**Diverse Economic Patterns in the North Baltic Sea Region in the Late Neolithic and Early Metal Periods**

SUPPLEMENTARY DATA

**Methods**

**Lipid Analysis**

Two different methods were used to extract sub-samples of surface-cleaned sherds (1–2 g):

1) Direct methanolic acid extraction (Correa-Ascencio & Evershed, 2014). Briefly, 5ml of MeOH/H2SO4 (4% *v/v)* was added to powdered sherd samples, and the samples were heated (70°C, 1 h). Two ml of H2O (double-distilled, DCM extracted) were added to the extract. The supernatant was then transferred to a clean culture tube and was extracted using hexane (3×2 ml) and blown down under a stream of N2. After the extraction, an aliquot was treated with 20µl of *N*,*O*-bis(trimethylsilyl)trifluoroacetamide (BSTFA) in readiness for high-temperature gas chromatography (HTGC), gas chromatography-mass spectrometry (GC-MS), and gas chromatography-combustion-isotope ratio mass spectrometry (GC-C-IRMS) analyses.

2) Solvent extraction (Evershed et al., 1994): Briefly, internal standard (*n*-tetratriacontane) was added to powdered samples prior to solvent extraction, using CHCl3/MeOH (2:1 *v/v*). The aliquots of the total lipid extracts (TLEs) were filtered and treated with 40 μl BSTFA (1 h, 70°C) prior to screening using high temperature-gas chromatography (HTGC). When lipid concentration was over 5 μg/g, samples were further analysed with non-polar GC-MS and by GC-C-IRMS. Identification of individual fatty acids was carried out with GC-MS. In order to prepare the fatty acid methyl esters (FAMEs) from selected sherds, methanolic NaOH (5% *v/v*) was added to an aliquot of the sample, and the sample was acidified to pH 3 (1 M HCl). The aliquot was extracted with CHCl3. BF3-MeOH was added, and samples were extracted with CHCl3 and blown to dryness under N2. In order to analyse the DHYAs from the selected solvent extracted samples, the previously powdered pottery was extracted using direct methanolic acid extraction (Correa-Ascencio & Evershed, 2014).

**High Temperature Gas Chromatography (HTGC)**

HTGC analyses were conducted using Agilent Technologies 7890A GC. Diluted samples were introduced via on-column injection. The column was DB-1hT (15 m × 0.32 mm i.d., coated with dimethylpolysiloxane, film thickness, 0.10 μm, Agilent Technologies). The oven temperature was held isothermally for 2 min at 50°C and then increased to 350 °C at 10°C/min, followed by an isothermal hold at 350°C for 10min. The flame ionization detector (FID) was set to a temperature of 350 °C. Helium was used as a carrier gas and maintained at a constant flow of 4.6 ml/min. The peaks were identified by their retention times, and quantification was achieved with reference to the internal standard method.

**Gas Chromatography-Mass Spectrometry (GC-MS)**

GC-MS analyses of fatty acid methyl esters (FAMEs) were undertaken using a Finnigan Trace MS quadrupole mass spectrometer coupled to a Trace GC. Diluted samples were introduced using a PTV injector in the splitless mode onto a HP-1 (50 m × 0.32 mm i.d. fused-silica capillary column coated with dimethylpolysiloxane, film thickness, 0.17 μm, Agilent Technologies). The GC oven temperature was programmed as follows: 50°C for 2 min, to 300°C at 10°C/min, old at 300°C for 10 min. Helium was used as carrier gas and maintained at a constant flow of 5ml/min. The MS was operated in electron ionization (EI) mode (70 eV) with a GC/MS interface temperature of 250°C and a source temperature of 200°C. The emission current was 50μA, and the MS was set to acquire in the range of *m/z* 50–650 at two scans per second. Peaks were identified on the basis of their mass spectra using Thermo Xcalibur 3.0.63 software.

The structural identification of the APAAs was carried out with polar GC-MS (VF-23ms, 60 m × 0.32 mm i.d. fused-silica capillary column coated with cyanopropyl film thickness, 0.15 μm, Agilent Technologies). The initial oven temperature was 50°C with an evaporation phase of 1 min, followed by a transfer phase from 50°C to 250°C at 10°C/min, followed by an isothermal hold at 250°C for 10 min. The MS was operated in EI mode (70 eV) with a GC-MS transfer line temperature of 250°C and a source temperature of 200°C. Specific ions for APAAs were detected using selected ion monitoring (GC-MS-SIM, scanning for ions *m/z* 105, 262, 290, 318, and 346). Identification of the DHYAs was carried out by GC/MS (HP-1, 50 m × 0.32 mm i.d. fused-silica capillary column, coated with dimethylpolysiloxane, film thickness, 0.17 μm, Agilent technologies and RTX-1, 50 m × 0.32 mm i.d. fused-silica capillary column coated with dimethylpolysiloxane, film thickness, 0.17 μm, Restek). The MS was operated in EI mode (70eV) with a GC-MS transfer line temperature of 300°C and a source temperature of 300°C. The initial port temperature was 50°C for 1 min followed by a temperature programme from 50°C to 300°C at 10°C/min, followed by an isothermal hold at 300°C for 10min. Specific ions for the DHYAs were detected using SIM mode (scanning for ions *m/z* 159, 187, 215, 243, 259, 287, 315, 443, 471, 499).

**Gas-Chromatography-Combustion-Isotope Ratio Mass Spectrometry (GC-C-IRMS)**

The carbon isotope compositions of the C16:0 and C18:0 fatty acids were determined by GC-C-IRMS using an Agilent Technologies 7890A GC coupled to an IsoPrime 100 (70 eV, three faraday cup collectors *m/z* 44, 45, and 46) via an IsoPrime GC5 combustion interface with a CuO and silver wool reactor maintained at 850°C. Diluted samples were introduced using a PTV injector in the splitless mode onto a HP-1 (50 m × 0.32 mm i.d. fused-silica capillary column coated with dimethylpolysiloxane, film thickness, 0.17 μm, Agilent Technologies). The GC oven temperature was programmed from 40°C, following an isothermal hold for 1 min, to 300°C at 10°C/min, followed by an isothermal hold at 300°C for 10 min. Each sample was run as a duplicate.

δ13C values are reported relative to the VPDB (Vienna Pee Dee Belemnite) standard, where

where: δ13C = δ13C value of the sample (‰)

 Rsample = 13C/12C in the sample

 Rstandard = 13C/12C in the standard

An external standard was run every four runs. The external standard consisted of five FAMEs (C11:0, C13:0, C16:0, C21:0, and C23:0,) with known isotopic composition (-27.70, -32.26, -30.10, -27.76, -32.02, respectively). CO2 was used as reference gas, and it was injected into the ion source at the beginning and at the end of each run. Results obtained were calibrated against used reference gas. Instrument precision was ± 0.3‰.

**References for Supplementary Data**

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***Table 2.*** *Description of the studied sherds that contain significant concentrations of preserved lipids. FFA: free fatty acids; APAAs: ω-(o-alkylphenyl) alkanoic acids; TMTD: 4,8,12-trimethyltridecanoic acid; Phy: phytanic acid; Pris: pristanic acid; DHYA: dihydroxy acids; di: dicarboxylic acids; br: branched chain fatty acids; ?: uncertain identification of biomarkers due to low concentration. Vessel ÅM 642:1 has been found at a site with Swedish Pitted Ware, but it also has characteristics of Kiukainen Ware. In the interpretation column: A: aquatic fats, D: dairy fats, NR: non-ruminant terrestrial fats, R: ruminant fats. In type column: SS: settlement site, BC: burial cairn. Several catalogue numbers for one vessel indicate that sherds from the same vessel were glued together after excavation. Acid extraction was applied to all samples except those from Turku Kiukainen which were extracted by solvent extraction. All samples shown in the table were screened with HTGC and analysed using GC-MS and GC-C-IRMS.*

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Site and catalogue number** | **Lipid concentration (μg/g)** | **δ13C16:0** | **δ13C18:0** | **Δ13C** | **Composition** | **Interpretation** | **Type** |
| **Corded Ware** |
| ***Espoo Näkinkylä***  |  |  |  |  |  |  |  |
| KM 16288:51 | 1136.3 | -26.9 | -31.4 | -4.5 | FFA (C14:0-C18:0); C18 APAAs | D | SS |
| KM 16288:59 | 121.2 | -26.1 | -26.9 | -0.8 | FFA (C14:0-C18:0); C18 APAAs | NR | SS |
| ***Helsinki Malminkartano***  |  |   |   |   |   |   |   |
| KM 18564:38 | 144.5 | -29.1 | -28.9 | 0.2 | FFA (C14:0-C19:1); C18 APAAs | NR | SS |
| ***Hämeenlinna Hauho Perkiö*** |  |   |   |   |   |   |   |
| KM 17281:149 | 99.9 | -26.9 | -28.6 | -1.7 | FFA (C14:0-C18:0); C18 APAAs | R | SS |
| ***Kirkkonummi Tengo Nyåker***  |  |   |   |   |   |   |   |
| KM 21501:151 | 1121.9 | -26.7 | -28 | -1.3 | FFA (C16:0-C18:0); C18? DHYAs | R | SS |
| KM 21501:107 | 521.7 | -26.6 | -26.5 | 0.1 | FFA (C14:0-C18:0); C18 APAAs | NR | SS |
| KM 21501:146 | 5818.7 | -25.4 | -31 | -5.6 | FFA (C14:0-C22:0), C18:0Br; C18? DHYAs | D | SS |
| KM 21501:78 | 5406.4 | -28.3 | -30.9 | -2.6 | FFA (C16:0-C19:0); C18 APAAs | R | SS |
| KM 21501:92 | 609.1 | -26.6 | -31.3 | -4.6 | FFA (C14:0-C18:0); C18 APAAs | D | SS |
| ***Lapinjärvi Malmbacken Norrby*** |  |   |   |   |   |   |   |
| KM 9214:235 | 70.3 | -26.1 | -30.2 | -4.1 | FFA (C14:0-C18:0); C18 APAAs | D | SS |
| KM 9214:62 | 1133.8 | -28.2 | -27.2 | 0.9 | FFA (C14:0-C18:0); C18 APAAs | NR | SS |
| KM 9214:74, 75 | 688.8 | -24.9 | -27 | -2.1 | FFA (C14:0-C20:0); C18 APAAs | R | SS |
| ***Porvoo Böle Munkby*** |  |   |   |   |   |   |   |
| KM 22004:5911 | 781.2 | -23.9 | -25.2 | -1.2 | FFA (C16:0-C18:0); C18? DHYAs | R, A?  | SS |
| KM 22004:6400 | 79.3 | -27.4 | -26.7 | 0.7 | FFA (C12:0-C18:0), C9:0di; C18 APAAs | NR | SS |
| ***Turku Jäkärlä***  |  |   |   |   |   |   |   |
| TYA 427:14 | 62.5 | -26.2 | -29.8 | -3.6 | FFA (C14:0-C18:0); C18 APAAs; pris?; C16-C18 DHYAs | D | SS |
| TYA 427:51 | 16.5 | -25.4 | -22.5 | 2.8 | FFA (C14:0-C18:0); C18 APAAs | A, NR | SS |
| TYA 615:22 | 178.4 | -27.2 | -26.1 | 1.1 | FFA (C14:0-C18:0) | NR | SS |
| TYA 615:22 | 91.7 | -27.5 | -30.4 | -3 | FFA (C16:0-C18:0) | R | SS |
| ***Vantaa Jönsas-pohjoinen/itä Kaarela*** |  |   |   |   |   |   |   |
| KM 19914:594 | 118.1 | -26.8 | -24.5 | 2.3 | FFA (C14:0-C19:1); C18 APAAs; C16 DHYAs | NR, A? | SS |
| ***Västanfjärd Galtarby II*** |  |   |   |   |   |   |   |
| TYA 478:20 | 41.6 | -25.4 | -27.5 | -2.2 | FFA (C14:0-C19:1); C18 APAAs; C16? DHYAs | R | SS |
| TYA 478:4 | 34.2 | -24.5 | -23.2 | 1.2 | FFA (C16:0-C20:0); C18 APAAs; C16?, C18? DHYAs | A, NR | SS |
| **Swedish Pitted Ware** |
| ***Saltvik Härdalen 21.11***  |  |  |  |  |  |  |  |
| ÅM 649:110 | 436.8 | -23.9 | -24.2 | -0.3 | FFA (C14:0-C24:0); C18-C20 APAAs; TMTD; pris; C16-C20 DHYAs | A | SS |
| **Kiukainen Ware** |
| ***Kiukainen Uotinmäki*** |  |  |  |  |  |  |  |
| SatM-11888 | 34.5 | -25.6 | -26.3 | -0.6 | FFA (C14:0-C18:0); C15:0Br-C17:0Br; C18-C20 APAAs; TMTD; phy; C16-C20 DHYAs | NR, A | SS |
| SatM-10024 | 791.9 | -25.3 | -26.8 | -1.5 | FFA (C12:0-C22:0), C17:0Br; C18-C22 APAAs; TMTD; phy; pris; C16-C20 DHYAs | A, R? | SS |
| SatM-10029 | 77.1 | -25.5 | -28.6 | -3.1 | FFA (C12:0-C20:0); C15:0Br-C17:0Br; C18-C20 APAAs; TMTD; phy; pris; C16-C18 DHYAs | R, A | SS |
| SatM-2658 | 287.2 | -25.5 | -24.6 | 0.9 | FFA (C14:0-C18:0); C16-C18, C20? DHYAs | NR? | SS |
| SatM-8157 | 155.4 | -25.8 | -25.1 | 0.7 | FFA (C14:0-C18:0); C18-C20 APAAs; TMTD; phy; C16-C18 DHYAs | A? | SS |
| SatM-8158 | 89.7 | -26.2 | -27.8 | -1.6 | FFA (C14:0-C18:0); C15:0Br-C17:0Br; C18 APAAs; TMTD; phy; C16-C18 DHYAs | R | SS |
| SatM-8160 | 263.7 | -25.5 | -26.1 | -0.6 | FFA (C12:0-C18:0); C18 APAAs; TMTD; C16-C18 DHYAs | NR | SS |
| SatM-8162 | 155.3 | -26.3 | -28.6 | -2.3 | FFA (C14:0-C20:0); C18 APAAs; TMTD; C16-C18 DHYAs | R | SS |
| SatM-8166 | 73.6 | -27.1 | -25.9 | 1.2 | FFA (C10:0-C18:0); C18 APAAs | NR | SS |
| SatM-8167 | 81.6 | -28.2 | -28.1 | 0.1 | FFA (C14:0-C20:0); C15:0Br, C17:0Br; C18 APAAs; TMTD | NR | SS |
| SatM-8169 | 269.9 | -21.5 | -20.4 | 1.1 | FFA (C14:0-C20:0), C17:0Br, C18:0Br; C18-C20 APAAs; TMTD; phy; C16-C18, C20? DHYAs | A | SS |
| SatM-8170 | 51.2 | -26.2 | -24.9 | 1.3 | FFA (C12:0-C18:0); C18 APAAs | NR | SS |
| SatM-8180 | 116.6 | -25.2 | -25.6 | -0.4 | FFA (C14:0-C18:0); C15:0Br, C17:0Br; C18 APAAs; TMTD; phy; C16-C20 DHYAs | NR?, A? | SS |
| SatM-8647 | 117.5 | -24.5 | -27.4 | -2.8 | FFA (C14:0-C18:0); C18 APAAs; TMTD; phy; C16-C18 DHYAs | R | SS |
| ***Saltvik Härdalen 21.11***  |  |   |   |   |   |   |   |
| ÅM 642:1 | 177.2 | -27 | -29.4 | -2.4 | FFA (C14:0-C24:0) | R  | SS |
| ***Turku Kotirinne***  |  |   |   |   |   |   |   |
| TYA 239:147 | 346.8 | -26.1 | -27.2 | -1 | FFA (C14:0-C20:0); phy; pris; C16-C18 DHYAs | NR | SS |
| TYA 239:546 | 632.1 | -25.7 | -25.6 | 0.1 | FFA (C14:0-C20:0); C18 APAAs; TMTD; pris; C16-C18 DHYAs | NR? | SS |
| TYA 239:397, 400 | 788.8 | -25.3 | -24.7 | 0.6 | FFA (C14:0-C21:0), C15:0Br-C17:0Br; C18-C20 APAAs; TMTD, phy, C16-C18 DHYAs | A | SS |
| TYA 239:6, 7, 19 | 1239.5 | -26.4 | -25.7 | 0.7 | FFA (C14:0-C20:0), C15:0Br, C17:0Br; C18-C22 APAAs; TMTD; phy; pris; C16-C22 DHYAs | A | SS |
| TYA 245:375, 391 | 115.5 | -27 | -25.6 | 1.5 | FFA (C14:0-C18:0) | NR | SS |
| TYA 245:42 | 1076.8 | -23.3 | -23.4 | -0.1 | FFA (C12:0-C23:0), C15:0Br-C17:0Br; C18-C20 APAAs; TMTD; phy; pris | A? | SS |
| TYA 245:426 | 82.8 | -25.5 | -25.3 | 0.3 | FFA (C14:0-C20:0), C15:0Br, C17:0Br; C18 APAAs; TMTD; C16-C22 DHYAs | A | SS |
| TYA 245:50,76 | 249.9 | -26.4 | -28.4 | -2 | FFA (C14:0-C20:0); C17:0Br; C18-C20 APAAs; phy; C16-C22 DHYAs | R?, A? | SS |
| TYA 331:435 | 27.5 | -22.9 | -21.5 | 1.4 | FFA (C14:0-C20:0), C17:0Br, C18:0Br; C18-C20 APAAs; TMTD; phy; C16-C22 DHYAs | A | SS |
| TYA 331:998 | 164.2 | -24.8 | -24.5 | 0.3 | FFA (C12:0-C20:0), C15:0Br-C17:0Br; C18-C20 APAAs; TMTD; phy; pris; C16-C18, C20? DHYAs | A | SS |
| TYA 331:1054, 1055 | 423.5 | -26.2 | -25.9 | 0.3 | FFA (C14:0-C24:0); C18-C20 APAAs; TMTD; phy; pris; C16, C18?, C20? DHYAs | A | SS |
| TYA 331:1183 | 481.8 | -25.5 | -24.5 | 0.9 | FFA (C14:0-C18:0); C18 APAAs | NR | SS |
| TYA 331:1195 | 271.1 | -25.9 | -26.3 | -0.3 | FFA (C14:0-C20:0), C16:0Br, C17:0Br; C18-C22 APAAs; TMTD; pris; C16-C22 DHYAs | A | SS |
| TYA 331:79 | 584.8 | -23.5 | -24.3 | -0.8 | FFA (C14:0-C20:0), C16:0Br-C18:0Br; C18-C20 APAAs; TMTD; phy; pris; C16-C18 DHYAs | A | SS |
| TYA 331:410 | 988.6 | -26.7 | -29.3 | -2.6 | FFA (C14:0-C22:0), C17:0Br; C18-C20 APAAs; TMTD; phy; pris; C16-C18 DHYAs | A, R | SS |
| TYA 331:428 | 221.0 | -24.9 | -24.9 | 0 | FFA (C14:0-C18:0) | NR, A? | SS |
| TYA 489:48 | 749.2 | -27.3 | -30.9 | -3.6 | FFA (C14:0-C20:0); C16:0Br-C17:0Br; phy | D | SS |
| TYA 489:120 | 1151.9 | -23.7 | -24.1 | -0.4 | FFA (C14:0-C20:0); C18-C22 APAAs; TMTD; phy; pris; C16-C22 DHYAs | A | SS |
| TYA 582:38 | 601.6 | -25.2 | -24.9 | 0.3 | FFA (C14:0-C20:0); C18 APAA; TMTD; phy; pris | NR, A? | SS |
| TYA 582:336 | 413.4 | -25.6 | -26.3 | -0.8 | FFA (C14:0-C18:0), C15:0Br, C17:0Br; C18-C20 APAAs; TMTD; phy; pris; C16-C18 DHYAs | A, NR? | SS |
| TYA 582:35 | 250.3 | -23.9 | -24.2 | -0.2 | FFA (C14:0-C18:0); phy | NR, A? | SS |
| TYA 582:393 | 682.8 | -26 | -25.6 | 0.4 | FFA (C14:0-C20:0); C18-C22 APAAs; TMTD; phy; pris; C16-C22 DHYAs | A | SS |
| TYA 582:485 | 219.4 | -25 | -25.5 | -0.5 | FFA (C14:0-C18:0), C17:0Br; C18-C20 APAAs; TMTD; C16-C20 DHYAs | A | SS |
| TYA 582:552 | 42.1 | -24 | -25.3 | -1.3 | FFA (C16:0-C24:0) | R  | SS |
| **Bronze Age Ware** |
| ***Eura Luistarintien alue***  |  |  |  |  |  |  |  |
| KM 39506:1 | 507.1 | -26.6 | -26.3 | 0.3 | FFA (C15:0-C20:0), C16:0Br-C18:0Br; TMTD, pris | NR | SB |
| KM 39506:2 | 185.1 | -26.2 | -26.2 | 0 | FFA (C16:0-C20:0), C17:0Br, C18:0Br | NR | SS |
| **Morby Ware** |
| ***Espoo Bolarskog I***  |  |  |  |  |  |  |  |
| KM 19165:14 | 4515.3 | -27.4 | -33.4 | -6 | FFA (C14:0-C24:0); C17:0Br; C18 APAA; C18? DHYAs | D | SS |
| KM 19165:158 | 177.4 | -24.1 | -28.2 | -4.1 | FFA (C12:0-C18:0) | D | SS |
| KM 19165:185 | 746.2 | -26.1 | -32.2 | -6 | FFA (C14:0-C20:0); C18 APAAs; C18? DHYAs | D | SS |
| KM 19165:307 | 2582.1 | -25.8 | -28.3 | -2.5 | FFA (C14:0-C18:0); C15:0Br-C17:0Br; phy; C16-C22 DHYAs  | R, A?  | SS |
| KM 19165:314 | 1029.5 | -26.3 | -32.3 | -6 | FFA (C14:0-C20:0); C17:0Br; phy | D | SS |
| KM 19165:52 | 65.4 | -29.8 | -28.5 | 1.3 | FFA (C14:0-C18:0); C18? DHYAs | NR | SS |
| ***Finström Godby***  |  |   |   |   |   |   |   |
| ÅM 533:535 | 5209.5 | -29.2 | -33.8 | -4.6 | FFA (C14:0-C20:0), C17:0Br; C18 APAA | D | SS |
| ***Jomala Dalkarlby***  |  |   |   |   |   |   |   |
| ÅM 149:2 | 6434.8 | -28.6 | -34.2 | -5.6 | FFA (C14:0-C20:0), C17:0Br | D | BC |
| ***Jomala Överby***  |  |   |   |   |   |   |   |
| ÅM 165:1 | 2791.4 | -27.1 | -32.3 | -5.2 | FFA (C12:0-C22:0), C9:0di, C17:0Br; C18 APAA; phy; C16-C18 DHYAs | D | BC |
| ***Jomala Överby 37.4***  |  |   |   |   |   |   |   |
| ÅM 652:129 | 442.6 | -32.3 | -31.3 | 1 | FFA (C14:0-C20:0) | NR | BC |
| ÅM 652:13 | 121.1 | -27 | -26.8 | 0.2 | FFA (C14-C19:1), C16:0Br, C17:0Br; C18 APAAs | NR | BC |
| ÅM 652:193 | 61956.1 | -27.5 | -33 | -5.6 | FFA (C14:0-C18:0), C15:0Br-C17:0Br; phy; C16-C18 DHYAs | D | BC |
| ÅM 652:193 | 1552.9 | -28 | -30.9 | -2.9 | FFA (C14:0-C22:0); phy | R | BC |
| ÅM 652:201 | 35.1 | -28.2 | -26.7 | 1.5 | FFA (C12:0-C20:0), C9:0di, C16:0Br, C17:0Br; C18 APAAs | NR | BC |
| ÅM 652:206 | 389.1 | -27.7 | -30.1 | -2.4 | FFA (C14:0-C22:0); C18 APAAs; phy | R | BC |
| ÅM 652:283 | 7551.6 | -27.8 | -32.9 | -5.1 | FFA (C14:0-C22:0), C17:0Br; phy | D | BC |
| ÅM 652:295 | 8884.4 | -28.8 | -32.8 | -4 | FFA (C14:0-C20:0), C17:0Br; C18 APAA; phy | D | BC |
| ÅM 652:80 | 437.6 | -27.3 | -29 | -1.7 | FFA (C9:0-C19:1), C9:0di, C16:0Br; C18 APAAs | R | BC |
| ***Kemiönsaari Kåddböle***  |  |   |   |   |   |   |   |
| TYA 860:6 | 396.4 | -26.8 | -27.8 | -1 | FFA (C12:0-C19:1); C18 APAAs; C18? DHYAs | R, NR | SS |
| ***Piikkiö Moisio Moision Alitalo*** | 18556.3 |   |   |   |   |   |   |
| TYA 369:2 |   | -28.1 | -30.1 | -2 | FFA (C16:0-C18:0); C17:0Br; C18 APAAs; phy | R | SS |
| ***Turku Räntämäki Orhinkarsina*** |  |   |   |   |   |   |   |
| TYA 665:90, 97 | 3656.7 | -23.3 | -23.3 | 0 | FFA (C14:0-C18:0), C17:0Br; C18 APAAs; TMTD; pris; C16 DHYAs | A, NR | SS |
| ***Ulvila Suolisto Peltomäki*** |  |   |   |   |   |   |   |
| TYA 112:7 | 407.2 | -26.1 | -26.2 | -0.1 | FFA (C16:0-C18:0); C18 APAAs  | NR | BC/SS |

***Table 3.*** *Bone from the sites with Corded Ware included in this study (NISP: Number of Identified Specimens): Kirkkonummi Nyåker Tengo (KM 8709 & KM 21501; Bläuer & Kantanen, 2013); Hämeenlinna Perkiö (KM 17281; Bläuer & Kantanen, 2013); Salo Märy Halikko (KM 22008; Mannermaa, 2013); Inkoo Rangvalds (KM 22397; Bläuer, 2015a); Turku Jäkärlä (TYA 194, TYA 208, TYA 313, TYA 336, TYA 416, TYA 427, TYA 457, TYA 559, TYA 615; Vormisto, 1985; Bläuer, 2015b); Lapinjärvi Norrby (KM 9214; Bläuer, 2015a); Sastamala Liekolankatu (KM 18251; Bläuer & Kantanen, 2013); Vantaa Jönsas (KM 18836, KM 19274, KM 19275, KM 19383, KM 19661, KM 19662, KM 19913, KM 19914, KM 20087, KM 21606, KM 23532, KM 23719, KM 27050; Fortelius & Nummela in Leskinen & Pesonen, 2008: 262, Appendix 5); Espoo Näkinkylä (KM 16288; Bläuer & Kantanen, 2013); Porvoo Böle Munkby (KM 12135, KM 12359, KM 16876, KM 17074, KM 17387, KM 19385, KM 19799, KM 20464, KM 20466, KM 22004; Fortelius, 1980c; Mannermaa, 2013). There were no identified fragments from Helsinki Malminkartano (KM 18564; Fortelius, 1980b) and Siuntio Dalamalm (KM 21142; Bläuer & Kantanen, 2013). \*: unburnt bone, probably dating to a later period.*

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| **Species/Site** | **Kirkkonummi Tengo**  | **Hämeenlinna Perkiö**  | **Salo Halikko**  | **Inkoo Rangvalds** | **Turku Jäkärlä**  | **Lapinjärvi Norrby**  | **Sastamala Liekolankatu**  | **Vantaa Jönsas** | **Espoo Näkinkylä** | **Porvoo Munkby**  |
| Seal (Phocidae) |   |   |   |   | 14 | 156 |   | 393 |   | 41 |
| Seal? |   |   |   | 1 |   |   |   |   |   |   |
| European elk (*Alces alces*) |   |   |   |   |   | 5 |   | 30 |   |   |
| Elk? |   |   |   |   |   | 3 |   |   |   |   |
| European beaver *(Castor fiber*) | 1 |   |   |   | 3 | 1 |   | 31 |   | 6 |
| Beaver? |   |   |   |   | 1 |   |   |   | 1 |   |
| Brown bear (*Ursus arctos*) |   | 1 |   |   |   |   | 1 |   |   |   |
| Mountain hare (*Lepus timidus*) |   |   |   |   | 1 |   | 1 |   |   | 1 |
| Red fox (*Vulpes vulpes*) |   |   |   |   |   | 2 |   |   |   |   |
| Otter (*Lutra lutra*) |   |   |   |   |   |   |   | 1 |   |   |
| Canidae |   |   |   |   |   |   |   | 1 |   |   |
| Cattle (*Bos taurus)* |   |   |   | 1\* |   |   |   |   |   |   |
| Pig *(Sus scrofa*) |   |   |   |   |   | 1\* |   |   |   |   |
| Mammal/Homo sapiens? |   |   | 1 |   |   |   |   |   |   |   |
| Northern pike (*Esox lucius*) |   |   |   |   |   | 7 |   | 1 |   | 40 |
| Perch (*Perca fluviatilis*) |   |   |   |   |   |   |   | 2 |   | 3 |
| Perch/Pikeperch (*Sander lucioperca*) |   |   |   |   |   |   |   | 3 |   | 2 |
| Särki (*Rutilus rutilus*) |   |   |   |   |   |   |   | 1 |   |   |
| Carp family (Cyprinidae) |   |   |   |   | 1 |   |   | 8 |   | 9 |
| Pikeperch? |   |   |   |   |   |   |   | 1 |   |   |
| Cod? (*Gadus morhua*) |   |   |   |   |   | 1 |   |   |   |   |
| Fish  |   |   |   |   | 4 | 1 |   | 37 |   | 3 |
| Goosander (Mergus merganser) |   |   |   |   |   |   |   | 1 |   |   |
| Grebe (Podiceps) |   |   |   |   |   |   |   | 1 |   |   |
| Goose (Anser sp.) |   |   |   |   |   |   |   | 1 |   |   |
| Duck (Aas sp.) |   |   |   |   |   |   |   | 15 |   |   |
| Bird |   |   |   |   | 1 | 1 |   | 11 |   | 6 |

***Table 4.*** *Bone from the Kiukainen culture sites included in this study (NISP: Number of Identified Specimens): Kiukainen Uotinmäki (KM 3574 and KM 4275; Herluf Winge in Ailio, 1909: 83); Turku Niuskala (TYA 220, TYA 239, TYA 245, TYA 297, TYA 331, TYA 385, TYA 446, TYA 489, TYA582; Bläuer & Kantanen, 2013). \*: the cattle bone is an unburnt tooth fragment which might date to a later period.*

|  |  |  |
| --- | --- | --- |
| **Species/site** | **Kiukainen Uotinmäki** | **Turku Niuskala** |
| Seal (Phocidae) | 5 | 7 |
| Seal? |   | 6 |
| Cattle (*Bos taurus*) | 1\* |   |
| Canidae |   | 1 |
| Canidae? |   | 1 |
| Human (*Homo sapiens*) |   | 1 |
| Large mammal |   | 4 |
| Pike (*Esox lucius*) |   | 5 |

***Table 5****. Animal bone from the Bronze Age site in Eura and the Morby settlement sites included in this study (NISP: Number of Identified Specimens): Piikkiö Moisio (TYA 392, TYA 444, TYA 644, TYA 658; Ukkonen, 1998; Bläuer, 2015b); Turku Räntämäki Orhinkarsina (TYA 639; Ukkonen, 1996b); Nousiainen Koivumäki (KM 19349; Fortelius, 1980a); Eura Luistarintie (KM 39506; Bläuer & Kantanen, 2013); Espoo Bolarskog (KM 18922, KM 19165; Bläuer, 2015a); \*: probable recent intrusion.*

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| **Species/Site** | **Eura Luistarintie**  | **Espoo Puolarmetsä** | **Nousiainen Koivumäki**  | **Piikkiö Moisio**  | **Turku Orhinkarsina** |
| Cattle (*Bos taurus*) |   |   |   |   |   |
| Cattle? *(Bos taurus*)? |   |   |   | 1 |   |
| Cattle?/elk? |   |   |   |   |   |
| Sheep (*Ovis aries*) |  |  |  |  |  |
| Goat (*Capra hircus*) |  |  |  |  |  |
| Sheep or goat (*Ovis aries/Capra hircus*) |   |   |   | 5 |   |
| Pig (*Sus scrofa*) |   |   |   |   |   |
| Horse (*Equus caballus*) |   |   |   |   |   |
| European elk *(Alces alces*) |   |   | 1 |   |   |
| Elk/reindeer? (*Rangifer tarandus*)? | 1 |   |   |   |   |
| Elk? |   |   |   | 1 |   |
| Large ungulate |   | 1 |   |   |   |
| European beaver (*Castor fiber*) |   |   |   | 1 |   |
| Beaver? |   |   |   | 1 |   |
| Dog (*Canis familiaris*) |   |   |   | 3 |   |
| Cat (*Felis catus*) |   |   |   |   |   |
| Seal (*Phocidae*) |   |   | 3 |   | 1 |
| Fish | 1 |   |   | 2 |   |
| Chicken *(Gallus domesticus*) |   |   |   | 1\* |   |
| Bird (*Aves*) |   |   |   |   |   |