
AD 230

550/684/5
Charcoal from hearth 12.
Comment(CC): Hearth 12 is partly covered by hearth 13.

Hel-1186 KETOMÄKI, SALO 1800 ± 110
AD 150

60°24'N, 23°08'E, 55 m a.s.l.
Coll. and subm. 1978 by C. Carpelan.
Charcoal from hearth, 0.30 m depth.
Comment(CC): Dates Iron Age dwelling site.

Hel-1187 - 1190 KATAJAMÄKI - KETOHAKA SERIES Hel-1182

Hel-1191 LEBA DUNE AREA, THE NORTHERN COAST OF POLAND

Wood modern
Coll. 1978 by L. Koutaniemi and A. Rachocki.
Subm. 1978 by M. Seppälä.
Comment(MS): The sample was collected from the wind facing side of a very high and active sand dune from a dead tree on the deflation area. The idea was to date the rate of movement of the dune. Either the annual rate has been very great or the trees are killed by some other reason as passing sand dune.

Hel-1192 - 1194 SUBFOSSIL PINE SERIES Hel-807

Hel-1195 MUOJÄRVI, KUUSAMO 5690 ± 110
3740 BC

Wood, KM 20248.
Coll. 1978 by L. Tomanterä. Subm. 1978 by A. Siiriäinen.
Comment(AS): Fragment of a sledge runner found from lake bottom. On typological evidence the specimen belongs to the Comb Ceramic period which is confirmed by the dating result.

Hel-1196 KÄRENLAMPI 3110 ± 100
1160 BC

Carex-peat, 1.10 m depth.
Coll. with piston corer and subm. 1978 by A. Okko.
Comment(P Alhonen): The date is from the lower part of Carex-peat above fine detritusgyttja in the lithostratigraphy giving the age for the beginning of paludification of this small pond.

Hel-1197 - 1200 VANAJAVESI SERIES Hel-952

Hel-1201 - 1202 JÖNSAS SERIES Hel-868

SNAIL SHELL SERIES, HUNGARY

Coll. 1978 by M. Pécsi.
Shells collected to date the loess-like deposits in the Great Hungarian Plain.
Ref. Márton et al. (1979).

Hel-1203 HÓDMEZŐVÁSÁRHELY 24130 ± 460
$\delta^{13}C$=-8.0 ‰
Snail shell fragments from 3.5 m depth, a clayey-silty layer.

Hel-1204 TÖRÖKSZENTMIKLÓS 20100 ± 330
$\delta^{13}C$=-9.5 ‰
Snail shell fragments from a silty layer located at a depth of 2.7 m.

Hel-1205 MOHÁCS 21520 ± 350
$\delta^{13}C$=-8.5 ‰
Snail shell fragments from a marshy layer located at 5 m depth.

Hel-1206 TISZAFÖLDVÁR 17100 ± 240
$\delta^{13}C$=-6.3 ‰
Snail shells from a loess layer located at 1.92-2.62 m depth.

BABI DO SERIES, NORTH-POLAND

x=6018.60, y=6517.50
Coll. 1978 by L. Koutaniemi and A. Rachocki.
Subm. 1978 by L. Koutaniemi.

Comment(LK): In constructing the evolution of the landscape in the Babi Do basin two samples were dated. For ref. see Koutaniemi and Rachocki (1981).

Hel-1207 RAD II — 8410 ± 150 / 6460 BC

Wood, 1.6 m depth.

Hel-1208 RAD II — 8550 ± 120 / 6600 BC

Organic remains, 1.6 m depth.

TARUSLAMPI SERIES, SYSMÄ

60°41'N, 25°38'E, 81 m a.s.l.
Coll. 1978 by M. Eronen with a Livingstone corer.
Subm. 1979 by I. Vuorela.
Ref. Vuorela (1979, 1981).

Hel-1209 — 1360 ± 120 / AD 590

Gyttja-claygyttja, 0.55-0.60 m depth.
Comment(IV): The start of permanent agriculture according to Cerealia and weed pollen curves.

Hel-1210 — 2380 ± 140 / 430 BC

Gyttja-claygyttja, 1.29-1.47 m depth.
Comment(IV): The clay-gyttja/gyttja boundary with relative increase in Betula and loss-on-ignition curves.

KAAKOTINLAMPI SERIES, SYSMÄ

61°18'N, 25°52'E, 104.6 m a.s.l.
Coll. 1978 by M. Eronen with a Livingstone corer.
Subm. 1979 by I. Vuorela.
Ref. Vuorela (1979, 1981).

Hel-1211 — 1270 ± 130 / AD 680

Gyttja, 0.05-0.15 m depth.
Comment(IV): The start of permanent agriculture according to the Cerealia pollen curve.

Hel-1212 — 5470 ± 160 / 3520 BC

Gyttja, 0.50-0.60 m depth.

Comment(IV): The rise in Picea curve (Pc^{+}).

Hel-1213 6290 ± 160
4340 BC

Gyttja, 0.70-0.80 m depth.
Comment(IV): The rise in Tilia curve (T^{+}).

Hel-1214 6940 ± 160
4990 BC

Gyttja, 1.00-1.05 m depth.
Comment(IV): An occasional rise in Tilia, Picea and loss-on-ignition.

Hel-1215 8790 ± 120
6840 BC

Gyttja, 1.35-1.45 m depth.
Comment(IV): The rise in Alnus curve (A^{O}).

Hel-1216 8780 ± 120
6830 BC

Gyttja, 1.50-1.60 m depth.
Comment(IV): The early local Pinus P.A.Z.

Hel-1217 PÄIVÄRINNE, LUHANKA 1610 ± 90
AD 340

$61^{O}42'N$, $25^{O}32'E$, 94 m a.s.l.
Charcoal from a hearth, 17130, about 0.35 m depth.
Coll. 1965 by T. Miettinen. Subm. 1979 by H. Matiskainen.
Comment(HM): Comb Ceramic style I:1 found at the site (Matiskainen 1979).

Hel-1218 LÄHDEMÄKI, KORPILAHTI 5350 ± 100
3400 BC

$61^{O}53'N$, $25^{O}44'E$, 90 m a.s.l.
Charcoal from a hearth, 16823, about 0.40 m depth.
Coll. 1964 by T. Miettinen. Subm. 1979 by H. Matiskainen.
Comment(HM): Comb Ceramic style II:1. The date and archaeological finds are in agreement (Matiskainen 1979).

ISOSUO SERIES, KLAUKKALA

Coll. 1977 with a piston corer and subm. 1979 by V. Saaritsa.
General comment(P Alhonen): The datings give data on the discovered tephra-horizons in the bog stratigraphy probably corresponding to the certain eruptions of Hekla in Iceland.

Hel-1219 1900 ± 90
AD 50
Peat, 1.10-1.12 m depth.

Hel-1220 2800 ± 100
850 BC
Peat, 2.50-2.52 m depth.

Hel-1221 3100 ± 120
1150 BC
Peat, 2.86-2.92 m depth.

MUSTALAMPI SERIES, NUUKSIO

60°17'25"N, 24°39'18"E, 61.4 m a.s.l.
Ref. Eronen and Haila (1982).

Hel-1222 8300 ± 120
6350 BC
Gyttja, 5.70-5.80 m depth.
Comment(ME): Lake sediment deposited after the Ancylus transgression. The beginning of Alnus pollen curve.

Hel-1223 9410 ± 170
7460 BC
Gyttja, 5.85-6.00 m depth.
Comment(ME): The end of the Ancylus transgression. The date is obviously hundreds of years too old.

Hel-1224 9490 ± 180
7540 BC
Clay-gyttja, 6.00-6.15 m depth.
Comment(ME): A layer deposited during the Ancylus transgression.

Hel-1225 9780 ± 200
7830 BC
Clay-gyttja, 6.20-6.35 m depth.
Comment(ME): The beginning of the Ancylus transgression. The boundary between Betula/Pinus regional pollen assemblage zones. The date is obviously too old.

Hel-1226 10130 ± 190
8180 BC
Clay-gyttja, 6.45-6.60 m depth.
Comment(ME): The isolation of the basin below the Ancylus transgression. The date is probably too old.

Hel-1227 FÄNGKÄRRSBERGET, KARJAA 180 ± 90
AD 1770

60°08'N, 23°46'E
Charcoal, KM 20089.
Coll. 1977 by A. Sarvas. Subm. 1978 by A. Siiriäinen.
Comment(AS): A burial cairn of the Bronze Age type. The dating result might reflect later activity in the vicinity of the site. The area has been used as a meeting place in recent times.

Hel-1228 KANTTORINMÄKI, NUMMI, TURKU 1920 ± 100
AD 30

6706.20 N, 571.30 E / 60°27'N, 22°18'E
Charcoal, 0.60 m depth.
Coll. 1977 by S. Sarkki. Subm. 1978 by A. Siiriäinen.
Comment(SS): Habitation site with Late Neolithic artefacts, thus the dating result refers to a later occupation at the site.

KÄRSÄMÄKI SERIES, TURKU

60°28'N, 22°17'E
Coll. 1977 by S. Sarkki. Subm. 1978 by A. Siiriäinen.
General comment(SS): Habitation site with typical Comb Ware. Thus the result of Hel-1229 belongs to this context while that of Hel-1230 refers to a later occupation at the site.

Hel-1229 4790 ± 90
2840 BC

6709.15N, 570.84 E
Charcoal from a hearth, 0.60 m depth.

Hel-1230 2170 ± 90
220 BC

6709.12N , 570.82 E
Charcoal, 0.50 m depth.

SAMPLES FROM AHKIO-SLEDS

Coll. by E. Naskali. Subm. 1978 by A. Siiriäinen.

Hel-1231 HAUKILAHTI, JOUTSENO 360 ± 90
AD 1590

Wood, EKM 4699.

Hel-1232 KITKAJÄRVI, KUUSAMO 360 ± 90
AD 1590

Wood

Hel-1236 KIHNIÖ 830 ± 90
AD 1120

Wood, MVKTE 10486.

Hel-1233 SKI SERIES Hel-803

Hel-1234 RAASEPORI, TAMMISAARI 420 ± 90
AD 1530

6658.04 N, 313.31 E, about 1.5 m a.s.l.
Wood from a post in the entrenchment at the castle.
Coll. 1978 by M. Raatikainen. Subm. 1978 by A. Siiriäinen.

Hel-1235 SKI SERIES Hel-803

Hel-1236 SAMPLES FROM AHKIO-SLEDS Hel-1231

Hel-1237 SKI SERIES Hel-803

PERÄLAMPI SERIES, KUUSAMO

7322 N, 599 E / 65°59'N, 29°15'E, 254 m a.s.l.
Coll. 1975 by M. Hicks with a Livingstone corer.
Subm. 1979 by S. Hicks.

Hel-1238 1970 ± 140
20 BC

Sandy gyttja, 5.98-6.09 m depth.
Comment(SH): This sample was taken to date a phase of minor agricultural activity indicated in the pollen stratigraphy by slight increase in Gramineae values and the presence of a few pollen grains of Cerealia type. Because of the low organic content of the sediment the sample covers a wide depth range and covers virtually the whole of the phase rather than pinpointing its commencement (see also comments on Hel-1269).

Hel-1269 1640 ± 110
AD 310

Sandy gyttja, 5.45-5.60 m depth.
Comment(SH): Like sample Hel-1238 this was taken to date

a phase of agricultural activity of which there are similar slight indications in the pollen stratigraphy. For this sample, too, the depth range of sediment is great and the date refers to the phase in question. On the basis of the pollen stratigraphy and with reference to date Hel-1238, this date is much older than anticipated. If the two dates are taken together then the rate of accumulation for the lower part of the sediment is nearly six times greater than in the upper part. However, pollen concentration values are at least twice as high in the lower part of the diagram than in the upper which is the direct opposite of what would be expected if the rate of accumulation suddenly slowed down. Neither is there any lithological change that would suggest a changed accumulation rate. From the pollen stratigraphical point of view, if this slight agricultural phase is as old as 1640 BP then one would expect to find indications of a more major phase above this corresponding to the historically documented commencement of farming around 300-350 BP, but this is not so. In view of this it seems quite possible that both Hel-1238 and Hel-1269 may be giving too old values.

METSOLANSUO SERIES, KORSO

60°20'57"N, 25°06'28"E, 45.2 m a.s.l.
Coll. 1978 and subm. 1979 by M. Eronen.
Ref. Eronen and Haila (1982).

Hel-1239 — 8490 ± 120 / 6540 BC

Peat, 1.44-1.49 m depth.
Comment(ME): Peat formed after isolation of basin from the Baltic. Rise of the Alnus pollen curve.

Hel-1240 — 8570 ± 190 / 6620 BC

Gyttja, 1.49-1.54 m depth.
Comment(ME): Isolation of the basin from the Baltic.

PYHÄJÄRVI SERIES

A. MANNILANLAHTI, EURA

61°01'10"N, 22°11'02"E, level of the lake about 45 m a.s.l.
Coll. and subm. 1979 and 1980 by O. Heikkinen, M. Tikkanen and M. Eronen.
Ref. Eronen et al. (1982).

Hel-1241 — 7970 ± 170 / 6020 BC
Bryales peat layers in silt, 8.10-8.30 m depth.
Comment(ME): Sediment deposited before the beginning of the Litorina Sea stage, and the mosses give the age of this layer.

Hel-1390 — 7870 ± 140 / 5920 BC
Silt with sand and some organic matter, 8.00-7.85 m depth.
Comment(ME): Sediment deposited just before the beginning of the Litorina Sea stage.

Hel-1391 — 7420 ± 120 / 5470 BC
Clay-gyttja, 7.85-7.70 m depth.
Comment(ME): Sediment deposited in brackish water in the beginning of the Litorina Sea stage.

Hel-1392 — 5680 ± 120 / 3730 BC
Gyttja-clay, 4.90-4.80 m depth.
Comment(ME): Sediment deposited in brackish water just before the isolation of the basin from the Litorina Sea.

Hel-1393 — 5580 ± 120 / 3630 BC
Gyttja-clay, 4.80-4.70 m depth.
Comment(ME): Sediment deposited in fresh water just after isolation of the basin from the Litorina Sea.

Hel-1394 — 4320 ± 130 / 2370 BC
Clay-gyttja, 2.60-2.50 m depth.
Comment(ME): The beginning of the rise of the Picea pollen curve. Compared to other dates of Picea curves in this area the date seems to be somewhat too old.

Hel-1395 4020 ± 130
2070 BC

Clay-gyttja, 2.50-2.40 m depth.

Comment(ME): Rise of the Picea pollen curve. Compared to other dates of Picea curves in this area the date seems to be somewhat too old.

B. YLÄNE

60°54'10"N, 22°23'33"E, 45 m a.s.l.

Coll.1978 and subm. 1979 by O. Heikkinen, M. Tikkanen and M. Eronen.

Ref. Eronen et al. (1982).

Hel-1242 3070 ± 100
1120 BC

Peat, 1.20-1.23 m depth.

Comment(ME): Upper part of a peat layer underlying a sand deposit. The peat was covered by sand during the transgression caused by uneven landuplift in the southern part of Lake Pyhäjärvi.

Hel-1243 3950 ± 110
2000 BC

Peat, 1.47-1.50 m depth.

Comment(ME): Lower part of a peat layer underlying a sand deposit. The peat was covered by sand during the transgression caused by uneven landuplift in th southern part of Lake Pyhäjärvi.

Hel-1244 660 ± 110
AD 1290

Peat, about 0.80 m below water surface.

Comment(ME): A thin peat layer covered by sand, below the water level in the southern part of Lake Pyhäjärvi. This peat layer is not directly connected with the water level fluctuations of the lake.

Hel-1360 (SE-end) 780 ± 110
AD 1170

60°54'10"N, 22°23'30"E

Peat, 0.40-0.45 m depth.

Comment(ME): Peat from a former shore bank of Lake Pyhäjärvi at the edge of a raised bog.

Hel-1361 (SE-end) 2600 ± 100
650 BC

Peat, 1.45-1.50 m depth.

Comment(ME): Basal peat of a raised bog, under a former shoreline of Lake Pyhäjärvi.

LIIPPASUO SERIES, KUUSAMO

7337.02 N, 471.73 E
Coll. 1977 by L. Koutaniemi and M. Seppälä.
Subm. 1979 by L. Koutaniemi.
Comment(LK): Development of strings and ponds in a aapa-mire was the main idea in dating several peat horizons in the studied bog.

Hel-1245 8040 ± 180
6090 BC

Peat, 3.00-3.05 m depth.

Hel-1246 7310 ± 180
5360 BC

Peat, 2.76-2.80 m depth.

Hel-1247 6390 ± 160
4440 BC

Peat, 2.44-2.48 m depth.

Hel-1248 7640 ± 160
5690 BC

Peat, 3.30-3.34 m depth.

Hel-1249 4830 ± 90
2880 BC

Peat, 1.86-1.94 m depth.

Hel-1250 3940 ± 140
1990 BC

Peat, 1.46-1.50 m depth.

Hel-1251 3120 ± 130
1170 BC

Peat, 0.94-1.02 m depth.

Hel-1252 - 1254 OULANKA SERIES Hel-854

Hel-1255 - 1265 KATAJAMÄKI - KETOHAKA SERIES Hel-1182

ODILAMPI SERIES, ESPOO

60°18'N, 24°46'E, 34.9 m a.s.l.
Subm. 1979 by H. Hyvärinen.

Ref. Hyvärinen (1980).

Hel-1266 8010 ± 120
6060 BC

Gyttja, 5.85-6.00 m depth.
Comment(HH): Odilampi series relates to studies in relative sea-level changes near Helsinki. The sample dates the isolation of the lake from the Ancylus lake.

Hel-1267 7370 ± 110
5420 BC

Gyttja, 4.95-5.10 m depth.
Comment(HH): Control sample for Hel-1266. Small-lake sediment 90 cm above the isolation contact. Dates the rational limit of Tilia (T^{o}).

Hel-1268 6390 ± 110
4440 BC

Gyttja, 4.00-4.15 m depth.
Comment(HH): Control sample for Hel-1266 and Hel-1267. Small-lake sediment 1.85 m above the isolation contact.

Hel-1269 PERÄLAMPI SERIES Hel-1238

LAGO GUZMAN, JALISCO, MEXICO

$19^{o}40'$N, $103^{o}30'$W
Coll. 1979 by B. Fine and V. Markgraf.
Subm. 1979 by V. Markgraf.

Hel-1270 530 ± 130
AD 1420

Dark gray clay, 0.34-0.35 m depth.

Hel-1271 950 ± 100
AD 1000

Dark brown peat, 0.41-0.42 m depth.

Hel-1272 KAPPELINPELTO, JUVA 480 ± 90
AD 1470

$61^{o}48'30"$N, $27^{o}32'$E
Charred wood, KM 19227:16, about 0.55 m depth.
Coll. 1973 by M. Huurre. Subm. 1979 by A. Siiriäinen.
Comment(MH): According to tradition a church and a burial ground may have situated on this place. During excavations more than ten graves have been found but no archaeologically

dateable objects. The loss of object points towards Christian time. The sample is taken from the board of a coffin.

Hel-1273 20592/3 7030 ± 240
5080 BC

Charcoal, about 0.40 m depth.
Coll. 1979 by M. Torvinen. Subm. 1979 by A. Siiriäinen.

Hel-1274 TÖRMÄVAARA, TERVOLA 1150 ± 90
AD 800

66°07'N, 24°43'E
Charcoal, KM 20611, about 0.40 m depth.
Coll. 1979 by L. Ruonavaara. Subm. 1979 by A. Siiriäinen.
Comment(AS): There are no archaeological evidence for habitation at the site during the period indicated by the results. All the artefacts belong to Middle Neolithic period.

Hel-1275 GaJj II modern

03°85'N, 36°23.5'E, Area 127
Freshwater shell from Etheria (oyester reef) exposed shellbed.
Coll. and subm. 1979 by J. Barthelme.
Comment(JB): Sample derived from a large continuous off shore freshwater oyester bar. An archaeological site (GaJj II) lies to the south east some 150 meters distant. A previous dating of the oyester reef also yielded a modern age (GX-5477).

Hel-1276 8920 ± 130
6970 BC

03°86'N, 36°14.5'E, Area 102
Snails, embayment of diatomaceous silts.
Coll. and subm. 1979 by J. Barthelme.
Comment(JB): Unit with molluscs is lateral to beach sand with archaeological site (GaJj).

Hel-1277 9110 ± 130
7160 BC

Pieces of shells from sample Hel-1276.

Hel-1278 - 1280 OULANKA SERIES Hel-1276

LAIHALAMPI SERIES, NUUKSIO

60°15'14"N, 24°36'26"E, water level 56.8 m a.s.l.
Coll. 1978 and subm. 1979 by M. Eronen.
Ref. Eronen and Haila (1982).

Hel-1281 — 9020 ± 120 / 7070 BC
Clay-gyttja, 5.60-5.75 m depth.
Comment(ME): The rise of the Alnus pollen curve. The date is hundreds of years too old.

Hel-1282 — 9470 ± 120 / 7520 BC
Clay-gyttja, 5.80-5.95 m depth.
Comment(ME): The beginning of the Alnus pollen curve. The date is obviously hundreds of years too old.

Hel-1283 — 9180 ± 180 / 7230 BC
Clay-gyttja, 6.00-6.12 m depth.
Comment(ME): Isolation of the basin after the Ancylus transgression.

Hel-1284 — 9730 ± 210 / 7780 BC
Clay-gyttja, 6.20-6.35 m depth.
Comment(ME): Layer deposited during the Ancylus transgression. The boundary between Betula/Pinus regional pollen assemblage zones. The date is obviously too old.

Hel-1285 — 10100 ± 210 / 8150 BC
Clay-gyttja, 6.35-6.50 m depth.
Comment(ME): Layer deposited before the Ancylus transgression. The date is obviously too old.

Hel-1286 LOHIRANTA, POSIO — 5490 ± 140 / 3540 BC
66°01'N, 28°30'E, 250 m a.s.l.
Charcoal from a buried soil horizon in a dune, 0.30 m depth.
Coll. and subm. 1979 by Y. Vasari.
Comment(YV): Dating of a deflation phase in the local history of inland dunes.

Hel-1287 KERAVA modern

Bone found from a gravel pit.
Subm. 1979 by P. Alhonen.

Hel-1288 KALMASAARI, JOROINEN modern

62°13'30"N, 27°36'E
Human bone, KM 20579.
Coll. by M. Suhonen. Subm. 1979 by A. Siiriäinen.
Comment(M Huurre): The name of the place indicates that it may have been used as a burial ground but no other finds then the grave from which the sample was taken have been made.

NUKKUMAJOKI SERIES, INARI

68°53'N, 27°05'E, 132 m a.s.l.
Coll. 1978 and subm. 1979 by C. Carpelan.
General comment(CC): The samples are reindeer bone from refuse heaps at an ancient lapp winter village. They represent short lived material and compared to charcoal and wood a more accurate date of the habitation.

Hel-1289 260 ± 90
AD 1690

Bone between humus and mineral soil, KM 20278:42.

Hel-1290 270 ± 120
AD 1680

Bone between humus and mineral soil, KM 20278:74.

Hel-1291 - 1294 LAUHANVUORI SERIES Hel-859

CULLENDULLA CREEK EMBAYMENT, NEW SOUTH WALES, AUSTRALIA

35°42'S, 150°12'E
Coll. and subm. 1979 and 1980 by J. Donner.
General comment(JD): The series of shell samples from near present sea level were dated in order to study the accuracy by which shell dates can be used in dating relative sea level changes and in the study of mollusc assemblages in shell beds.

Three ages are for shells from a midden on a beach ridge.
Ref. Donner and Jungner (1981).

Hel-1295	2180 ± 100 230 BC
1. Notospisula parva.	$\delta^{13}C$=+2.06 ‰
Hel-1296	1250 ± 90 AD 700
1. Anadara trapezia.	$\delta^{13}C$=+1.03 ‰
Hel-1297	1570 ± 90 AD 380
1. Pyrazus ebeninus.	$\delta^{13}C$=+2.28 ‰
Hel-1298	1360 ± 90 AD 590
1. Ostrea angasi.	$\delta^{13}C$=+2.18 ‰
Hel-1299	2380 ± 80 430 BC
2. Notospisula parva.	$\delta^{13}C$=+1.98 ‰
Hel-1300	1570 ± 110 AD 380
2. Anadara trapezia.	$\delta^{13}C$=+0.38 ‰
Hel-1301	3160 ± 100 1210 BC
3. Notospisula parva.	$\delta^{13}C$=+2.18 ‰
Hel-1302	2020 ± 120 70 BC
4. Notospisula parva.	$\delta^{13}C$=+1.06 ‰
Hel-1320	2470 ± 90 520 BC
5. Notospisula parva.	$\delta^{13}C$=+1.34 ‰
Hel-1321	630 ± 90 AD 1320
5. Mytilus planulatus.	$\delta^{13}C$=+0.98 ‰
Hel-1322	1870 ± 90 AD 80
6. Notospisula parva.	$\delta^{13}C$=+1.25 ‰

Hel-1323 — 350 ± 90
AD 1600
7. Notospisula parva, from young beach ridge. — $\delta^{13}C$=+1.71 ‰

Hel-1354 — 1930 ± 100
AD 20
2. Pyrazus ebeninus. — $\delta^{13}C$=+2.10 ‰

Hel-1355 — 700 ± 100
AD 1250
5. Polinices aulacoglossa. — $\delta^{13}C$=+0.77 ‰

Hel-1356 — 820 ± 90
AD 1130
Anadara trapezia, midden. — $\delta^{13}C$=-0.29 ‰

Hel-1357 — 820 ± 90
AD 1130
Pyrazus ebeninus, midden.

Hel-1358 — 830 ± 90
AD 1120
Ostrea angasi, midden. — $\delta^{13}C$=-0.13 ‰

Hel-1359 — 620 ± 100
AD 1330
5. Mytilus planulatus (Hel-1321). — $\delta^{13}C$=+2.46 ‰

Hel-1303 ANTREA, KORPILAHTI — 9310 ± 140
7360 BC
Bark from a float, bog find, KM 6688.
Coll. 1913 by S. Pälsi.Subm. 1979 by A. Siiriäinen.
An earlier submitted sample (1972 by V. Luho) revealed a date of 9230±210 (Hel-269).

Hel-1304 - 1309 OULANKA SERIES Hel-854

VANUTEHTAANMÄKI SERIES, SALO

9915.8 N, 525.20 E / 60°23'N, 23°08'E
Coll. and subm. 1979 by E. Linturi.
General comment(A Siiriäinen): An Early Iron Age habitation site with traces of house constructions, close to a large site complex containing habitation areas and burials. The dating

results, with numerous other results (see Katajamäki - Ketohaka series Hel-1182), confirm the occupation period of the whole site complex as ca. 2300 to 1300 BP.

Hel-1310 20610-1 1630 ± 90
AD 320
Charcoal from pit, 0.40-0.60 m depth.

Hel-1311 20610-2 1650 ± 90
AD 300
Charcoal from a hearth, about 0.30 m depth.

LUISTARI SERIES, EURA

61°05'N, 22°10'E
Coll. 1975 by P-L. Lehtosalo-Hilander.
Subm. 1979 by A. Siiriäinen.
Ref. Lehtosalo-Hilander (1982a, 1982b).

Hel-1312 350 ± 110
AD 1600
6779.05 N, 562.20 E, about 32 m a.s.l.
Wood, KM 19877:15, about 0.40 m depth.
Comment(P-LL-H): The sample is from a post found in clay underneath the remains of houses dated to the 16th century.

Hel-1383 2510 ± 120
560 BC
6778.71 N, 561.99 E, about 38 m a.s.l.
Charcoal from a cairn, KM 20552:242, about 0.30 m depth.
Comment(P-LL-H): The construction of the cairn as well as the ceramics found suggest an archaeological date in good agreement with the radiocarbon date obtained.

GÅSGÅRDSTRÄSKET SERIES, PORVOO

60°21'29"N, 25°47'44"E, water level 25 m a.s.l.
Coll. 1978 and subm. 1979 by M. Eronen.

Hel-1313 4850 ± 140
2900 BC
Gyttja, 4.70-4.80 m depth.
Comment(ME): Final disappearance of the Brackish-water diatoms after the isolation of the basin from the Litorina Sea.

Hel-1314 5750 ± 100
3800 BC

Gyttja, 5.10-5.20 m depth.
Comment(ME): Gyttja deposited after isolation of the basin from the Litorina Sea.

Hel-1315 5660 ± 130
3710 BC

Gyttja, 5.20-5.30 m depth.
Comment(ME): The end phase of the isolation of the basin from the Litorina Sea.

Hel-1316 5770 ± 140
3820 BC

Gyttja, 5.30-5.40 m depth.
Comment(ME): The beginning phase of the isolation of the basin from the Litorina Sea.

Hel-1317 6140 ± 150
4190 BC

5.40-5.50 m depth.
Comment(ME): Brackish-water sediment deposited in the Litorina Sea just before of the isolation of the basin.

Hel-1318 6510 ± 160
4560 BC

6.20-6.30 m depth.
Comment(ME): The rise of the Tilia pollen curve, T^{o}.

Hel-1319 6250 ± 160
4300 BC

6.80-6.90 m depth.
Comment(ME): Sediment deposited in the Litorina Sea. The date is obviously too young.

Hel-1320 - 1323 CULLENDULLA CREEK EMBAYMENT Hel-1295

SEASPRAY, VICTORIA, AUSTRALIA

Section: $38^{o}22'S$, $147^{o}13'E$
Present beach: $38^{o}22'N$, $147^{o}12'E$
Coll. and subm. 1979 by J. Donner.
General comment(JD): The shell samples from Seaspray date the upper shell bed inside the barrier whereas the samples from the present beach show that there is a mixture of shell

fragments of different species in the high energy beach sands (Donner and Jungner 1981).

Hel-1324	5200 ± 110
	3250 BC
Notospisula parva	$\delta^{13}C$=+1.00 ‰
Hel-1325	4770 ± 120
	2820 BC
Katelysia rhytiphora	$\delta^{13}C$=+1.46 ‰
Hel-1326	4500 ± 120
	2550 BC
Anadara trapezia	$\delta^{13}C$=+1.22 ‰
Hel-1327	4700 ± 120
	2750 BC
Ostrea angasi	$\delta^{13}C$=+2.73 ‰
Hel-1351	8110 ± 130
	6160 BC
Anadara trapezia	$\delta^{13}C$=+0.38 ‰
Hel-1352	4080 ± 100
	2130 BC
Fulvia tennicostata	$\delta^{13}C$=+3.14 ‰
Hel-1353	290 ± 90
	AD 1660
Plebidonax	$\delta^{13}C$=+1.73 ‰

Hel-1328 - 1331 SKI SERIES Hel-803

Hel-1332 - 1335 PERÄPOHJOLA SERIES Hel-781

KITKANJOKI SERIES, NORTH-EASTERN FINLAND

Coll. and subm. 1979 by L. Koutaniemi.
Organic deposits of basal horizons in palaeochannels of various height in the Kitkanjoki valley. Dating of channels has been used in determining palaeocurrents of different age since the deglaciation. For Hel-1339-1341, see Koutaniemi (1981a).

Hel-1336 — 2110 ± 130 / 160 BC

7353.99 N, 483.40 E
1.17-1.20 m depth.

Hel-1337 — 2120 ± 190 / 170 BC

7353.95 N, 483.40 E
2.07-2.10 m depth.

Hel-1338 — 2160 ± 110 / 210 BC

7354.04 N, 483.36 E
0.68-0.70 m depth.

Hel-1339 — 4710 ± 150 / 2760 BC

7353.61 N, 482.54 E
2.86-2.90 m depth.

Hel-1340 — 5170 ± 160 / 3220 BC

7353.70 N, 482.42 E
0.87-0.90 m depth.

Hel-1341 — 4960 ± 140 / 3010 BC

7353.7 N, 482.42 E
0.97-1.00 m depth.

Hel-1342 - 1345 SKI SERIES Hel-803

NÄSTINRISTI SERIES, LAITILA

Coll. 1979 by L. Väkeväinen. Subm. 1979 by A. Siiriäinen.

Hel-1346 — 4740 ± 100 / 2790 BC

Charcoal, KM 20606 (sample 1), about
0.50 m depth.

Hel-1347 — 4710 ± 100 / 2760 BC

Charcoal, KM 20606 (sample 2), about
0.50 m depth.

Hel-1348 4460 ± 130
2510 BC

Charcoal, KM 20606 (sample 3), about 0.60 m depth.

Hel-1349 4910 ± 130
2960 BC

Charcoal, KM 20606, about 0.50 m depth.

Hel-1350 4850 ± 130
2900 BC

Charcoal, KM 20606, about 0.50 m depth.

Hel-1351 - 1353 SEASPRAY Hel-1324

Hel-1354 - 1359 CULLENDULLA CREEK EMBAYMENT Hel-1295

Hel-1360 - 1361 PYHÄJÄRVI SERIES Hel-1241

Hel-1362 - 1363 KETOHAKA SERIES Hel-1110

Hel-1364 - 1367 LAUHANVUORI SERIES Hel-859

Hel-1368 FINSPÅNG 275 2380 ± 80

Cross check, treatment and dating 1980.
Peat, fraction insoluble in NaOH dated.
St-6398: 2425 ± 90 (humus).
St-6399: 2275 ± 90 (insoluble).

Hel-1369 FINSPÅNG 310 3090 ± 80

Cross check, treatment and dating 1980.
Wood, sample treated with HCl only.
St-6444: 3010 ± 90 (untreated).
St-6449: 3180 ± 90 (treated with NaOH).

IIDESJÄRVI SERIES, TAMPERE

61°29'N, 23°50'E, 77 m a.s.l.
Coll. 1979 with a Livingstone sampler and subm. 1980 by P. Alhonen.
General comment(PA): The following datings on organic sediments of a small eutrophic lake provide data on its isolation

(emergence), sedimentation rate, biostratigraphy and environmental history. The most important dates are Hel-1370 for the beginning of the continuous curve of Cerealia type pollen, Hel-1371 for the beginning of the Sub-Atlantic Chronozones, Hel-1375 for the rational limit of Picea, and Hel-1379 for emergence (isolation) of the basin from the Ancylus Lake (according to diatom stratigraphy). This age is, however, too young because of a hiatus between banded sulphide clay and clay-gyttja (Alhonen 1981).

Hel-1370	2220 ± 130 270 BC
Gyttja, 0.50-0.60 m depth.	
Hel-1371	2610 ± 130 660 BC
Gyttja, 0.90-1.00 m depth.	
Hel-1372	3540 ± 140 1590 BC
Gyttja, 1.20-1.30 m depth.	
Hel-1373	3750 ± 110 1800 BC
Gyttja, 1.50-1.60 m depth.	
Hel-1374	4110 ± 110 2160 BC
Gyttja, 1.70-1.80 m depth.	
Hel-1375	4040 ± 110 2090 BC
Gyttja, 1.90-2.00 m depth.	
Hel-1376	5180 ± 100 3230 BC
Gyttja, 2.40-2.50 m depth.	
Hel-1377	5390 ± 140 3440 BC
Gyttja, 3.00-3.08 m depth.	
Hel-1378	5590 ± 90 3640 BC
Gyttja, 3.20-3.30 m depth.	
Hel-1379	6570 ± 140 4620 BC
Gyttja, 3.50-3.60 m depth.	

KRAVIOJA SERIES, KOKEMÄKI

Coll. 1979 by T. Heikkurinen. Subm. 1979 by A. Siiriäinen.
Charcoal samples from a Stone Age dwelling place.

Hel-1380 — 6060 ± 170 / 4110 BC
20584/Area I/1
Charcoal from a hearth, about 0.40 m depth.

Hel-1381 — 5310 ± 110 / 3360 BC
20584/Area I/2
Charcoal, about 0.40 m depth.

Hel-1382 — 5550 ± 100 / 3600 BC
20584/Area II
Charcoal, about 0.40 m depth.

Hel-1383 LUISTARI SERIES Hel-1312

AUTIOKENTTÄ SERIES, SODANKYLÄ

7513.21 N, 491.50 E / 67°42'N, 26°50'E, 197 m a.s.l.
Coll. 1979 by P. Honkanen. Subm. 1979 by A. Siiriäinen.
General comment(PH): Samples Hel-1384 and Hel-1385 are from different planks of a cottage floor within the Lappish dwelling site. Hel-1386 is from a hut within the same site. The date yielded by Hel-1385 is in good agreement with the archaeological dating of the site.

Hel-1384 — modern
20585/I
0.10 m depth

Hel-1385 — 310 ± 130 / AD 1640
20585/II

Hel-1386 — modern
20585/IV

Hel-1387 - 1389 SUBFOSSIL PINE SERIES Hel-807

Hel-1390 - 1395 PYHÄJÄRVI SERIES Hel-1241

OULUJÄRVI SERIES

Coll. and subm. 1979 by L. Koutaniemi.
General comment(LK): Wood and peat samples from different depths of the Oulujärvi Lake. The main problem to be solved is the transgressive evolution of the lake.

Hel-1396 ENONLAHTI modern

64°22.4'N, 26°45.5'E
Wood, 4 m below water level.

Hel-1397 ENONLAHTI 460 ± 130
AD 1490
Wood, 4.1 m below water level.

Hel-1398 KURUNSUO 7120 ± 130
5170 BC
64°20.3'N, 27°04.5'E
Humified peat, 0.465-0.490 m depth.

Hel-1399 KAARESJÄRVI 3700 ± 130
1750 BC
64°24.6'N, 27°05'E
Sandy peat from the isthmus between Oulujärvi and Kaaresjärvi, 1.415-1.515 m depth.

Hel-1400 RYTÖLAHTI 3420 ± 120
1470 BC
64°20'N, 27°05.3'E
Humified peat, 0.38-0.45 m depth.

INDEX

A. ARCHAEOLOGICAL SAMPLES

THE NATIONAL BOARD OF ANTIQVITIES

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1054-1058	Torronsuo, Tammela
1059	Kortejärvi, Urjala
1077	Summasjärvi, Saarijärvi
1078	Kaatamo, Liperi
1079	Säräisniemi, Vaala
1080	Finström, Aaland
1093	Koiralamminsuo, Lamminsalo, Rääkkylä
1095	Kymenranta, Kuusankoski
1096	Noormarkku
1097	Siilinjärvi
1143	Trollberg, Houtskari
1164-1166	Pyheensilta, Mynämäki
1167-1170	Finström, Aaland
1181	Autioranta, Siilinjärvi
1195	Muojärvi, Kuusamo
1217	Päivärinne, Luhanka
1218	Lähdemäki, Korpilahti
1227	Fängkärrsberget, Karjaa
1228	Kanttorinmäki, Nummi, Turku
1229-1230	Kärsämäki, Turku
1231	Haukilahti, Joutseno
1232	Kitkajärvi, Kuusamo
1233	Äkäslompolo, Kolari
1234	Raasepori, Tammisaari
1235	Hämälänmäki, Puumala
1236	Kihniö
1237	Posio
1272	Kappelinpelto, Juva
1273	20592/3
1274	Törmävaara, Tervola
1275-1277	GaJj,
1288	Kalmasaari, Joroinen
1303	Antrea, Korpilahti
1310-1311	Vanutehtaanmäki, Salo
1312	Luistari, Eura
1328	Posio
1329	Sysmä

1330	Salla
1331	Pielisjärvi
1342	Virrat
1343	Lappi Tl
1344	Tyrvää
1345	Katila, Kangasala
1346-1350	Nästinristi, Laitila
1380-1382	Kravioja, Kokemäki
1383	Luistari, Eura
1384-1386	Autiokenttä, Sodankylä

DEPARTMENT OF ARCHAEOLOGY, UNIVERSITY OF HELSINKI

Hel-	
856	Ruunapäänniemi, Sulkava
1182-1183	Katajamäki, Salo
1184	Ketohaka, Salo
1185	Katajamäki, Salo
1186	Ketomäki, Salo
1187-1189	Katajamäki, Salo
1190	Ketohaka, Salo
1255-1258	Katajamäki, Salo
1259	Ketohaka, Salo
1260-1265	Katajamäki, Salo
1289-1290	Nukkumajoki, Inari

DEPARTMENT OF HISTORY, UNIVERSITY OF OULU

Hel-	
817-820	Kainuunkylä, Kannala, Ylitornio

B. SAMPLES FROM OTHER SUBMITTERS

AALTO, M.

Hel-	
1092	Thrupp House Farm, England
1201-1202	Jönsas, Vantaa

AARTOLAHTI, T.

Hel-	
1060-1061	Yyteri
1062	Kalajoki

ALESTALO, J.

Hel-	
891	Kokkojärvi, Manamansalo, Vaala

ALHONEN, P.

Hel-	
674	Työtjärvi, Hollola
737-740	Työtjärvi, Hollola
770-773	Työtjärvi, Hollola
823-826	Varrassuo, Hollola
827-830	Työtjärvi, Hollola
838-841	Varrassuo, Hollola
846	Varrassuo, Hollola
847-850	Työtjärvi, Hollola
863-866	Varrassuo, Hollola
908-911	Varrassuo, Hollola
923-928	Varrassuo, Hollola
996-1000	Lammaslampi, Vantaa
1287	Kerava
1370-1379	Iidesjärvi, Tampere

DONNER, J.

Hel-	
674	Työtjärvi, Hollola
737-740	Työtjärvi, Hollola
770-773	Työtjärvi, Hollola
823-826	Varrassuo, Hollola
827-830	Työtjärvi, Hollola
838-841	Varrassuo, Hollola
846	Varrassuo, Hollola
847-850	Työtjärvi, Hollola
863-866	Varrassuo, Hollola

901	Nordfjord, Disko, West Greenland
902	Ungussivik, Disko, West Greenland
903-904	Qivitut, Disko, West Greenland
905-907	Ikineq, Disko, West Greenland
908-911	Varrassuo, Hollola
923-928	Varrassuo, Hollola
945	Ikineq, Disko, West Greenland
1073-1074	Herttoniemi
1075	Lohtaja
1076	Espoo
1098	Burn of Benholm, Kincardineshire, Scotland
1295-1302	Cullendulla Creek Embayment, New South Wales, Australia
1320-1323	Cullendulla Creek Embayment, New South Wales, Australia
1324-1327	Seaspray, Victoria, Australia
1351-1353	Seaspray, Victoria, Australia
1354-1359	Cullendulla Creek Embayment, New South Wales, Australia

ERONEN, M.

Hel-	
674	Työtjärvi, Hollola
737-740	Työtjärvi, Hollola
770-773	Työtjärvi, Hollola
807	Tsarsejokskaidi
808	Lohikoste
821-822	Lohikoste
823-826	Varrassuo, Hollola
827-830	Työtjärvi, Hollola
833-834	Ailigasjärvi
835-836	Keässemahjohka
837	Petsikko
838-841	Varrassuo, Hollola
846	Varrassuo, Hollola
847-850	Työtjärvi, Hollola
863-866	Varrassuo, Hollola
908-911	Varrassuo, Hollola
912-914	Näkkälä, Enontekiö
915	Tsohkkajavri, Enontekiö
916-918	Haukijärvet, Enontekiö
919	Pättikkä, Enontekiö

923-928 Varrassuo, Hollola
996-1000 Lammaslampi, Vantaa
1063-1064 Pikkuvaaran lompolo
1065 Ailakkavaaran lompolo
1066 Peeravaaran lompolo
1067-1068 Vallijärvi
1124-1125 Malmträsket, Porvoo
1147-1148 Joupinkylä, Seinäjoki
1192-1194 Ailakkavaaran lompolo
1222-1226 Mustalampi, Nuuksio
1239-1240 Metsolansuo, Korso
1241 Mannilanlahti, Pyhäjärvi
1242-1244 Yläne, Pyhäjärvi
1281-1285 Laihalampi, Nuuksio
1313-1319 Gåsgårdsträsket, Porvoo
1360-1361 Yläne, Pyhäjärvi
1387-1389 Vallijärvi
1390-1395 Mannilanlahti, Pyhäjärvi

FORSTÉN, A.

Hel-
811 Alajoki, Lapua

GLÜCKERT, G.

Hel-
764 Degermossa, Brändö, Aaland
765 Heikinsaarensuo, Yläne
766 Jänessuo, Yläne
767 Hiittenmäensuo, Halikko
768 Degermossa, Brändö, Aaland
879 Bredmossen, Geta, Aaland
880 Signildskrubba, Geta, Aaland
881-882 Tjärnbergsmossen, Fagervik, Saltvik, Aaland
897 Västerklevsbergsmossen, Saltvik, Aaland
898 Ödkarbymossen, Saltvik, Aaland
899 Bläcksmyra, Sund, Aaland
900 Slättmossen, Kattby, Hammarland, Aaland
920 Stängslemossen, Drakenböle, Hammarland, Aaland

921 Stormossen, Djurvik, Jomala, Aaland
922 Stormossarna, Flaka, Lemland, Aaland

GRANÖ, O.

Hel-
1042 Horslök, Pernaja

GRZYBOWSKI, J.

Hel-
969-970 Nereśl, Narew Valley, NE-Poland

HAILA, H.

Hel-
957-958 Isokorpi, Ruotsinkylä, Tuusula
1222-1226 Mustalampi, Nuuksio
1239-1240 Metsolansuo, Korso
1281-1285 Laihalampi, Nuuksio

HEIKKINEN, O.

Hel-
783-787 Maanselänpuro, Posio
789-793 Perä-Puikkonen, Posio
873-874 Ärjenlampi, Posio
876-878 Paskalampi, Posio
969-970 Nereśl, Narew Valley, NE-Poland
1241 Mannilanlahti, Pyhäjärvi
1242-1244 Yläne, Pyhäjärvi
1360-1361 Yläne, Pyhäjärvi
1390-1395 Mannilanlahti, Pyhäjärvi

HICKS, S.

Hel-
1238 Perälampi, Kuusámo
1269 Perälampi, Kuusamo

HJELMROOS, M.

Hel-	
756-760	Nimisjärvi, Utajärvi
774	Hailuoto
813	Ahvenjärvi, Alavojakkala, Tornio
883-885	Ahmasjärvi, Utajärvi
886-887	Järvelänjärvi, Vihanti
888	Kiimajänkä, Kemi
946-947	Ahmasjärvi, Utajärvi
948-951	Järvelänjärvi, Vihanti
955-956	Kiimajänkä, Kemi
960	Järvelänjärvi, Vihanti
961	Kiimajänkä, Kemi

HUTTUNEN, A.

Hel-	
1176-1180	Ylimysneva, Parkano

HYVÄRINEN, H.

Hel-	
775-779	Domsvatnet, Vardø
788	Sonkaja, Ilomantsi
842-845	Sonkaja, Ilomantsi
975-979	Masehjauri, Enontekiö
980-981	Petroskoi, USSR
989-993	Mukkavaaranlampi, Enontekiö
1037	Masehjauri, Enontekiö
1069-1072	Mukkavaaranlampi, Enontekiö
1082-1086	Råttuvarri, Norway
1087-1091	Alta, Norway
1130-1131	Bakunkärrsträsket, Sipoo
1149-1150	Spåkenes, Norway
1266-1268	Odilampi, Espoo

JUNGNER, H.

Hel-	
674	Työtjärvi, Hollola

737-740 Työtjärvi, Hollola
770-773 Työtjärvi, Hollola
823-826 Varrassuo, Hollola
827-830 Työtjärvi, Hollola
838-841 Varrassuo, Hollola
846 Varrassuo, Hollola
847-850 Työtjärvi, Hollola
863-866 Varrassuo, Hollola
908-911 Varrassuo, Hollola
923-926 Varrassuo, Hollola
1073-1074 Herttoniemi
1075 Lohtaja
1076 Espoo
1147-1148 Joupinkylä, Seinäjoki
1295-1302 Cullendulla Creek Embayment, New South Wales, Australia
1320-1323 Cullendulla Creek Embayment, New South Wales, Australia
1324-1327 Seaspray, Victoria, Australia
1351-1353 Seaspray, Victoria, Australia
1354-1359 Cullendulla Creek Embayment, New South Wales, Australia
1368-1369 Finspång

KORPELA, K.

Hel-
780 Taivalkoski

KOUTANIEMI, L.

Hel-
854 Vihvilälampi, Kuusamo
855 Kourulampi, Kiutaköngäs, Kuusamo
857 Kotalampi, Liikasenvaara, Kuusamo
929 Oulanka, Kuusamo
935 Vihvilälampi, Kuusamo
936 Kourulampi, Kiutaköngäs, Kuusamo
937 Kotalampi, Liikasenvaara, Kuusamo
988 Oulanka, Kuusamo
1207-1208 Babi Do, North-Poland
1245-1251 Liippasuo, Kuusamo
1252-1254 Siikauopaja, Kuusamo

1278-1279	Jäkälämutka, Oulanka, Kuusamo
1280	Rajavyöhyke, Oulanka, Kuusamo
1304-1307	Siikauopaja, Oulanka, Kuusamo
1308-1309	Nurmisaari
1336-1341	Kitkajoki, Kuusamo
1396-1397	Enonlahti
1398	Kurunsuo
1399	Kaaresjärvi
1400	Rytölahti

KURIMO, H.

Hel-	
783-787	Maanselänpuro, Posio
789-793	Perä-Puikkonen, Posio
873-874	Ärjenlampi, Posio
876-878	Paskalampi, Posio

KURTÉN, B.

Hel-	
858	Puistola
1073-1074	Herttoniemi
1075	Lohtaja
1076	Espoo

LAPPALAINEN, V.

Hel-	
930	Kukonmylly, Ristiina

MARKGRAF, V.

Hel-	
1270-1271	Lago Guzman, Jalisco, Mexico

NÚÑEZ, M.

Hel	
814-816	Retulansuo, Hattula
996-1000	Lammaslampi, Vantaa

OKKO, A.

Hel-	
1196	Kärenlampi

PÉCSI, M.

Hel-	
1203	Hódmezővásárhely, Hungary
1204	Törökszentmiklós, Hungary
1205	Mohács, Hungary
1206	Tiszaföldvár, Hungary

RACHOCKI, A.

Hel-	
1191	Leba dune area, the north coast of Poland
1207-1208	Babi Do, North-Poland

REYNAUD, C.

Hel-	
756-760	Nimisjärvi, Utajärvi
774	Hailuoto
883-885	Ahmasjärvi, Utajärvi
886-887	Järvelänjärvi, Vihanti
888	Kiimajänkä, Kemi
946-947	Ahmasjärvi, Utajärvi
948-951	Järvelänjärvi, Vihanti
955-956	Kiimajänkä, Kemi
960	Järvelänjärvi, Vihanti
961	Kiimajänkä, Kemi

RUUHIJÄRVI, R.

Hel-	
954	Miehikkälä

SAARITSA, V.

Hel-	
1219-1221	Isosuo, Klaukkala

SAARNISTO, M.

Hel-	
781	Ylempi Silmäslampi, Rovaniemi
782	Lompolojärvi, Pello
795-796	Ylempi Silmäslampi, Rovaniemi
797	Lompolojärvi, Pello
938	Iso Mustajärvi, Ylitornio
982-983	Valkiajärvi, Ruovesi
984	Lupojärvi
1021-1024	Valkiajärvi, Ruovesi
1114-1123	Valkiajärvi, Ruovesi
1332-1333	Lapinlampi, Ylikiiminki
1334-1335	Kaakkurinlampi, Rovaniemi

SALOMAA, R.

Hel-	
859	Spitaalijärvensuo, Isojoki, Lauhanvuori
860	Likolamminsuo, Kauhajoki, Lauhanvuori
861	Kälminkeidas, Isojoki
862	Kylmänkullaankeidas, Isojoki, Lauhanvuori
996-1000	Lammaslampi, Vantaa
1171	Haukilammi, Isojoki, Lauhanvuori
1172	Spitaalijärvensuo, Isojoki, Lauhanvuori
1173-1174	Likolammensuo, Kauhajoki, Lauhanvuori
1175	Kodesjärvi, Isojoki
1291-1292	Kauhajärvi, Kauhajoki
1293-1294	Juurakkojärvi, Kauhajoki
1364-1365	Spitaalijärvi, Isojoki, Lauhanvuori
1366-1367	Pieni Haapajärvi, Siikainen

SANDBERG, E.

Hel-	
812	Juojärvi, Outokumpu

SEPPÄLÄ, M.

Hel-	
973	Lepp-l, Utsjoki

974 Riskaskama, Vuotso, Sodankylä
1038-1041 Skallovaara, Utsjoki
1042 Alakilpisjärvi
1191 Leba dune area, the north coast of Poland

SÖDERMAN, G.

Hel-
761-762 Palloneva, Jalasjärvi
763 Levitunturi, Sirkka

TIKKANEN, M.

Hel-
1051 Kurkelansuo, Nakkila
1052 Nuottilampi, Pyhäjärvi
1081 Nuottilampi, Pyhäjärvi
1128-1129 Nuottilampi, Pyhäjärvi
1241 Mannilanlahti, Pyhäjärvi
1242-1244 Yläne, Pyhäjärvi
1360-1361 Yläne, Pyhäjärvi
1390-1395 Mannilanlahti, Pyhäjärvi

TOLONEN, K.

Hel-
1053 Kunonniemi, Kitee
1094 Kunonniemi, Kitee
1132-1135 Varrassuo, Hollola
1140-1141 Kunonniemi, Kitee
1151-1163 Laaviosuo, Jahkola, Lammi

TOLONEN, M.

Hel-
1099-1102 Kärkkä, Salo
1103-1106 Hahkiala, Hauho
1107-1109 Kissalampi, Laitikkala, Pälkäne
1110-1111 Ketohaka, Salo
1112-1113 Likolampi, Salpakangas, Lahti
1126-1127 Ketohaka, Salo

1362-1363 Ketohaka, Salo

UUSINOKA, R.

Hel-
996-1000 Lammaslampi, Vantaa
1147-1148 Joupinkylä, Seinäjoki

VASARI, Y:

Hel-
769 Pulkkila
933-934 Hiilisuo, Petroskoi, USSR
942-943 Hiilisuo, Petroskoi, USSR
944 Pello
1009-1011 Pieni Näätälampi, Kuusamo
1012-1015 Rajalampi, Kuusamo
1020 Hiilisuo, Petroskoi, USSR
1176-1180 Ylimysneva, Parkano
1286 Lohiranta, Posio

VESAJOKI, H.

Hel-
1016-1017 Vierevänniemi, Höytiäinen
1018-1019 Säynepuro, Höytiäinen
1033 Vierevänniemi, Höytiäinen
1034-1035 Suoniemi, Höytiäinen
1036 Änäkkälänniemi, Höytiäinen
1136-1139 Tiaissuo, Polvijärvi
1144-1146 Rapalahti, Kontiolahti

VUORELA, I.

Hel-
674 Työtjärvi, Hollola
737-740 Työtjärvi, Hollola
770-773 Työtjärvi, Hollola
814-816 Retulansuo, Hattula
823-826 Varrassuo, Hollola
827-830 Työtjärvi, Hollola

838-841 Varrassuo, Hollola
847-850 Työtjärvi, Hollola
863-866 Työtjärvi, Hollola
908-911 Varrassuo, Hollola
923-928 Työtjärvi, Hollola
952-953 Vanajavesi
1031-1032 Vanajavesi
1142 Vanajavesi
1197-1200 Vanajavesi
1209-1210 Taruslampi, Sysmä
1211-1216 Kaakotinlampi, Sysmä

VUORINEN, J.

Hel-
931-932 Hännisenlampi, Kitee
939-941 Hännisenlampi, Kitee
1053 Kunonniemi, Kitee
1094 Kunonniemi, Kitee
1140-1141 Kunonniemi, Kitee

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