BIOGRAPHIES AND OBJECTS

LEFT. Georg at excavations of the courtyard at the Presidential Palace with Outi Jokinen (now Ampuja). Photo: Marianna Niukkanen 1997.
RIGHT. Georg surveying at Ahvenanmaa. Photo: Elina Terävä 2016.

Frida Ehrnsten

FRÅN MYNT TILL METALL
Medeltida klippingar i det finska fyndmaterialet

ABSTRACT

This article discusses the debased klippings that were minted in Denmark and Sweden between 1518 and 1523. Due to rearmament and military campaigns, there was an immense need for coins. Also in Finland, millions of klippings entered circulation, initially as payment to soldiers but soon throughout society. It is possible that klippings were even briefly minted at Kuusisto castle in Finland, during the fiefdom of Søren Norby. The poor-quality klippings were quickly withdrawn in Denmark and Sweden, but in Finland, the withdrawal was less successful. Hundreds of clippings have been found scattered in fields, making them by far the most common medieval coin type in Finnish archaeological finds. These coins offer valuable insight into the monetary history of the period and serve as an example of what happens when coins lose their value.

Nyckelord: krigståg, medeltid, myntfynd, numismatik, nödmynt

INLEDNING

Medeltida mynt är en sällsynt vara i finska arkeologiska fynd. Vi vet att myntbruket så småningom spred sig i samhället under loppet av medeltiden, men förutom i stenkyrkorna och på slotten finns det förvånansvärt få bevis på detta. Det ökade bruket av metalldetektorer har inte märkbart förändrat forskningsläget, i stället verkar det understryka de medeltida myntens sällsynthet jämfört med vikingatida och senare mynt.[1] Det finns dock en medeltida myntsort som tydligt sticker ut bland de nya fynden som rapporterats sedan 2013.[2] Av sammanlagt 555 identifierade och som medeltida klassificerade mynt är nämligen hela 391 (70,5 %) klippingar av den typ som både Kristian II och Gustav Vasa lät prägla i enorma mängder åren 1518–23.

De fyrkantiga klippingarna började ges ut i Danmark från och med 1518, i samband med upprustningen mot Sverige. Det var både snabbare och mer kostnadseffektivt att producera fyrkantiga mynt jämfört med runda. Dessutom var klippingarna kraftigt underlödiga. Genom att prägla dåligt mynt kunde man tillfälligt göra vinst för att finansiera fälttågen och avlöna legosoldater. Klippingarnas låga värde var ingen statshemlighet, utan ett allmänt känt faktum. Redan under sin samtid blev

Kristian II hånad för sina dåliga mynt, till den grad att han tilldelades öknamnet kung Klipping. Förargelsen över de undermåliga klippingarna återspeglas i *Konung Christiern Klippings krönika*:

> ”Därtill lät jag slå ett skamligt mynt
> Som ännu är för var man synt Klipping var hans högsta namn
> Alla till skada och ingen till gagn
> Jag kallas Kung Klipping i samma stund
> För ty jag fann uppå dess fund.”[3]

Lite orättvist var det mot Kung Kristian, eftersom han inte ensam bar ansvaret för de usla mynten. I Sverige lät även Gustav Eriksson (Vasa) prägla egna klippingar. Baserat på ett stort skattfynd i Västerås med över 1200 klippingar kunde Bengt Hemmingsson år 1973 bevisa att en stor del av de danska klippingarna i själva verket var imitationer som Gustav hade låtit prägla i Sverige. På så vis kunde också han tjäna på utmyntningen och samtidigt öka folkets missnöje med den danska kungen.[4]

Till en början hade klippingarna i Danmark ett nominellt värde av en skilling och i Sverige 18 penningar, men värdet minskades i takt med att myntets kvalitet försämrades. Präglingen av dåligt mynt kan endast ge en mycket tillfällig vinst och därför var utmyntningen av klippingar en kortvarig företeelse både i Danmark och i Sverige. Klippingarna drogs snart in och ersattes med bättre mynt i bägge land. I skandinaviska fynd är klippingar därför rätt sällsynta med tanke på den enorma utmyntningen.[5] Ännu för 15 år sedan var klippingar inte heller särskilt vanligt förekommande i finska fynd. Dåliga mynt lades inte under i besparingar och i kyrkorna finns förvånansvärt få mynt från denna tid. Bland åkerfynden är däremot klippingarna idag ett av de vanligaste medeltida fynden som rapporteras. De fynd som har anmälts under de senaste tio åren utgör ett helt nytt källmaterial som förändrar uppfattningen om klippingarnas spridning i Finland. I denna artikel presenteras en översikt av klippingarnas historia samt en analys av de finska klippingfynden, både gamla som nya. Varför är just dessa mynt så vanliga som lösfynd och vad berättar de om myntcirkulationen ur ett bredare perspektiv? Varför är antalet klippingar så mycket större i Finland än i de skandinaviska länderna?

UTMYNTNINGEN AV KLIPPINGAR

Historien bakom de underlödiga 1500-tals klippingarna är välkänd och har publicerats i flera sammanhang.[6] I Malmö myntmästare Jörgen Kocks räkenskaper från åren 1518–1523 framgår vilken enorm utmyntning det rörde sig om. I tre av fyra räkenskaper nämns antalet myntade klippingar, vars värde uppgår till 516 333 mark 6 skilling. Dessutom präglades danska klippingar i Köpenhamn och troligtvis även i Stockholm, i samband med Jörgen Kocks besök där år 1521.[7] Sammanlagt producerades minst 50–60 miljoner danska klippingar åren 1518–12, troligtvis ännu fler eftersom räkenskaperna från slutet av 1520 till slutet av 1521 saknas.[8]

De danska klippingarna var ursprungligen värda en skilling och präglades även med skillingstampar. På klippingarnas åtsida avbildas den krönte kungen, hållande riksäpple och svärd, medan frånsidan visar den danska vapenskölden med tre lejon på ett kors. Ofta syns bara den mittersta delen av motiven och omskriften saknas helt (Fig. 1). Uppgifter om klippingarnas lödighet har bevarats i ett brev från riksrådet till myntmästaren i Malmö. I brevet, daterat den 25 februari 1524, nämns fyra olika utmyntningar av klippingar. Till en början var silverhalten 20,8 %, därefter sänktes den till 13,5 % och senare till mindre än 12,5 %. De olika utmyntningarna kunde särskiljas genom hemliga mar-

FIGUR 1. Klipping hittad vid ruinerna av Den Heliga Treenighetens kyrka i Raumo. Lejonen saknar tungor och silverhalten är låg. RK2925:23. Bild: Finlands nationalmuseum.

keringar, baserade på utformningen av lejonens tungor och svansar samt baksidans kors.[9] Klippingarna i fynden är oftast i så dåligt skick att de olika typerna inte kan urskiljas, förutom den första gruppen, som tydligt innehåller en större mängd silver. Haltanalyser av 12 klippingar i Kungliga Myntkabinettets samlingar i Sverige har visat att klippingarna uppvisar en stor variation i både lödighet och vikt. Ett gemensamt drag för klippingarna med sämre silverhalt är avsaknaden av lejonens tungor, vilket överensstämmer med markeringarna.[10]

Liksom i Danmark inledde Gustav Eriksson sin klippingmyntning i Hedemora år 1521 för att kunna avlöna sina knektar. Detta skapade missnöje bland Gustavs trupper, men han förklarade sig tvungen att prägla dylika mynt och skyllde på kung Kristian, som hade varit den förste att slå dåligt mynt. År 1521 gavs klippingarna samma värde som de gamla örtugarna, som hade präglats före 1478.[11] I biskop Peder Swarts krönika, skriven omkring 1560, nämns att de svenska klippingarna hade samma värde som de danska. På ena sidan av mynten avbildades en rustningsklädd man och på den andra sidan korslagda dalpilar. Två olika huvudtyper av de klippingar som Gustav Eriksson officiellt lät prägla är kända. På den första typen skiljer sig riksföreståndarens bild tydligt från den danska kungen, medan bilden på den andra typen är mer stiliserad och svår att särskilja från den danska. Också i Sverige måste klippingutmyntningen ha varit betydande, eftersom myntmästaren i Hedemora hade såväl en skrodermästare som ett antal svenner under sig. Dessutom präglades klippingar i både Söderköping och Västerås.[12]

Största delen av de svenska klippingarna slogs dock som imitationer av de danska, vilket Bengt Hemmingsson konkret kunnat bevisa genom ett stort klippingfynd från Västerås, som innehåller över 1224 klippingar. Fyndet inkluderar många ”danska” klippingar, vars åtsidor präglats med samma stämplar som de svenska klippingarna.[13] Även i det skriftliga källmaterialet finner man bevis för de svenska efterpräglingarna, då svenskt mynt med danskt vapen nämns i Hans Brasks kopiebok från 1523/1524.[14] De danska myndigheterna klagade också på att falska klippingar från Sverige, Norge och Tyskland strömmade in i Danmark under åren 1523–1524. De falska klippingarna förbjöds i Danmark, och redan tidigare hade efterlikningarna förbjudits i Stockholm, som kontrollerades av danskarna.[15] Folkets och särskilt soldaternas missnöje riktade sig dock mot klippingarna i allmänhet, inte bara mot efterpräglingarna.

SÖREN NORBY OCH KLIPPINGARNAS VÄG TILL FINLAND

Klippingarna är krigsmynt och deras historia i Finland är också starkt knuten till de krigshändelser som utspelade sig i samband med Kristian II:s maktambitioner och danskarnas krig mot Sverige och Lübeck. En stor mängd mynt krävdes för att täcka krigsutgifter, för rustning och särskilt för avlöning av lejda soldater. Hösten 1520 kapitulerade de finska borgarna och slottslänen hamnade under

FIGUR 2. Skilling präglad av Sören Norby på Kustö. Fynd från utgrävningarna vid biskopsborgen år 1883. RKHY422:2. Bild: Frida Ehrnsten.

FIGUR 3. Klipping med ringar. Fynd från utgrävningarna vid Kustö biskopsborg år 1893. RK2944:35. Bild: Frida Ehrnsten.

danskt styre. Gustav Erikssons (Vasa) uppror spred sig även till Finland och våren 1522 fick amiral Sören Norby i uppgift att förstärka Kristian II:s maktposition i den östra rikshalvan.

I maj 1522 besökte Norby Stockholm och fick 46 000 mark i klippingar för avlöning av krigsfolk, ryttare och knektar inför krigståget till Finland. Pengarna levererades i säckar med Jörgen Kocks sigill, direkt från myntverket i Malmö.[16] Baserat på det danska värdet av en skilling, eller det senare sänkta svenska värdet, uppgår detta till så mycket som 736 000 klippingar. Utöver detta kom en mindre leverans på 4000 mark samt en större på 24 000 mark. I september överlämnades ytterligare 8809 danska mark för avlöning av kung Kristians krigsfolk i Finland.[17] Vid de senare försändelserna nämns inte specifikt klippingar, men eftersom mynten användes för avlöning av trupper var det troligtvis samma mynt, särskilt eftersom klippingarna var de enda mynt som präglades i Danmark under denna period. Detta innebär att åtminstone över en miljon klippingar strömmade in i Finland direkt genom Sören Norbys krigståg.[18]

Norbys trupper bestod av cirka 2000 man. De anlände till Åbo den 22 maj 1522 och fortsatte sedan fälttåget mot Raseborg. Som belöning fick Norby i augusti 1522 Kustö i förläning, och från och med september samma år hela Finland, med undantag för Viborgs slottslän. Ett av villkoren var att han skulle underhålla 400 ryttare. Ryttarna och knektarna avlönades månadsvis, vilket krävde en enorm mängd kontanter.[19] Under den tid Sören Norby hade Finland i förläning använde han Kustö biskopsborg som sin bas. Det är numera känt att Norby under en kort period år 1522 präglade skillingar i biskopsborgen för att täcka behovet av mynt (Fig. 2). I ett brev adresserat till myntmästare Leinhart Pauwermann nämns nämligen mottagaren som *Muntmeister up Cust*.[20]

Jani Oravisjärvi har nyligen framfört möjligheten att Sören Norby även lät prägla klippingar på Kustö. Det finns en typ av klipping med tre ringar eller en treklöver på baksidan, som förekommer både i metalldetektorfynd från Finland och i fyndmaterialet från Kustö biskopsborg (Fig. 3). Denna klippingtyp har hittills inte publicerats i myntkataloger eller i svensk eller dansk litteratur. Som Oravisjärvi har påpekat förekommer tre ringar också på samtida St. Henriks örtugar, som något

senare präglades av myntmästare Leinhart i Åbo. Utan skriftliga källor är det svårt att bevisa präglingen av klippingar på Kustö, men som Oravisjärvi argumenterat, så är detta mycket möjligt, med tanke på det vi i övrigt vet om Sören Norbys myntning i Finland. [21] Klippingarna var snabbare att prägla än runda mynt, så det är logiskt att anta att Norby, i behov av mynt för att avlöna soldater, lät prägla dylika. Soldaterna var dock ovilliga att ta emot hela sin lön i klippingar, vilket gjorde att även skillingar behövdes.

Liksom det saknas skriftliga bevis för Norby myntning på Kustö, finns det inte heller några bevarade dokument angående användningen av de svenska efterpräglingarnas i den östra rikshalvan. Troligtvis strömmade också dessa in i landet efter att Gustav Vasas trupper under hösten 1523 fördrev danskarna och återtog de slott som Sören Norby hade haft befäl över.

MYNTINDRAGNINGEN

De undervärdiga klippingarna sågs ej med blida ögon, särskilt eftersom de utmyntades i enorma mängder och deras värde ständigt sjönk. Efter upproret mot Kristian II lovade Fredrik I att förbättra det danska myntet. Sommaren 1523 beslutades att klippingarna skulle dras in och att de inte längre skulle vara gångbara efter den 1 september. Eftersom många löner hade betalats ut i klippingar protesterade borgare och bönder mot en alltför snabb sänkning av myntets värde, och den faktiska indragningen sköts upp till året därpå. I Danmark genomfördes således en omfattande indragning av klippingarna år 1524. De bättre mynten ompräglades till nya, medan de sämre smältes ner. Danska klippingar löstes in till ett fast värde i relation till det nominella värdet, medan efterpräglingarna betraktades som vanlig metall.[22]

I Sverige sänktes de svenska klippingarnas värde till 12 penningar den 1 januari 1524. Efter att Gustav Vasa utropats till kung avlystes klippingarna, och i skriftliga källor antyds att de därefter endast gällde för sitt metallvärde.[23] I en skrivelse daterad den 15 februari 1526 framkommer det dock att klippingar fortfarande cirkulerade, trots att de hade avskaffats. Samma år spreds ett rykte om att utländska köpmän hade växlat till sig klippingar. Klippingar nämns för sista gången i januari 1539, då kungen nämner sina nu goda mynt jämfört med de usla klippingmynten från kung Kristians dagar.[24]

I en studie av klippingar i danska fynd har Keld Grinder-Hansen konstaterat att indragningen var mycket effektiv. År 1994 kände man endast till 31 ströfunna klippingar i Danmark och i depåfynden saknas de. Över 20 % av dessa klippingar (7 exemplar) kom från Bornholm. År 1525 hade Lübeck ön i pant, vilket kan förklara varför indragningen inte var lika effektiv där.[25] Sedan 1994 har nya metalldetektorfynd ökat antalet danska klippingar med 280 exemplar, samt två klippingar av Gustav Vasas typ. Detta är dock ett relativt litet antal om man jämför med det totala antalet myntfynd i Danmark, där det till exempel registrerats 5374 exemplar av Erik av Pommerns undervärdiga kopparsterlingar från 1420- och 30-talen. Bland de nya fynden sticker Bornholm fortsättningsvis ut, med över 50 klippingar i fyndmaterialet. Vid arkeologiska utgrävningar i Köpenhamn har tre klippingar med hack hittats, vilket kunde tyda på att de makulerats.[26]

Utanför Danmark återfinns klippingar i Norge, Sverige och Finland. År 1995 kände man till 58 klippingar i norska fynd, varav 16 från skattfynd och de övriga från kyrkor. Mellan åren 2012 och 2017 registrerades 53 mynt från perioden 1481–1550, varav 30 var klippingar. Det verkar som om indragningen genomfördes även i Norge, men den tycks inte ha varit lika effektiv som i Danmark.[27] I Sveriges fyndmaterial ingår 149 klippingar i hopade fynd, varav 59 från Alvastra kloster i Östergötland. Sammanlagt är 73 av klippingarna kopplade till klostermiljö. I kyrkor har man

hittat 42 klippingar och i borgmiljöer 24, i stadsmiljöer åtta och från landsortsmiljöer endast tre.[28] Därtill kommer naturligtvis den stora Västerås-skatten med över 1200 klippingar. Denna depå verkar dock vara ett undantag som bekräftar regeln att dåligt mynt inte lades undan. Ett annat samtida fynd från Västerås innehåller 16 231 mynt, men bara två klippingar, och i övriga depåfynd saknas klippingar.[29] Liksom i Norge är klippingar inte helt ovanliga fynd i Sverige, men sett till den omfattande utmyntningen är antalet fynd anspråkslöst. Eftersom det saknas metalldetektorfynd är det dock svårt att göra direkta jämförelser med fynden från övriga Skandinavien.

KLIPPINGFYND I FINLAND

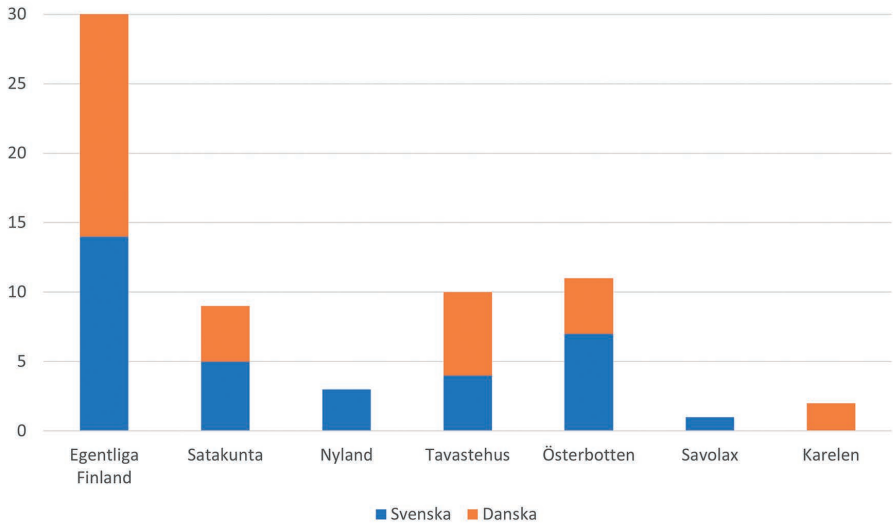
Medeltida mynt är sällsynta fynd i Finland, med undantag för just dessa undervärdiga klippingar. Mellan åren 2013 och 2023 har hela 400 exemplar rapporterats, med en bred geografisk spridning längs hela den finska kusten men även inåt landet och mot östra Finland. Nästan hälften av dessa (193 exemplar) kommer från Egentliga Finland, vilket speglar det generella mönstret för medeltida myntfynd. Även i Satakunta är antalet klippingar högt, bland annat har det hittats ett flertal kring kyrkan i Ulfsby samt runt Raumo och Kumo. Det stora antalet fynd från Kumo kan åtminstone delvis förklaras med Kumo gård, som också styrdes av danskarna och Sören Norby. Därtill har ett flertal klippingar hittas kring historiska bytomter, bland annat i Luukela Raakkulahti och Satalahti Vainio i Uleåborg i Norra Österbotten, i Vasatrakten och i Nykarleby i Österbotten, i Kurikka i Södra Österbotten samt enstaka exemplar i Savolax och södra Karelen.

Av de klippingarna som har hittats med metalldetektor är endast fem av Gustav Vasas svenska typer (Fig. 4). Fyra tillhör den bättre typen, som kan antas höra till den första utmyntningen i Danmark. Varianten med tre ringar har hittats i åtminstone fyra fall, i fynd från Kimito, Virmo, Raseborg och Tavastehus (Fig. 5).

De övriga 387 är underhaltiga klippingar som inte med säkerhet kan bestämmas som danska eller svenska. Utifrån klippingarna i Västerås-fyndet gjorde Bengt Hemmingsson en typindelning av mynten baserat på utformningen av kungens hand.[30] I depåfynd bevaras mynt vanligtvis något bättre, men oftast är de strö-funna klippingarna så slitna och anfrätta att små detaljer inte går att urskilja. Åren 2019–23 gjordes ett försök att typbestämma de nyfunna klippingarna närmare enligt Hemmingssons indelning (se Tabell 1). Av 362 klippingar var det dock enbart 66 (18,2 %) som var i tillräckligt gott skick för att

FIGUR 4. Klipping präglad av Gustav Eriksson i Hedemora. Metalldetektorfynd från Nousis i Egentliga Finland. KM 46296:1. Bild: Frida Ehrnsten.

FIGUR 5. Klipping med tre ringar. Metalldetektorfynd från Tavastehus. Bild: Frida Ehrnsten.



FIGUR 6. Fördelning mellan svenska och danska klippingar i de finska lösfynden.

bildmotiven skulle kunna analyseras närmare. Fördelningen mellan de enligt Hemmingsson danska och svenska klippingarna var förvånansvärt jämn, 32 respektive 34.[31] Av de troligtvis svenska klippingarna är över hälften (20 exemplar) av Hemmingssons typ A8, följt av typen A11 (13 exemplar). Bland de troligtvis danska typerna är variationen större, men vanligast förekommer typerna A3, A6 och A7. I Västeråsfyndet är den vanligaste förekommande danska typen A1, men i de nya finska fynden finns endast fyra sådana registrerade. Andelen typbestämda klippingar är så låg att det inte går att dra några långtgående slutsatser baserat på fynden. De danska och svenska klippingarna verkar dock också geografiskt följa en jämn fördelning (Fig. 6).

Innan de nya metalldetektorfynden var 1500-tals klippingar rätt sällsynta i det finska fyndmaterialet. Sammanlagt handlar det om endast 116 klippingar (se Tabell 2). Av dessa är 16 från depåfynd och de övriga funna under arkeologiska utgrävningar, medan ensamfunna mynt och åkerfynd nästan helt saknades innan användningen av metalldetektorer blev vanligare. Vid utgrävningar av Domkyrkotorget i Åbo hittades år 2006 under ett husgolv 14 klippingar.[32] I övriga depå-

	DANSKA TYPER							SVENSKA TYPER			
	A1	A2	A3	A4	A6	A6/A7	A7	A8	A9	A11	TOTALT
Egentliga Finland		1	5	2	3	1	4	8	1	5	30
Satakunta	1		1		1		1	3		2	9
Nyland								1		2	3
Tavastehus	2				1	1	2	2		2	10
Österbotten			2		1	1		6		1	11
Savolax										1	1
Karelen	1					1					2
TOTALT	4	1	8	2	6	4	7	20	1	13	66

TABELL 1. Klippingar funna 2019–23 enligt Bengt Hemmingssons (1973) typindelning.

DEPÅFYND (tpq./totala antalet mynt)	16
Åbo, Domkyrkotorget (1518/14)	14
Åbo, Viinamäki (1546/95)	1
Muhos, Österbotten (1544/923)	1
KYRKOR	9
Finström, Åland	2
Nousis, Eg. Finland	1
Virmo, Eg. Finland	1
Kyrkslätt, Nyland	1
Raumo, Satakunta	1
Karkku (Sastmola), Satakunta	1
Karlö, Österbotten	1
Pedersöre, Österbotten	1
KONVENT	9
Kökar, Åland	1
Raumo, Satakunta	3
Nådendal	5
BORGAR	59
Kastelholm, Åland	12
Åbo, Eg. Finland	11
Kustö, Eg. Finland	32
Slottsmalmen (Raseborg), Nyland	2
Viborg, Karelen	2
STADSMILJÖ	14
Rettigska tomten, Åbo	1
Åbo Akademi	2
Domkyrkotorget, Åbo	2
Västra Kajen, Åbo	1
Slottsgatan 1-3, Åbo	1
Pinella, Åbo	2
Salutorget, Raumo	2
Fisktorget, Raumo	2
Ulfsby stad	1
ÖVRIGA LANDSBYGDSMILJÖER	11
Prästgården, Finström, Åland	1
Kyrksundet, Hitis, Eg. Finland	3
Mankby, Esbo, Nyland	3
Barnets park, Hangö, Nyland	1
Kyrkvägen, Vichtis	1
Luonnonmaa, Nådendal	2
SAMMANLAGT	188

TABELL 2. Tabell över registrerade klippingar från depå- och utgrävningsfynd.

fynd från tidigt 1500-tal ingår endast två klippingar, vilket visar att underhaltiga mynt inte sparades för framtida bruk. Om flera klippingar hittas på ett begränsat område kan det röra sig om ett spritt depåfynd eller en tappad penningpåse. Bland de nya metalldetektorfynden gäller detta till exempel en åker i Tenala i Raseborg, där det hittats åtta klippingar, varav två av typen med tre ringar.

Något förvånande är klippingarna inte desto vanligare i kyrkfynden, sammanlagt har endast nio dokumenterats. Vanligtvis hittas just mynt av lägsta möjliga värde i kyrkorna, men detta verkar inte gälla klippingar. Det bör dock beaktas att mynt från 1500-talets början även i övrigt är rätt sällsynta bland kyrkfynden, och att klippingarna utgjorde ett kortvarigt fenomen i mynthistorien. I de svenska fynden är klippingarna vanligare i klostermiljö.[33] I Finland är antalet klippingar på klostren inte stort, men jämfört med kyrkorna är de trots allt vanligare i klosterfynd. Från franciskankonventet på Kökar finns en klipping, från franciskankonventet i Raumo tre och från birgittinerklostret i Nådendal fem.

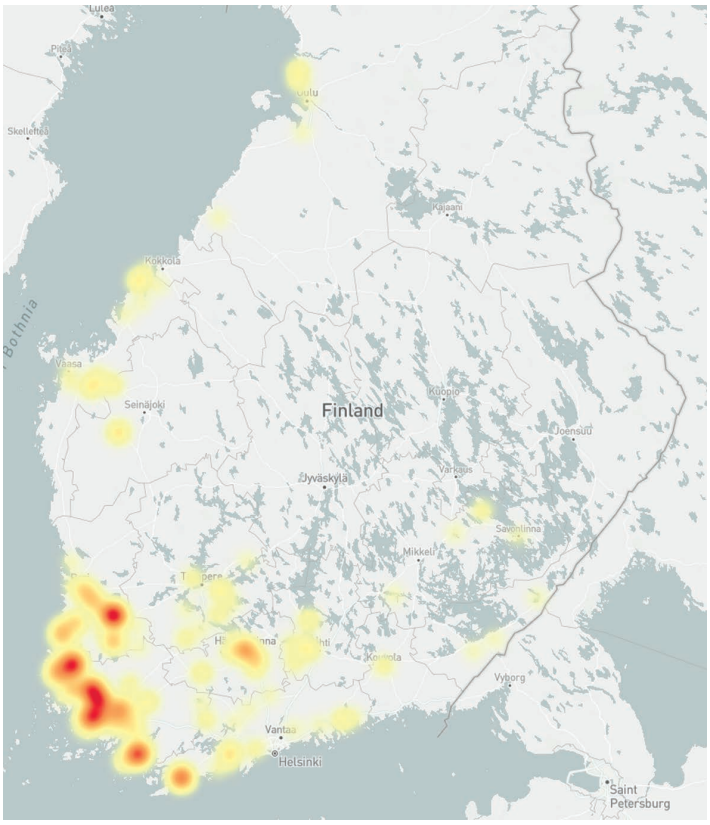
I borgmiljö är klippingarna däremot betydligt allmännare, vilket är naturligt med tanke på att de flesta slotten låg under danskt herravälde i början av 1520-talet. Från Kastelholm finns 12 exemplar, från Åbo slott 11 och från Tavastehus åtta. På Kustö biskopsborg är antalet hela 32, vilket lätt kan förklaras av att borgen fungerade som Sören Norbys bas i Finland och att det eventuellt till och med präglades klippingar på platsen. I Nyland är antalet mindre, endast två exemplar har återfunnits vid Slottsmalmen invid Raseborgs slott. Fynden från Viborgs slott är väldigt bristfälligt dokumenterade, men åtminstone två klippingar ingår i slottets fyndmaterial.

Vid utgrävningar i Åbo stad har nio klippingar hittats, i Raumo fyra och vid vad som en gång var Ulfsby stad en. Vid Kyrksundet i Hitis fanns i början av 1500-talet såväl en kyrka som en hamn och där har åtminstone tre klippingar hittats. Mynt är sällsynta fynd vid utgrävningar av medeltida bytomter, men vid Mankby bytomt i Esbo har tre klippingar registrerats och från Barnets park i Hangö en. Före 2013 bestod övriga ströfunna klippingar av ett mynt som hittats vid vägen till kyrkan i Vichtis i Nyland, två exemplar från Luonnonmaa i Nådendal och en från prästgården i Finström på Åland.[34] Som ovan nämnts har metalldetektorfynden sedermera ökat antalet klippingar betydligt och sammanlagt uppgår deras antal nu till 502. Dessutom ökar mängden årligen med tiotals mynt, ifall trenden fortsätter som tidigare. Klippingarna är därmed betydligt vanligare fynd i Finland än i de övriga skandinaviska länderna, särskilt med tanke på hur stor proportion de utgör av de medeltida myntfynden i sin helhet. I fyndmaterialet från bland annat Tallinn ingår däremot inte en enda klipping, vilket visar att de undermåliga mynten inte spreds utanför Danmark och Sverige (inklusive Norge och Finland) ens som råmaterial.[35]

FRÅN UNDERHALTIGA MYNT TILL VÄRDELÖS METALL

Präglingen av klippingar inleddes i Danmark år 1518, men före Sören Norbys trupper ser mynten inte ut att ha spridits till Finland. I skrivare Knuts register över de värdesaker som Jens Mattson den 28 augusti 1521 förde med sig från Tavastehus slott till Stockholm nämns en mängd mynt. Bland dessa fanns dock inga klippingar, utan det framgår uttryckligen att Hinrich Slagheck, Kristians hövidsman på Stockholms slott, mottog 225 mark i danska klippingar som hade växlats från de 200 mark enligt rigisk räkning som ingick i den ursprungliga försändelsen.[36] I testamenten, skuldebrev och köpebrev som finns bevarade från denna tid finns inte heller några andra omnämnanden som specifikt skulle beröra klippingar.

Efter att Sören Norbys trupper landsteg i Finland måste klippingarna ha spritt sig explosionsartat. Före metalldetektorernas tid tydde fynden på att klippingar främst cirkulerade kring de borgar som danskarna kontrollerade. Detta verkade stödja



FIGUR 7. Värmekarta över klippingfynd i Finland åren 2013–23. Kartan är genererad i webbtjänsten CoinSampo.

teorin om att klippingarna huvudsakligen användes av legosoldater, som fick större delen av sin lön betald i dessa mynt. De nya metalldetektorfynden visar dock att klippingarna spreds till alla delar av landet, både mot norr och öster (Fig. 7), och att de även hamnade i vanligt folks fickor. Även om de underhaltiga mynten säkerligen väckte missnöje här också, tvingades man i brist på bättre mynt att acceptera dem som tillfälliga betalningsmedel. Jämfört med hur sällsynta medeltida mynt överlag är i Finland utgör klippingarna också en relativt stor andel av mynten från stadsmiljöer.

Klippingarnas usla värde var ett välkänt faktum och det är därför inte förvånande att de är sällsynta i depåfynd även i Finland. Det var nog ingen som ville spara mynt vars nominella värde kraftigt översteg metallvärdet. Att klippingarna är sällsynta också i kyrkfynden är ett intressant fenomen, eftersom mynt av lägsta värde vanligtvis hittas i kyrkor. Det har till och med föreslagits att människor medvetet gjorde sig av med värdelösa mynt i kyrkorna.[37] Klippingarnas sällsynthet i kyrkfynd kan säkert åtminstone delvis förklaras av Gustav Vasas kyrkoreduktion, som kan ha lett till ett tillfälligt minskande av myntoffer i kyrkorna strax efter att klippingarna förlorat sitt värde.

Lösfynd i det arkeologiska fyndmaterialet kan ses avspegla ett ökat myntbruk. Fynden karaktäriseras dock ofta av småmynt med lågt värde och snabb omloppshastighet, eftersom sådana mynt lättare blev kvar i marken. Tidvis stöter man också på mynt som helt förlorat sitt nominella värde.[38] Normalt sett utgick man dock från att återvända metall från präglade mynt. Detta gjordes genom myntindragningar, ett vanligt fenomen redan under tidig medeltid. Som Keld Grinder Hansen konstaterat, lämnar en stor myntproduktion inte alltid lika stora spår i det arkeologiska fyndmaterialet, särskilt inte under medeltiden då myntindragningar var vanliga.[39] Indragningarna krävde dock en stor arbetsinsats, och var svåra att genomföra, särskilt under ostabila tider och när det rådde brist på mynt. Källor från tidigt 1500-tal vittnar ofta om en stor brist på pengar i Finland, och därför fick också bland annat livländskt mynt cirkulera fritt utan kontroll. [40] Det rådde med andra ord andra regler än i rikets västra halva.

Som tidigare nämnts har man kunnat visa att indragningen av klippingmynt var effektiv i Danmark, och delvis även i Norge och Sverige. Fynden i Finland visar däremot tydligt att indragningen inte var särskilt effektiv i rikets östra del, där avståndet till rikets centrum var större och myntbristen var påtaglig. Även om några hundra mynt endast utgör en bråkdel av den ursprungliga mängden som strömmade in i landet, är klippingarna numera den överlägset vanligaste medeltida mynttypen i det arkeologiska fyndmaterialet. Klippingarna kan möjligen ha cirkulerat något längre som betalningsmedel i Finland än i övriga delar av riket, men det kan inte ha rört sig om någon betydligt mera långvarig cirkulation, eftersom de varken godkändes för skattebetalning eller i internationell handel. Efter att indragningarna genomförts fanns det inte längre någon möjlighet att byta in mynten mot bättre mynt. En del av metallen utnyttjades säkert och mynten smältes ner, men på grund av den låga silverhalten var inte ens detta lönsamt då det gällde mindre mängder klippingar. Troligtvis hamnade de värdelösa mynten

FIGUR 8. En perforerad dansk klipping, metalldetektorfynd från Letala. Perforerade klippingar är ovanliga i finska fynd och det finns inte heller andra tecken på att mynten tydligt skulle ha makulerats. KM 42492: 2. Bild: Frida Ehrnsten.

därför bland övrigt avfall, där de sedan blev kvar i städernas avfallslager eller spreds ut på åkrarna som omgav bytomterna tillsammans med annat avskräde. Det finns inga tydliga tecken på att klippingarna systematiskt skulle ha makulerats i det finska fyndmaterialet, och hittills har man endast funnit en perforerad klipping (Fig. 8). Klippingarnas utformning skiljde sig från övriga mynt och det verkar inte ha funnits något behov av att särskilt markera deras bristande nominella värde.

SLUTORD

Klippingarna är ett bra exempel på hur bristfälligt det arkeologiska fyndmaterialet är. Den sammanlagda utmyntningen i Danmark och Sverige kan ha uppgått till 100 miljoner och även i Finland måste miljontals klippingar ha cirkulerat. Det sammanlagda antalet fynd i hela Norden är ett tusental, vilket utgör enbart några promille av de klippingar som utgavs. Samtidigt belyser fynden hur väl man tog hand om sina mynt under medeltiden och ännu under Gustav Vasas tid. I depåer sparade man mynt för framtiden, men då handlade det om gott mynt som inte riskerade att förlora sitt värde inom en snar framtid. I oroliga tider hände det att penninggömmor av en eller annan orsak blev kvar i marken, men i Finland är antalet medeltida depåfynd anspråkslöst. Detta betyder inte att mynt inte cirkulerade, utan vittnar om en konstant brist på mynt ända fram till mitten av 1500-talet.

I kyrkor och borgar kan mynt ha tappats under trägolven, men i övrigt var mynt, trots sin ringa storlek, inte objekt som lätt förlades. Gott mynt kunde användas som metall även efter sin egentliga giltighetstid, och det var enbart när mynt förlorade såväl sitt mynt- som sitt metallvärde som de förvandlades till skräp. Det vi undersöker idag är sällsynta exempel på bortglömda eller borttappade mynt, eller sådana exemplar som förvandlats från mynt till värdelöst metallskrot.

Jämfört med närliggande länder är det medeltida fyndmaterialet i Finland ofta ytterst anspråkslöst. När det kommer till de underhaltiga klippingarna kan vi dock för en gångs skull stoltsera med den största mängden mynt. Troligtvis är detta bara ett tecken på en misslyckad myntindragning, men oavsett detta är de usla klippingarna ett fascinerande fenomen. Klippingarna är också ett konkret bevis på att stora mängder mynt, åtminstone vid vissa tidpunkter, cirkulerade även i den östra rikshalvan under medeltiden.

Frida Ehrnsten, FD, är arkeolog och ansvarar för de numismatiska samlingarna vid Finlands Nationalmuseum. Det var Georg som under studietiden väckte hennes intresse för historisk arkeologi, vilket sedan fördjupades under "gradu-sparringen". Georg var också till ovärderlig hjälp i arbetet med hennes avhandling, som behandlar medeltida myntbruk i Finland.

NOTER

1 Se Ehrnsten 2019.
2 Alla myntfynd dokumenteras i Finlands nationalmuseums numismatiska samlingars arkiv. I februari 2024 lanserades webbtjänsten CoinSampo, som gör detta material öppet tillgängligt: https://rahasampo.ldf.fi/.
3 Svensk översättning i Lagerqvist 2020: 105.
4 Hemmingsson 1973: 61–72.
5 Se Moesgaard 2020.
6 Se Grinder-Hansen 1994: 70–3; Hemmingsson 1973: 61–74; Moesgaard 2020: 153–9; Märcher 2018: 462–7.
7 Moesgaard 2020: 154–5.
8 Galster 1972: 27–8; Märcher 2018: 463.
9 Galster 1972: 29–30; Moesgaard 2020: 153.
10 Eriksson 2017: 14–6.

11 Hemmingsson 1973: 61.
12 Lagerqvist 2020: 106.
13 Se Hemmingsson 1973.
14 Hemmingsson 1973: 63.
15 Moesgaard 2020: 154.
16 DF 6081–6082; Hemmingsson 1973; Moesgaard 2020: 154.
17 DF 6092.
18 DF 6089.
19 Larsson 1986: 65.
20 Hemmingsson 2016: 69–70; Leimus 2008: 124–30.
21 Oravisjärvi 2023: 106–7.
22 Moesgaard 2020: 155.
23 Lagerqvist 2020: 107.
24 Appelgren 1933: 59–60; Moesgaard 2020: 154.
25 Grinder-Hansen 1994; Moesgaard 2020: 156.
26 Horsnaes 2020; Moesgaard 2020: 156; Märcher 2018: 464–7.
27 Gullbekk 1995; Moesgaard 2020: 156; Märcher 2018: 455.
28 Eriksson 2013: 12 & 15.
29 Moesgaard 2020: 157.
30 Hemmingsson 1973.
31 Uppgifterna baserar sig på definieringar som gjorts av undertecknad. Katalogerna finns bevarade i Finlands numismatiska samlingars arkiv, mynten har inlösts till de arkeologiska samlingarna eller returnerats till upphittarna.
32 Järvi 2009; TMK 22367.
33 Eriksson 2013.
34 Se Ehrnsten 2019 för en fullständig katalog över medeltida mynt i finska fynd.
35 Leimus 2024, e-post 2.5.2024. Enligt Leimus är det högst otroligt att de undervärdiga klippingarna skulle ha godkänts som betalningsmedel i Tallinn. Deras avsaknad visar dock att de inte heller i misstag hamnat i stadens avfallslager.
36 DF 6055; Ehrnsten 2019: 72; Sarvas 2000: 68–70.
37 Nurmi 2011: 124–6.
38 Blackburn 1989; Moesgaard 2006: 235, 245–6; Nurmi et al. 2009: 301–13.
39 Grinder-Hansen 1994: 70–3.
40 Ehrnsten 2019: 236.

KÄLLOR OCH LITTERATUR

Förkortningar

DF = Diplomatarium Fennicum. Databasen av finska medeltida dokument. (https://df.narc.fi/, 14.9.2024).

KM = (Finlands nationalmuseum), Museiverket, arkeologiska samlingarna.

RK = Finlands nationalmuseum, numismatiska samlingarna.

RKHY = Helsingfors universitets mynt- och medaljsamling, Finlands nationalmuseum, numismatiska samlingarna.

TMK = Åbo museicentral, samlingar.

Digitala källor

CoinSampo. I webbtjänsten CoinSampo finns information över de ensamfunna mynt som rapporterats till Museiverket åren 2013–23. (https://rahasampo.ldf.fi/, 14.9.2024).

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Janne Harjula

HOUSUSUKISSA HAUDATUT
Rengassolkia Koroisten kirkkomaasta

ABSTRACT

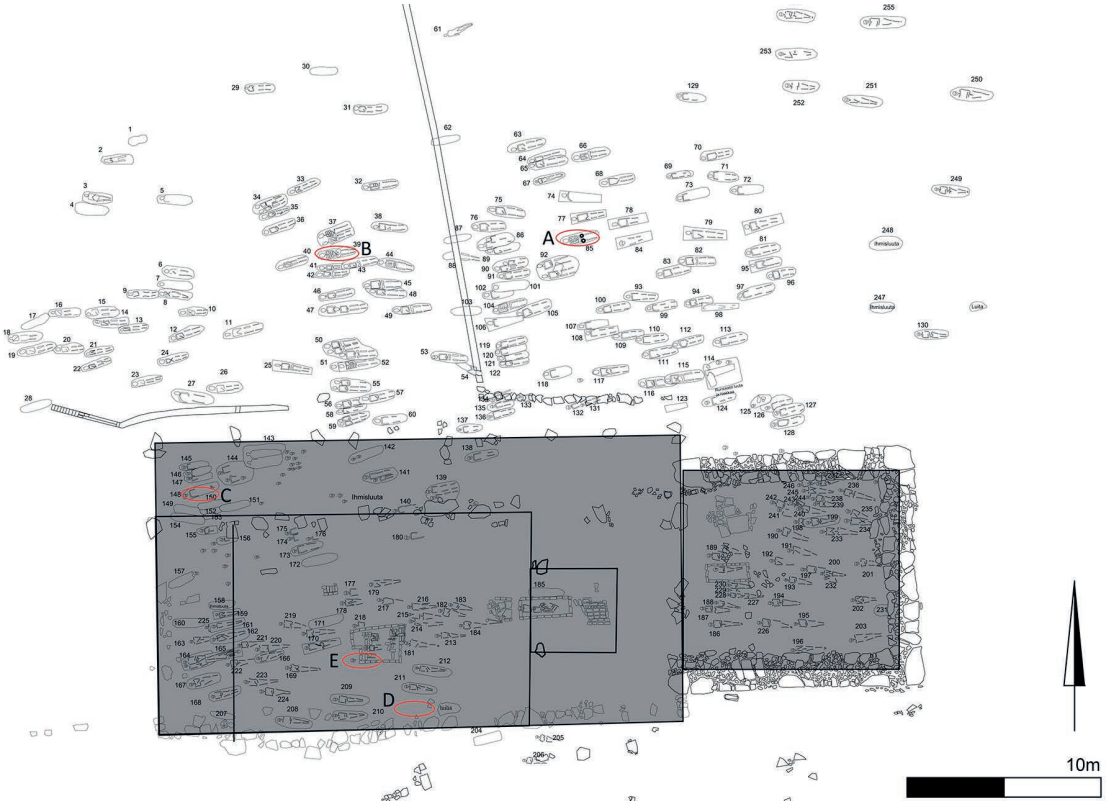
The paper discusses the circular buckles found in pairs from some burials excavated in Koroinen, a 13th–14th century episcopal see site in Turku, SW Finland. Based on the comparative archaeological material from Britain and elsewhere in Europe, the buckles most probably represent hose buckles i.e., they attached the hose to the undergarment of the male dress using buckles and straps. The finds seem to represent dress accessories of men with a high ecclesiastical status, and who were buried fully clothed, unlike common people who usually got a modest, shrouded burial. Furthermore, the circular buckles found in Koroinen seem to be the first archaeological indication of the use of hose as part of the men's clothing in medieval Finland.

Asiasanat: keskiaika, Koroinen, pukeutuminen, rengassolki, housusukat

JOHDANTO

> *"Vaikka Koroisissa näkyykin selvästi kristillinen hautaustraditio ilman hauta-antimia tai juhlapukuihin puettuja vainajia, on Koroisten hautojen joukossa tapauksia, joissa on jäänteitä vainajien pukemisesta ja varustamisesta. Yhdellä kirkon itäpuolen muuratun rakennuksen kohdalta löydetyllä vainajalla oli vyötärön kohdalla nelikulmainen, rautainen vyönsolki. Tavallisempia ovat muodoltaan pyöreät ja pyöreästä tai soikeasta vartaasta tehdyt rengassoljet, joita useilla vainajilla sekä kirkon sisällä että pohjoispuolisella kirkkomaalla oli asetettu molemmille lanteille."*[1]

Moni seikka on jäänyt askarruttamaan *Koroinen: Suomen ensimmäinen kirkollinen keskus* -kirjan ilmestymisen (2018) jälkeen. Erityisesti hautauksiin liittyy edelleen monia vastausta vailla olevia kysymyksiä. Otan artikkelissani tarkasteluun ingressissä mainitut Koroisten piispanistuimen arkeologisissa kaivauksissa löydetyt ja talletetut rengassoljet ja pohdin, mitä tarkoitusta ne oikeastaan palvelivat. Nelikulmaisen soljen käyttötarkoitus on selvä: se on vyönsolki ja kertoo jo osaltaan, että jotkut Koroisten vainajista haudattiin vaatetettuina.[2] Mutta mikä merkitys oli pyöreillä rengas-



KUVA 1. Koroisten hautakartta, jossa punaisella ympyröitynä artikkelissa käsiteltävät solkihaudat. Kirjaimet A–E viittaavat taulukkoon 1. Harmaalla alueella merkitty puukirkko I (pienempi) ja puukirkko II (suurempi). Karttapohja, haudat ja kirkot: Ratilainen 2018, kuva 2.28.

soljilla, joita joillakin Koroisiin haudatuilla vainajilla esiintyy pareittain, yksi lantion molemmilla puolilla?

KOROISTEN KIRKKOMAA

Koroistenniemellä tehtiin arkeologisia kaivauksia 1800- ja 1900-lukujen vaihteessa ensin Hjalmar Appelgrenin (1898–99) ja sen jälkeen Juhani Rinteen (1900–02) johdolla. Kaivaukset kattoivat lähes kokonaisuudessaan vallin sisäpuolisen alueen. Kaivauksissa löydettiin kahden eriaikaisen ja -kokoisen puukirkon jäännökset (Kuva 1) sekä Aurajoen rannasta kahden muun kivi- tai tiilirakennuksen perustukset. Lisäksi havaittiin heikosti säilyneitä merkkejä puurakennuksista kirkon ja rantarakennusten väliltä. Rakennusten lisäksi kaivauksissa löytyi laajahko hautausmaa, josta ei ole enää fyysisiä jäännöksiä maan päällä. Hautausmaata koskevissa tulkinnoissa ollaan siis yli sata vuotta sitten tehdyn dokumentaation, silloin talteen otettujen löytöjen ja näytteiden sekä vertailuaineistojen varassa. Koroisissa kirkkomaa sijaitsi kirkon pohjoispuolella ja sen koko on ollut ainakin 800 neliömetriä. Hautoja kirkkomaahan ja kirkkorakennusten sisälle tehtiin vähintään 304, mutta vainajien lukumäärä on ollut tätä suurempi, koska samassa multahautakuopassa saattoi olla kaksi tai kolmekin vainajaa ja myös tiilimuurihautoihin voitiin tehdä useampi hautaus (Kuva 1). Kirkon runkohuoneen itäosassa ei ole jostain syystä dokumentoitu lainkaan hautoja. Hautoja ei ole havaittu myöskään kirkon länsi- tai itäpuolelta. Eteläpuolellakin on vain muutama hauta.[3]

Keskiajalla Koroisiin haudattiin parin sadan vuoden ajan kirkollisia merkkihenkilöitä, mutta hautojen suuren lukumäärän perusteella myös muita henkilöitä. Koroinen ei koskaan toiminut seurakuntakirkkona vaan siinä tehtävässä toimi Räntämäen eli Maarian kirkko jo 1200-luvun alusta alkaen. Koroisten 1200-luvulla vihitty piispankirkko toimi edelleen 1300-luvulla todennäköisesti piispankartanon pyhättönä ja hautausmaana. Kirkkomaa jäi pois käytöstä samaan aikaan kuin kirkkokin, 1400-luvun alussa.[4]

Kaivausmuistiinpanojen mukaan hautojen vainajat olivat pääasiassa lähes maatuneita, eikä esimerkiksi keskiruumiin luita useinkaan ollut säilynyt. Rinteen kuvauksissa on kuitenkin runsaasti mainintoja pääkalloista ja pitkistä raajojen luista. Kaivauksissa esiin tulleet ihmisluut ilmeisesti haudattiin uudelleen Turun kirkkomaalle, joten ne eivät enää ole tutkimuksen piirissä.[5] Esineistöllä on tämän takia erityisen suuri arvo hautauksiin liittyviä kysymyksiä ja haudattujen identiteettiä ratkottaessa.

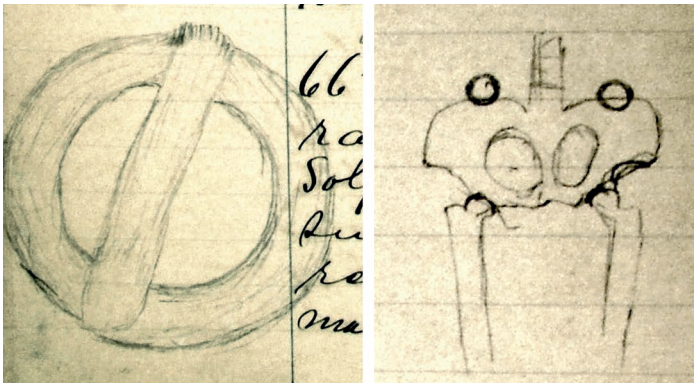
KOROISTEN SOLKIHAUDAT

Rengassolkien kuvaukset ja löytöjen kontekstit on esitetty taulukossa 1 ja solkien sijainti hautausmaalla kuvassa 1. Hautausmaalta dokumentoitiin yhteensä neljä rengassolkiparia ja yksi yksittäinen rengassolki. Vaikka vain kahdessa soljessa (:665) neula on säilynyt kokonaan (Kuva 2), kaikissa muissakin on röntgenkuvien perusteella jäännöksiä neulan kannasta soljen kehässä. Sen perusteella

TUNNUS	LÖYTÖNRO	KUVAUS	KONTEKSTI	MIKROSKOOPPIANALYYSI
A	H 52100: 123	Kaksi rautaista rengassolkea. Kehän halkaisija 3,5 cm ja soikean vartaan paksuus 5–7 mm.	Ruutu 154–178 kirkon pohjoispuolella. Soljet vyötäisten kohdalta.	Solkeen kiinnittyneenä mineralisoitunutta kangasta ja nahan lihapuolta. Löydettäessä soljessa oli ihmisluuta kiinni.
B	H 52100: 271–274	Kaksi rautaista rengassolkea (:271, 272), rautainen vaatesolki? (:273) ja rautavarras (:274). Rengassolkien kehien halkaisija 3,5 cm ja soikean vartaan paksuus 6–8 mm. Kolmas solki? (:273) avoin ja sen toisessa päässä 17 mm:n levennys (päätenuppi?). Mitat samat kuin muissa soljissa. Rautakiskon mitat 86 x 13 mm.	Ruutu 182–190 kirkon pohjoispuolella. Soljet (:271 ja :272) oikean ja vasemman lanneluun yläsyrjän päällä. Kolmas solki (:273) muita ylempänä selkärangan ja vyötärön kohdalla, oikean käden alla. Rautavarras (:274) vinossa solkien (:272 ja :273) välissä (Harjula & Moilanen 2018: kuva 2.34).	Pinnalla mineralisoitunutta tekstiiliä. Löydettäessä solkiin oli tarttunut ihmisluuta.
C	H 52100: 385 & 386	Rautaisen rengassoljen puolikas ja kokonainen rengasolki. Kehien halkaisija 4–4,2 cm ja lähes nelikulmaisen, mutta pyöristetyn vartaan paksuus 8 mm.	Ruutu 146–150 kirkon pohjoispuolella. Löytyivät vyötäisten kohdalta.	Kehän pinnalla mineralisoitunutta kangasta; haudasta myös ruutukankaanpala, jonka ajoitus 1270–1400 AD (Kirjavainen 2018).
D	H 52100: 610	Rautainen rengassolki. Kehän halkaisija 4,4–4,7 cm. Soikean vartaan paksuus 6–7 mm.	Ruutu 54–24; kirkon runkohuoneen eteläseinän läheltä. Ei selkeää kytköstä hautaukseen.	Kehässä mineralisoitunutta kangasta sekä solmu, josta nauha/nyöri ollut kiinni renkaassa.
E	H 52100: 665	Kaksi rautaista rengassolkea. Kehien halkaisija 5,2 mm. Soikean vartaan paksuus 10 mm.	Ruutu 22–16, tiilihauta 3 kirkon runkohuoneessa. Lantion kohdalla molemmilla puolilla.	Solki 1: kuidun painanteita neulassa ja kehässä. Solki 2: tekstiilipainanteita kehän pinnalla.

TAULUKKO 1. Rautaiset rengassoljet Koroisten haudoista. Rengassolkihaudoista ei solkien ja taulukossa mainitun rautavartaan lisäksi löytynyt muita esineitä. Löytöpaikat A–E merkitty kuvaan 1. Mikroskooppianalyysin tehnyt Heini Kirjavainen.

esineet voidaan määrittää yksiselitteisesti soljiksi eikä esimerkiksi vyörenkaiksi. Kaikkien solkien muoto on pyöreä ja kehien poikkileikkaukset ovat soikeat. Sekä solkien kehien halkaisijoissa (n. 35–50 mm) että vartaan paksuuksissa (5–10 mm) on jonkin verran vaihtelua. Kaikki soljet ovat rautaa. Olennaista on, että jokaisen vainajan kohdalla parilliset soljet ovat keskenään täysin samanlaiset. Solkipareista kolme löytyi hautausmaalta kirkon pohjoispuolelta ja yksi pari kirkon sisältä runkohuoneesta tiilihaudasta 3. Yksittäinen solki löytyi runkohuoneen eteläseinän läheltä, joko kirkon sisä- tai sen ulkopuolelta (Kuva 1). Ainoastaan yhden solkihaudan pystyy ajoittamaan tarkemmin. Haudasta löytyneen tekstiilin kalibroitu AMS-ajoitus sijoittuu välille 1270–1400 AD. Solkien sijainti lantioluiden päällä ilmenee kuvasta 3.



KUVA 2 (vasemmalla). Rengassolki tiilihaudasta 3. Kuva: Löytöpiirros Juhani Rinteen kaivausmuistiinpanoista, löytö H 52100:665.

KUVA 3 (oikealla). Rengassoljet (H 52100:123) kirkon pohjoispuolisessa haudassa. Rinteen kaivausmuistiinpanojen (1900–02) mukaan "Renkaat löytyivät luurangon vyötäisten kohdalta, toinen toisen, toinen toisen lanneluun päältä, jossa ne olivat lappeellansa vartaloon nähden aivan samalla korkeudella. Mitään muuta ei haudasta eikä renkaiden yhteydestä tavattu." Kuva: Piirros Juhani Rinteen kaivausmuistiinpanoissa, löytö H 52100:123.

HOUSUSUKKIEN SOLKIA?

Mahdollisen ratkaisun solkien käyttötarkoitukseen antaa Roberta Gilchristin ja Barney Sloanen tutkimus Iso-Britannian keskiaikaisten luostarien hautausmaista. Lähinnä 1300-luvulle ajoitetuista miesten haudoista on lukuisia esimerkkejä vainajan lantiolta löytyneistä rengassolkipareista (Kuva 4).[6] Esimerkkejä parillisista rengassoljista vainajien lanteilla on Britteinsaaria lähempääkin. Lähin verrokki lienee *Korsbetningen*, jonka hautauksista löytyi useita rengassolkipareja. Heinäkuussa 1361 Visbyn edustalla käydyssä taistelussa surmansa saaneet haudattiin vaatteissaan ja varusteissaan joukkohautoihin, joita tutkittiin laajasti arkeologisin kaivauksin 1930-luvulla.[7] Kaukaisempi esimerkki on Grönlannin Herjolfsnes, jonka pääasiassa 1200- ja 1300-luvuille ajoittuvista hautauksista on löytynyt vastaavia solkia.[8] Vakiintunut tulkinta näille arkeologisille havainnoille on, että soljet olisivat liittyneet lähinnä miesten käyttämien housusukkien[9] (eng. *hose*) kiinnittämiseen. Solkien käyttäminen sukkien kiinnittämiseen olisi ollut lähinnä 1300-luvun alkupuolen ilmiö, ja vuosisadan toisella puoliskolla soljet olisivat muodin muuttuessa, mekkojen lyhentyessä ja housusukkien

KUVA 4. Housusukkien kiinnittämiseen käytetyt parilliset rengassoljet luostarin hautausmaalla *in situ*. St Mary of Merton, Surrey, Iso-Britannia. Kuva: Gilchrist & Sloane 2005, fig. 45.

KUVA 5. Hososukkia ja alusvaatteita keskiajan kuvataiteessa. A – *Codex Aboensiksen* kuvitusta 1400-luvun alkupuolelta. Hososukkia puetaan. Oikean jalan housun yläosassa näkyy paulanauha, jossa voi mahdollisesti erottaa jopa hahmotelman pyöreästä soljesta. Kuva: Ahlbäck et al. 1974, kuvasivu 42. B – Hososukat ja alusvaate, jonka vyöhön hososukkien yläosa on kiinnitetty (paulanauhoilla?). Vyö jää piiloon alusvaatteen yläosan taitellun laskoksen alle. Käsikirjoituksen kuvitusta, *Les voeux du paon*. MS G.24 fol.42r., noin 1345–1350. Kuva: Leo 2013, fig. 90. C – Alusvaate ja siihen nauhoilla kiinnitetyt hososukat. Käsikirjoituksen kuvitusta, *The Hours of Catherine of Cleves.* MS M.917/945, 252–253, noin 1435–1460. Kuva: The Morgan Library. D – Alusvaate, jossa vyö ja vyönsolki. *Salita di Gesù Cristo al monte Calvario,* noin 1410. Kuva: Carloni 2020.

pidentyessä jääneet pois käytöstä ja kiinnittäminen olisi tapahtunut pelkkien nauhojen (eng. *points*) avulla (Kuva 5a–c).[10]

Gilchristin ja Sloanen mukaan soljet liittyivät hososukkiin seuraavalla tavalla. Lantion peittävän alusvaatteen (keskieng. *breche,* suom. *kaatiot*[11]) piti ylhäällä vyö (muinaisskand. *brokapelti*, keskieng. *breke-belt, brygyrdyl,* eng. *breechgirdle*).[12] Vyön molemmille sivuille oli kiinnitetty paulanauhat, jotka päättyivät alapäässään rengassolkiin. Solkiin kiinnitettiin hososukkien suu/yläosa.[13] Vaikka solkihaudoista onkin runsaasti esimerkkejä, solkien käytön tarkemmat yksityiskohdat eivät ole selvillä. Paulanauhoista tai hososukista ei haudoissa juurikaan ole säilynyt merkkejä. Myös kirjallisten tai kuvallisten lähteiden tuki alusvaatteiden, vöiden, paulanauhojen ja solkien yhdistelmälle on erityisesti solkien osalta niukkaa ja viitteellistä.[14]

Koroisten vainajien solkien horisontaalisijoittelu näyttää olleen sama kuin verrokkiaineistossa, soljet ovat reisiluun linjalla. Solkien korkeussijainti vertailuaineistossa vaihtelee, mutta se näyttää pääsääntöisesti olevan reisiluun yläpään ja lantion alaosan välillä eli hieman alempana kuin Koroisten vainajilla. Koroisissa soljet sijoittuvat lonkkaluun yläosan korkeudelle. Mitä tästä voi päätellä? Solkiin on voinut sekä Koroisissa että vertailuaineistossa kiinnittää *jotain* lantion alapuolelle, erikseen kummankin jalan kohdalle. Hososukat ovat tässä mahdollinen ja ilmeinen vaihtoehto. Solkien korkeampi sijainti voi selittyä esimerkiksi niin, että ne ovat olleet alusvaatteen vyön solkia (Kuva 5d),[15] jolloin soljet ovat paitsi kiristäneet vyön, myös tarjonneet kehillään paikat säädettäville ja helposti irrotettaville paulanauhoille. Paulanauhan yläpää olisi solmittu soljen kehään,[16] ja alapää ommeltu hososukkaan. Paulanauhan pituuden säätömahdollisuus olisi jäänyt ylhäälle vyönsolkien kohdalle ja hososukat olisi voinut riisua avaamalla solmut. Koska ilmasto-olot ovat olleet Pohjolassa keskiajallakin ankarat, hososukat olisi tarvittaessa voinut kiskoa lähelle alusvaatteen vyötä. Näin paljasta, tai vain alusvaatteen peittämää ihoa olisi jäänyt näkyville mahdollisimman vähän.

Brittitutkijoiden hahmottelema järjestys vyötäröltä alaspäin edeten olisi siis ollut alusvaatteen vyö – vyöhön kiinnitetty paulanauha – soljet – hososukka. Koroisissa järjestys on pikemminkin ollut alusvaatteen vyö & soljet – paulanauha – hososukka.[17]

JOHTOPÄÄTÖKSET

Solkia on vertailuaineistossa löytynyt lähinnä kirkonmiesten haudoista ja luostarien hautausmailta. Tämä ei kuitenkaan johtune siitä, että ainoastaan munkit ja kirkonmiehet olisivat käyttäneet vaatekappaleita, joihin rengassoljet kuuluivat. Syy on todennäköisemmin se, että kirkollisen säädyn jäsenet haudattiin usein puettuina, päällys- ja alusvaatteineen. ”Tavallisten” ihmisten kohdalla hautaaminen käärinliinoissa oli yleisempää. Soljet kuuluivat siis vaatekappaleisiin, joita haudatut olivat käyttäneet eläessään, ja jotka heillä oli päällä myös hautaan laskettaessa. Korsbetningenin kohdalla solkien löytyminen johtunee siitä, että taistelukentällä kuolleet haudattiin nopeasti niissä käyttövaatteissaan, jotka heillä oli haarniskojensa alla.[18]

Edellä esitetyn perusteella Koroisten vainajien lantiolta löytyneitä rengassolkia voitaneen tietyin varauksin käyttää paitsi 1) keskiajan vaatemuodista ja sen yksityiskohdista kertovana löytöryhmänä, myös 2) sukupuoli-indikaattorina, 3) statuksen ilmentäjänä ja 4) ajoittavana esinetyyppinä. Parilliset rengassoljet lantiolla kuuluisivat siis lähinnä 1200- tai 1300-luvulla vaatetettuina ja housusukissa haudattujen miesten hautoihin. Housusukat ja alusvaatteet solkineen ja paulanauhoineen olisivat luonnollisesti jääneet haudattavilla suurelta osin päällysvaatteiden alle piiloon. Puettuna hautaaminen indikoi henkilön korkeaa statusta, joka Koroisten ollessa kyseessä olisi lähinnä kirkollinen. Solkien esiintyminen vain neljässä tai viidessä haudassa satojen Koroisiin tehtyjen hautausten joukossa ei puhu solkihautausten yleisyyden puolesta. Solkihaudat liittävätkin kyseiset hautaukset poikkeavien hautojen pieneen ryhmään. Siihen voi laskea puettuina haudatut, hauta-antimia mukaansa saaneet tai muussa kuin tavallisessa laudoista kootussa arkussa haudatut vainajat.[19]

Kuinka yleistä housusukkien kiinnittäminen soljilla keskiajan Suomessa muuten oli, jää ainoastaan arvailujen varaan. Koroisten haudoista löytyneet rengassoljet kertovat joka tapauksessa kansainvälisten pukeutumistyylien nopeasta rantautumisesta Suomeen Koroisten ja myöhemmin Turun kaupungin kautta. Soljet ovat samalla ensimmäinen arkeologinen todiste miesten housusukkien käytöstä keskiajan Suomessa.

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1 Harjula & Moilanen 2018: 161.
2 H 52100: 517; Harjula & Moilanen 2018: 161.
3 Ratilainen 2018: 145–6.
4 Harjula et al. 2018: 322–5.
5 Ratilainen 2018: 147.
6 Gilchrist 2012: 71; Gilchrist & Sloane 2005: taulukossa 3 mainitut kohteet ja lähteet. Iso-Britannian rengassolkihautojen vainajat on määritetty poikkeuksetta miehiksi silloin kun määrittäminen on ollut osteologisesti mahdollista.
7 Thordeman 1939: 117–20, Figs. 117–8, 120.
8 Norlund 1924: 119.
9 Tässä artikkelissa käytetään kyseisestä *hose*-vaatekappaleesta Kustaa Vilkunan (1974: 126) *Codex Aboensiksen* kommentaareissa käyttämää housusukka-termiä.
10 Russell-Smith 1956; Ward-Perkins 1939: 275. Housusukat näyttävät kuuluneen pääasiassa miesten vaatetukseen. Oletuksena on, että naisten sukat ulottuivat korkeintaan polven korkeudelle ja ne oli kiinnitetty (sukka)nauhoilla säären ympäri (Blindheim 1958: col. 284; Pylkkänen 1956: Vilkuna 1974: 126). Koroisten läheltä, Ravattulan Ristimäen kalmistosta on 1200-luvun alkuun ajoittuva hautalöytöaineisto, jonka perusteella on

rekonstruoitu naisten kangassukat. Niille ei ole löytynyt vastinetta aikalaislöydöistä, mutta ne vertautuvat hyvin oletuksiin naisten housusukista. Vanutetusta villakankaasta valmistetut sukat ovat ulottuneet polven päälle ja sidottu säären yläosan ympäri (Honka-Hallila 2023; Karisto 2023; Riikonen 2023). Hose-termistä: Medieval Cloth and Clothing Lexis 2012a.

11 Pylkkänen (1956: 148–149): ”Keskiajalla pidettiin kaatioita, *brok*, lähinnä ihoa. Kaatiot kiinnitettiin tavallisesti vyöllä, ja ne jäivät piiloon sekä paidan että sen päällä pidetyn mekon alle.” [– –] ”*Housut* olivat oikeastaan kaksi pitkää joko jalkaterällistä tai -terätöntä sukkaa, jotka sidottiin nauhalla säären ympäri.” [– –] ”Miesten päällyspukimien lyhetessä 1300-luvun jälkipuolella ja housujen vastaavasti pidetessä polvien yläpuolelle ei niitä enää voitu kiinnittää pelkästään säären ympäri sitomalla, vaan ne solmittiin pauloilla joko röijyn alareunaan tai kaatiovyöhön.” Kaatiot-termistä myös Schwindt 1893: 137; Talve 1979: 163; Vuorela 1998. Housusukista myös Lempiäinen 2014: 33.

12 Blindheim 1958: col. 281; Bradley 1967; Medieval Cloth and Clothing Lexis 2012b: Russell-Smith 1956: 218.

13 ”A particular arrangement of dress accessories can be seen in burials that are accompanied by two large (40–48 mm diameter) annular buckles positioned between the mid point of the thigh and the hip. These have been found in a number of locations, both at religious houses and in secular cemeteries, invariably with males when the sex can be identified” [– –] It has been suggested that these may have been shroud buckles; this is unlikely. Their proper function was elucidated nearly fifteen years ago as being hose buckles (Russell. Smith 1956). The reason that they are found so low on the thigh, sometimes ‘balanced’ precisely on the femurs, is related to the complexities of the medieval dress. The ‘breche’ was a form of undergarment used to cover the hips and pelvic region, and held up by a belt around the waist. From either side of this belt hung straps that terminated in buckles. These in turn were used to support the hose or trouser.” [– –] ”She [Russell-Smith] further noted that a new means of supporting the hose was coming into fashion by 1365 and suggested that hose buckles may thereafter have been going out of fashion (Gilchrist & Sloane 2005: 85–86).

14 Piponnier & Mane 1997: Fig. 41–7, Fig. 15; Russell-Smith: Plate XVI.

15 Osassa Visbyn Korsbetningenin hautojen rengassoljista on nahkahihnan, todennäköisimmin vyön jäännöksiä (Egan & Pritchard 1991: 64–5; Thordeman 1939: Fig 120: 19–22). En ole löytänyt esimerkkejä keskiaikaisista kaksisolkisista vöistä, mutta rakenteeltaan kahdesta hihnasta koostuva kaksisolkinen vyö ei ole kovinkaan monimutkainen. Esimerkki modernista kaksisolkisen vyön konstruktiosta: De Leon 2024.

16 Soljen H 52100:610 kehässä on jäännöksiä solmusta, joka voisi olla paulanauhasta (Taulukko 1).

17 Brittien hahmotteleman järjestyksen loogisuus tuntuu ontuvalta. Solkien löytyminen alempaa reisiluiden kohdalta on kiistaton, mutta mikä merkitys oli suurehkoilla rengassoljilla elleivät ne olleet ensisijaisesti vyönsolkia? Myöskään sitä, miten soljet olisivat kiinnittyneet suoraan housusukkiin, ei ole perusteltu.

18 Russell-Smith 1956: 218.

19 Harjula & Moilanen 2018.

LÄHTEET JA KIRJALLISUUS

Lyhenteet

H = Suomen kansallismuseo, historialliset kokoelmat

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Kristin Ilves

FOUR PIECES OF JEWELLERY FROM FOUR HOUSES AT BARTSGÅRDA

ABSTRACT

This paper focuses on the Late Iron Age jewellery discovered at Bartsgårda, on the Åland Islands. By examining artefacts including pendants, beads, pins, and a brooch, the networks of cultural exchange and regional artistic expression are introduced and the interconnectedness of the local Ålandic communities with broader influences is argued for. The study also demonstrates that Bartsgårda was a large and prosperous settlement from the middle of the Merovingian period to the end of the Viking Age.

Keywords: jewellery, Late Iron Age, Viking Age, Åland, contact network

INTRODUCTION

During four summers in 2020–23, a Nordic Late Iron Age (AD 550–1050) settlement site designated Fi 2.1 was investigated at Bartsgårda in the parish of Finström, situated centrally in the Åland Islands. The site was chosen based on an old overview map created in 1905 during the investigations of Björn Cederhvarf.[1] This map reveals a large burial ground featuring 110 structures, and over 30 structures indicating house foundations clustered in complexes east and north-east from the area with burial mounds (Fig. 1). One of the houses and 14 graves – round stone cairns covered by a sandy mound erected on top of the cremation burials – were excavated by Cederhvarf. The abundance of house foundations on the old map piqued interest, particularly since the register of ancient monuments on Åland, held by the Museum of Åland, listed only five house foundations connected to this large cemetery and the map from the beginning of the last century had remained unused since its creation. Furthermore, the perception of Åland during the Late Iron Age has been strongly characterized by the notion of single farms – this concept is, however, challenged by sites featuring numerous house foundations as well as by the existence of some quite large cemeteries, with both of these aspects being present at Bartsgårda. The small-scale excavations in the twenty-twenties were conducted on four different foundations spread over the area with mapped features indicating hous-

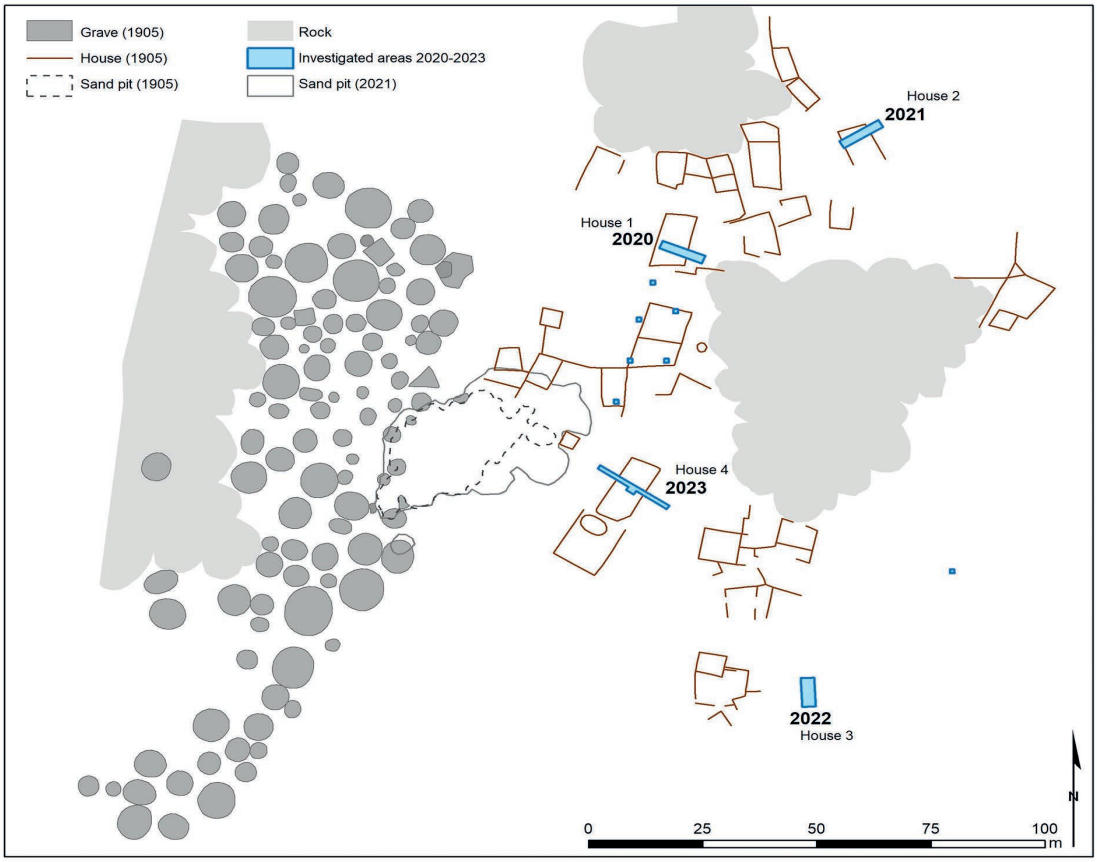

FIGURE 1. A digitized version of the overview map of the Late Iron Age settlement and cemetery at Bartsgårda as documented in 1905, with areas investigated during the years 2020–23 marked. Map: Kristin Ilves.

es, and test-pits were also excavated (see also Fig. 1). All of the investigated areas were confirmed to include Late Iron Age stone foundation houses[2] of varying functions and were rich in finds as well as other traces of dwelling activities. In this contribution, four different pieces of Late Iron Age jewellery from each of the investigated houses will be presented and contextualised with the aim of illuminating the possible contact networks of the inhabitants at Bartsgårda. Although limited in scope, with a firm focus on a single site, the study explores how the jewellery found at the Bartsgårda settlement reflects cultural interactions and trade networks in the Åland Islands during the Nordic Late Iron Age. What do the variations reveal about local and external influences, and in what ways might the use of jewellery have served as a performative element in expressing social identity and cultural belonging? I also briefly consider what the chosen pieces of jewellery can tell us about the social and cultural dynamics of the Bartsgårda settlement within the broader context of the Late Iron Age. This investigation offers a jewellery-based glimpse into the complexities of cultural interaction and identity formation at Bartsgårda.

THE PENDANT

A well-preserved, intricately decorated copper alloy cast pendant with a plating of gold (ÅM 820: 79; Fig. 2) was discovered in the upper layers of House 1 in 2020.[3] The excavated building is a standard

aisled stone foundation house of the Ålandic type, with signs of several construction phases and changes, intensively used as a dwelling house, radiocarbon dated from the middle of the Merovingian period to the end of the Viking Age.[4] The pendant, dating to the Viking Age, measures 33 mm in diameter and has a non-figurative ornament of exquisite craftsmanship. Centrally on the disc there is a triangular motif with concave, hatched sidebands and a prominently protruding sunken annulet in the middle. The arms of the triangle fuse and widen into triangular ends, decorated with five tiny knobs/metallic pearls each and anchored under a border belt running on the edge of the pendant. The central triangle is surrounded by three curling double bands motifs, volutes, intertwined with each other and with a circular inner ring of a double band. Both the volutes and the circular inner ring emanate from and are connected by three rectangular shapes with concave sides that carry a decoration of six tiny knobs/metallic pearls in three pairs. All of the knobs on the pendant seem to have had a central dot. The oblique lines-decorated strap eyelet is incorporated into the design of the main ornament by the use of double bands.

There are just a few parallels known to the pendant from Bartsgårda,[5] all being cast imitations, and no moulds have been found: three from Sweden (whereat two from Birka), five from Denmark (whereat three from Hedeby situated in modern Germany), and a single specimen from eastern England. Consequently, the main region of use for this type of pendant has been argued to be in southern Scandinavia, where the main production site was possibly based, although the type is named Stora Ryk type after the first site of discovery in Dalsland, Sweden. The specimen from Åland excels in decorative detail compared to pendants of the same type and can be considered the most exquisite of them.

This is the only cast pendant discovered from the settlement area at Bartsgårda, but two cast pendants[6] were recovered from the adjacent cemetery, specifically from grave no. 49, which also

FIGURE 2. Cast pendant from House 1. Photo: Kristin Ilves. Inset: cast pendants from grave 49 at Bartsgårda. Photos: Finnish Heritage Agency CC BY 4.0.

contained a larger set of beads and included small copper-alloy spiral tubes made from coiled wire (see also below). Both of these small pendants exhibit the same decoration of strongly stylized Merovingian-style animal art – an entwining knot design made by wavy lines and an annulet in the middle (Fig. 2). Somewhat surprisingly, the closest parallels to these pendants are found in face-types of Gotlandic disc brooches.[7] This shared stylistic element on different types of jewellery highlights the dynamic nature of contact and cultural exchange in the Baltic Sea region. While the exclusivity of the Gotlandic culture during the Late Iron Age on the island of Gotland itself is very evident and guarded,[8] the presence of similar decorative motif on Åland suggests a degree of cultural interaction and influence between these regions following which the Ålanders were more open to integrating different artistic styles and ideas into their own cultural practices.

THE BEAD

A large blue barrel-shaped bead with polychrome thread decoration in red and white, applied as wavy lines around the bead and as white straight threads at the edges (ÅM 828: 78; Fig. 3) was discovered in House 2 in 2021.[9] The excavated building, which had several activity phases and is radiocarbon dated from the middle of the Merovingian period to the end of the Viking Age, clearly had function(s) not connected to subsistence and domestic behaviour, but to ritual activities[10]. The latter is evidenced, among other things, by a large, flat, snow-white limestone slab with its underside coated in ochre, set into the otherwise granite and sandstone wall of the house. Additionally, when the house was abandoned, part of the interior appears to have been intentionally sealed with a thin layer of heavily burned, though not sooty, stones. The bead discovered in House 2 is very similar to so-called 'Ribe-type' beads.[11] 'Ribe-type' beads are dark blue in colour with thread ornamentation made of red and white canes, and such beads were locally produced in large quantities from imported glass in the workshops at the Late Iron Age trading place and town of Ribe in Denmark; the large-scale production of such beads is also well known from the trade and craft centre of Åhus in southern Sweden.[12] They are a frequent find in other parts of Fenno-Scandinavia as well,[13] so much so that the era of their production, AD 710–60, is named 'the blue period'.[14]

In total, there are 53 beads of various shapes, sizes, colours, and conditions – made of glass, rock crystal, cornelian, clay, and possibly amber – found from the Late Iron Age settlement area at Bartsgårda. Additionally, three small fragments of differently coloured glass chunks have been recovered. Almost half of these finds are connected to one building – House 3 – which functioned, at least during its final phases of use, as a location for crafts and trades (see also below).

There is great typological and chronological variation in the bead material found at Bartsgårda (Fig. 3). The greatest share of the beads are monochrome and include, for example, barrel-shaped opaque red beads, tiny blue disc-shaped beads, white and colourless round beads, as well as green and blue ribbed beads. There are a couple of globular facetted cornelian beads and a few rock-crystal beads in different shapes. Cornelian beads are of Oriental origin and along with the majority of the rock crystal beads are typically dated to the end of the 9th century and the 10th century.[15] A remarkably common bead type found at Bartsgårda is segmented beads, also imported from the Near East. This material includes beads chopped into one, two, and three segments, but there is also one fire-damaged specimen in five joined segments. The individual segments are spherical, oval, and cylindrical. There are segmented beads made from plain coloured glass – blue and yellow – as well as colourless glass. Some are made from a base of white or greyish glass coated with thin metal foil and/or an overlay of coloured glass to produce golden or silver 'metal foil' beads. Various polychrome

FIGURE 3. Selection of beads discovered at Bartsgårda settlement area. Photo: Wesa Perttola. Inset: Scandinavian blue-white-red bead from House 2. Photo: Kristin Ilves.

beads have been discovered as well, such as a distinctly diagnostic dark/black bead with white wavy ribbons and protruding concentric multi-coloured eyes, and a half of a white bead decorated with rayed eyes in red and black[16] (see also Fig. 2), both of which are firmly dated to the late 10th and the early 11th century and originate from the domination of the Samanids in Central Asia.[17] Although the bead material from Bartsgårda has not been systematically studied yet, a large portion of the beads recovered at this site were manufactured in the Near East.

Numerous finds of beads at settlement sites indicate trading activities. There is a claim made[18] that the number of finds is significantly lower at 'ordinary' settlement sites, where beads are always present among the discoveries, but their quantities remain modest, rarely exceeding ten to twenty. At Bartsgårda, the high number of beads is remarkable, especially considering the small extent of the excavated areas – in total, 88 m² was investigated at the main settlement area (see also Fig. 1). The excavation trenches of just 20 m² (Houses 1–2, 4) and 21 m² (House 3), situated on buildings, were plotted so that they crossed the walls of the house in order to investigate areas both inside and immediately outside of the structures. Only 10 m² (Houses 3 and 4) and 15 m² (Houses 1 and 2) of the houses themselves were studied, and most of the finds of beads are connected to the insides of the buildings; in all cases, however, archaeological traces show that even the outsides of the buildings were in active use.

Interestingly, among the graves at Bartsgårda studied in the beginning of the last century, the majority of burials had either no beads or just one bead; three burials had around 10 beads each.[19] Only one of the excavated burials, grave no. 49, revealed a proper set of beads consisting of 52 specimens.[20] Among the bead material in this grave, there are also two catalogued as spiral-formed, and in addition a couple of more small spiral tubes made from coiled wire were discovered.[21] Such spiral tubes

have often been used to decorate the clothing of the peoples living on the eastern side of the Baltic Sea, including Lithuania, Latvia, Estonia, Finland, and northwestern Russia.[22]

THE BROOCH

A well-preserved copper-alloy horseshoe-shaped/penannular/open ring brooch with spirally rolled-up terminals was found in the uppermost layer of House 3 in 2022 (ÅM 832: 76; Fig. 4).[23] The lenticular-sectioned brooch is undecorated, measuring 50 mm in diameter and featuring a 57 mm long pin. In the Viking Age, horseshoe-shaped brooches were one of the most common types of dress ornaments. The type with rolled terminals was one of the most common, widely used until the 13th century, and hundreds of specimens have been found scattered over a large geographical area, including today's Finland, the Baltics, and Gotland, but also the Lake Mälaren region and other parts of Sweden. Horseshoe-shaped brooches were used on both male and female garments, often to fasten capes or cloaks. Although the question of the origin of the type with rolled-up terminals still needs further investigation, Finland and Gotland are considered strong alternatives; their possible origin in the eastern Baltic Sea area has also been argued to carry a significance as a sign of an intra-Baltic community.[24]

The brooch at Bartsgårda was discovered *in situ* by an oven/furnace structure made out of stone slabs into a rectangular shape, and a soil sample was collected from directly beneath the brooch. The sample consisted of large amounts of birch bark charcoal.[25] This tempts one to speculate that perhaps the brooch was stored in a bark box waiting for its owner just before the house was destroyed.

House 3 is situated in an area where there are no visible traces of stone foundation houses remaining today; its placement utilized the local topography by being positioned on the edge of a naturally terraced slope. Despite only 10 m² of the house itself being excavated and its construction pointing towards a roofed shed rather than a standard stone foundation house, it contained a

FIGURE 4. Penannular brooch with rolled-up terminals discovered *in situ* from House 3. Photo: Kristin Ilves. Same brooch after conservation. Photo: Wesa Perttola.

FIGURE 5. The ringed pin from House 4 at discovery, front and back. Photos: Kristin Ilves. Inset: pin with the S-shaped head from House 3. Photo: Sari Pouta, Konservointipalvelu Löytö Oy.

remarkable wealth of diverse findings. In addition to abundant and varied osteological and macrofossil material, as well as large quantities of undecorated pottery, a variety of tools was discovered, including knives and their parts (primarily broken tips), small iron chisels/wedges, different whetstones and grindstones, a spoon-auger, and an iron awl. Crafts activities were further indicated by fragments of copper alloy, understood as raw material for metalwork, and small droplets of slag discovered alongside larger bits of slag that, together with a notable selection of chain fragments and links, as well as a few other pieces of jewellery, suggest a site for jewellery craftmanship. The large number of beads discovered in this building (see also above) and no fewer than seven worn-out fragments of different Samanid dirhems from the beginning and middle of the 10th century[26] strongly indicate that, at least during its last phase of use, trade was conducted in this building as well. In addition to the chronology based on diagnostic artefacts, the house has also been radiocarbon dated[27] and, similarly to all the other studied stone foundation houses at Bartsgårda, show evidence of several activity phases, being in use from the middle of the Merovingian period through the Viking Age.

THE PIN

A very short, almost miniature copper-alloy ringed pin with a looped-over head was discovered in House 4 in 2023 (ÅM 836: 311, Fig. 5); the house was in use as a dwelling concurrently with houses 1–3.[28] This well-preserved pin from the Viking Age measures 62 mm in length, and the slightly oval-shaped ring has a maximum diameter of 34 mm. The evenly circular-sectioned shank is flattened at the head, which is bent back and sweated to the shank to form the shape that holds the ring. The evenly circular-sectioned movable ring is mostly plain except at both ends of the hinge (or tenons),

where the ring widens slightly to a funnel or trumpet-like shape marked with three grooves circling the ring at the foot of the funnels, and a sunken, punched dot-in-circle ornamentation on the front side of the funnels. The front side of the shank carries a half of a polyhedral shape, a five-facetted plate with impressed dot-in-circle on each of the facets, sweated to the foot of the loop-head; impressed dot-in-circle ornamentation also decorate the front side of the loop-head.

Ringed pins are closely associated with horseshoe-shaped brooches and are often discussed together; however, while the brooches have been mainly associated with the eastern Baltic Sea area, ringed pins primarily display influences from western areas – the British Isles and Ireland in particular.[29] Ringed pins are understood to have developed in Ireland in the pre-Viking period,[30] and the plain-ring loop-head pin is the only ringed pin fully adopted by Scandinavians from the Irish population. These pins appear in Norway, Sweden, and Denmark, being especially numerous in western Norway and larger trade and craft centres, specifically in early towns such as Birka in Sweden and Kaupang in Norway, where local variants were also developed. The Scandinavian development traits included the combination of a large ring with a short pin and dot ornamentation,[31] such as also exhibited by the specimen from Bartsgårda. Nevertheless, ringed pins did not become noticeably widespread in Scandinavia.[32]

Ringed pins represent a typical male dress accessory, often used to fasten outer garments such as cloaks. Based on a few finds where remnants of thread are associated with the pin, it has been suggested that a string was also attached to the pin's ring and then wrapped around the lower part of the pin, holding it in place on the garment.[33] There are several parallels to the plain-ring loop-head pin discovered at Bartsgårda, with the geographically closest examples coming from the well-known and well-studied Viking Age trading post and town of Birka.[34] Of particular interest among the Birka material are two plain-ring loop-head pins. One was discovered in inhumation grave no. 819, where a young boy was buried in a coffin together with grave goods, including a plain-ring loop-head pin measuring 91 mm in length and with a ring diameter of 32 mm.[35] The second pin comes from a chamber grave no. 1076, an inhumation burial of a man that stands out as one of Birka's prestigious weapon graves. The pin from grave no. 1076 consists of a slightly oval ring with a maximum diameter of 41 mm, and it has a very short shank that has been suggested to be a replacement for a longer one that was lost.[36] This short shank feature turns the pin into more of a brooch. Both of these pins from Birka, particularly their rings, are similar to the Bartsgårda pin, despite the absence of impressed dot-in-circle decoration, but with the notable exception of the overall execution of the shank. In fact, there are no ringed pin parallels that would carry a half of a polyhedral shape and a five-facetted plate with impressed dot-in-circle ornament on the shank, as does the Ålandic specimen. At the same time, this add-on imitates another type of ringed pin characterised by a polyhedral head carrying the ring. Ringed pins with a polyhedral head and a plain ring were popular in the western Norse world, especially in Ireland, but these remained rare in Scandinavia.[37] This type of ringed pin is therefore considered typical for the Irish Norse community, and is also suggested as a symbol of the Norse emigrant communities in the North-Atlantic.[38]

At the Bartsgårda settlement site, other types of dress pins have been discovered as well, such as a small pin in iron from House 3, with a rhombic cross-section and the head folded over against the shaft in an S-shape (Fig. 5).[39] Although not exact, parallels for this type of pin are mainly to be found in the 9th–10th centuries Slavic material culture, from the territories of northern Germany, and a S-shaped head form is generally considered Slavic.[40] However, such a design is easy to produce and should not necessarily be traced to a specific cultural context, especially as dress pins were a very common costume accessory.

CONCLUSION

The small selection of personal adornments highlighted in this study do not in themselves constitute a statistical foundation upon which to discuss the main trade- and contact networks of which the Åland Islands was a part, or to which regions the contacts were most intense during the Late Iron Age. However, they serve to illustrate certain trends that the author finds representative for the region and the period. One is that, not surprisingly given their geographical position, the material culture on the islands displays traits connected to both eastern and western traditions. The other is that these traditions are not necessarily manifested in their original form, but frequently new, endemic variants are created, playing with, exploring, and transforming the outside influences. The jewellery from Late Iron Age Bartsgårda on the Åland Islands discussed in this contribution represents a notable variety in material expression. There are items of imports, such as many of the beads, but also examples of merged expression. As visible elements of a costume, and feasible to copy, many pieces of jewellery were well suited to making fashionable social statements with associations to other lands.[41] Situated at the crossroads of the Baltic waterways, Åland has often been emphasised as a transit point for goods and ideas, especially in the Viking Age context, but I would like to point out that Åland was also a destination in its own right. Therefore, it is not surprising to encounter artistic expression aimed at creating localised forms of jewellery.[42]

Jewellery as material culture has an essentially performative character; they are meant to be carried in a manner such that they are seen and can transmit social information to the surrounding world. Adornments and fasteners thus do not serve only as decorative and functional pieces, but also as symbols of identity and cultural interaction. It has been pointed out by researchers such as Zanette Tsigaridas Glørstad[43] that the Late Iron Age jewellery items were more than mere accessories – they were tangible expressions of ancestry and belonging, as well as a demonstration of cultural contact. Being visible, concrete objects, jewellery conveyed a subtle yet discernible message of commonality and shared heritage while simultaneously highlighting divergence and individual as well as regional distinctions. It remains a task for a future, more ambitious study to delve into the question of in what matter adornments were used on Åland, the social messages they were meant to convey and to which audiences.

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NOTES

1 Ilves & Perttola 2020.
2 Stone foundation houses, mostly rectangular structures built three-aisled with roof supporting posts, were constructed with low dry-stone walls set on the outside of an inner wood-wall house structure – during the Nordic Late Iron Age, houses built in such a manner are typical to the Åland Islands, see closer in Ilves 2018.
3 Ilves 2021. This find has been previously published by Holmqvist & Ilves 2022a; see also Ilves & Lindholm 2021: Fynd 101.
4 Holmqvist & Ilves 2022b.
5 Holmqvist & Ilves 2022a: 65–6 with references.
6 KM 4780: 47 and 48.
7 Høilund Nielsen 1999: 167–8, especially face-type 9 on fig. 10.11.
8 Callmer 2024: 8.
9 Ilves 2022.
10 See closer in Holmqvist & Ilves 2022b.
11 Sindbæk 2023: 240. The bead type is also named 'Scandinavian blue, white and red bead' (e.g. Callmer 2007, 2024).
12 Callmer 2018: 26.
13 Callmer 2024.
14 Näsman 2000: 43–4.
15 Callmer 2018: 36–7.
16 ÅM 832: 607 and 11.
17 Callmer 2018: 30.
18 Callmer 2018: 42.
19 See closer KM 4629 and KM 4780 finds catalogues.
20 KM 4780: 51.
21 KM 4780: 52.
22 Rammo & Ratas 2015.
23 Ilves et al. 2024.
24 Gustin 2015; Isberg 2020.
25 The soil-sample was analysed by Tuija Kirkinen, see Ilves et al. 2024: 44.
26 The coins were identified by Jani Oravisjärvi, see Ilves et al. 2024: Tabell 6.
27 Ilves et al. 2024.
28 Ilves et al. in prep.
29 Perez 2021; Tsigaridas Glørstad 2014.
30 Fanning 1994: 15–23.
31 Graham-Campbell 2011: 103.
32 Perez 2021: 82.
33 Fanning 1994: 124–6.
34 Arbman 1943: Taf. 44–5.
35 Arbman 1943: 295, Taf. 45:2.
36 Arbman 1943: 447, Taf. 44:6.
37 Fanning 2000: 82; Perez 2021: 19; Tsigaridas Glørstad 2014: 160.
38 Fanning 1994: 54. For the nuancing of a common colonial identity concept, see Tsigaridas Glørstad 2014 who is emphasizes (citing Gustin 2004) that the polyhedral element is evident in various types of artefacts originating from eastern Scandinavia and the Baltic Sea region, some of which predate the Viking Age.
39 Ilves et al. 2024: 45; ÅM 832: 899 and 1016.
40 Messal 2015: 162–3, Abb. 93.
41 Tsigaridas Glørstad 2014: 170.
42 See also Ilves 2015; Rundkvist 2009.
43 Tsigaridas Glørstad 2014: 161.

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Abbreviations

KM = (National Museum of Finland), Finnish Heritage Agency, archaeological collections

ÅM = Ålands museum, collections

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Visa Immonen & Tapio Salminen

TRACES OF MEDIEVAL INDIVIDUALS
New seal matrix discoveries in Finland

ABSTRACT

In the Middle Ages, people expressed their social differences, positions and roles as well as religious affinities in various ways. One of them was the use of seals, and the present article analyses four recent finds of medieval seal matrices from Finland. Three belong to priests, and based on the use of heraldry, one to a member of the nobility. In terms of materials, one is of silver and the rest bronze alloys. As objects of identity performance, medieval matrices, archival sources permitting, can open large vistas on the genealogical networks of medieval society as well as individuality in medieval culture.

Keywords: Finland, metal detector finds, Middle Ages, seal matrices, stray finds

INTRODUCTION

Sometimes small things can hold answers to big questions, or at least the beginnings of an answer.[1] According to the historian Brigitte Miriam Bedos-Rezak, a medieval seal is one of such things, because it represents an expression of medieval individuality.[2] The emergence of individuality, or the idea that each human being is a unique and autonomous agent and has a sense of a psychological interior or self which sets one apart from others, has been a highly debated issue in scholarship. Individuality is frequently associated with modern Western societies, and scholars such as archaeologists and historians have spilled much ink in discussing whether the term can be applied before the Renaissance.[3] Regardless of what view one takes on the historical character of individuality, there were, however, individual human beings in the premodern world, and in the Middle Ages, people expressed their social differences, positions and roles as well as religious affinities in various ways. One of these practices was the use of seals, which marked and materialised the legal authority and agency of institutions and individuals. In fact, possessing a seal was already an expression of certain social rank and connection with literary culture.

Bedos-Rezak argues that medieval sealing practices established a material and symbolic connection between individuals or institutions, their authority and identity.[4] Seals were used for securing

charters and legally binding decisions of institutions and individuals as well as missives. Moreover, seals and sealing practices have an innate link with the development of writing habits and their media. From the mid-14th century onwards the increasing use of paper and vernacular languages in the written management of information produced a growing need for an ever-increasing number of burghers, merchants, priests, clerics and local nobility to confirm their personal identity in documents and letters. Besides writing material, seal matrices and wax, the complex practices of literacy and document culture involved objects such as books, equipment related to writing and reading, specialised furniture, and even architectural features.[5]

If medieval seals are indeed so crucial for understanding medieval individuality, the matrices for pressing them on wax are equally important. Not only were they the tools for making the impressions but also objects with a close relationship with their owners. Some of the matrices' individual histories are revealed by their physical characteristics, including their wear and tear as well as provenance. However, in many cases, especially with matrices acquired into museum collections decades ago, we do not have very good records on their previous histories. Medieval matrices are rather rare finds in archaeological excavations, but in recent years several have been unearthed by metal detectorists. In this article, we analyse four matrices found by amateurs in Finland and discuss how the objects relate to their owners as well as what their provenance can reveal about the histories of the objects.

It is typical of medieval seal matrices from Finland that they carry names of persons who cannot be identified as any of the individuals mentioned in the surviving corpus of archival sources. Nevertheless, since their designs followed contemporary fashions in size, shape and style, and their coats of arms and inscriptions signal the owner's status, the items can be stylistically dated and their owners' social positions inferred. In addition to the owner's social standing and family ties, the matrices can also reveal their profession and religious sympathies. These bits of information can be further expanded with the help of written and other sources. In addition, the context of discovery can be helpful in disclosing more about the individual in question.

A further crucial context for understanding the matrix discoveries are the practices of discarding them. As personalised artefacts obtained for personal use, matrices belonging to individuals were habitually destroyed or deformed after their owner's death but could also be stolen or inadvertently misplaced.[6] The written accounts of how lost matrices were annulled in front of public authorities such as town magistrates indicates their value. The harm of losing one's seal matrix was similar to when we misplace our credit and ID cards, access codes to online banking, or mobile phones; a lot of time and effort is and was required to invalidate and replace the lost items of authentication. In medieval urban centres, such as Reval (today Tallinn), annulations were entered in the town's books of memoranda, especially in the late 14th and early 15th centuries. After this period the procedure of annulation appears to have changed in Tallinn, and reporting lost matrices was done in some other format.[7]

When a person died, the matrix lost its previous function. In some parts of Europe, it was customary not to put matrices into the owner's grave but deposit the deceased's matrix into the landscape, into soil or water, possibly after obliteration or annulation.[8] In Finland, however, it is not possible to confirm or rule out such practices based on the available evidence. Many of the matrices found in the country are, in fact, still in a relatively good condition, not too worn to be used. Yet, in the Finnish material, two matrices found at the church ruins of Koroinen in Turku, and one in Perniö Church are in pieces, and thus possibly deliberately broken up.[9] Such a suggestion is supported by the fact that matrices as lumps of solid metal are very difficult to accidentally break. Since both sites of discovery are ecclesiastical, the matrices could have been part of grave deposits. When considering metal de-

tector finds, worn-out, tiny fragments of matrices can be difficult to identify, especially in the field, which might explain their absence among recent discoveries.

In this article, we will first describe the four new matrix finds and identify their possible owners together with the date of production and use, and then discuss the sites where they were found to give light on the circumstances in which the items were deposited. What can the matrices and their contexts of finding reveal about their medieval owners in Finland? However, before proceeding to the newly discovered items, we will start by discussing the bulk of matrices and seal impressions from Finland.

THE CORPUS OF MEDIEVAL SEAL MATRICES FROM FINLAND

Finland today more or less covers the area of the medieval Diocese of Turku which was part of the Kingdom of Sweden. From this geographical territory, before 2009, eleven medieval seal matrices had been placed into museum collections and published on several occasions.[10] These items are mostly from ecclesiastical or monastic sites or belong to individuals associated with such institutions. About half of the matrices are with poor provenance information or stray finds and half from archaeological excavations. Of the matrices with legible inscriptions, two belong to priests, while other owners include a noblewoman and two burgher men.[11]

In the 2010s and 2020s, the number of known seal matrices has increased significantly. Although some have been unearthed in archaeological excavations, the primary reason for the growth is the boom of the metal detecting hobby and the subsequent new discoveries.[12] Because the Finnish Heritage Agency has a long delay in cataloguing detector finds, the exact number of newly discovered matrices is difficult to estimate, but based on the already catalogued items and the photographs of such finds on amateur sites, the number of matrices found after 2009 is already higher than the number known before that year. Moreover, the new discoveries have made the corpus more diverse. Although most of them are still from ecclesiastical contexts and belonged to churchmen, burghers are now, relatively speaking, better represented.[13] Yet the total number of medieval matrices from Finland, around twenty, is still very low compared with the number of seal impressions documented from medieval documents. There are nearly four hundred published seal impressions of institutions, their agents, nobility, clergy and other people in Finland from 1253–1530.[14]

For a more detailed description, we have picked out four matrices among the recent metal detector finds. The criteria for selection have been the availability of information on the context of discovery, the good condition of the item which allows its inscriptions and heraldry to be analysed, and the wider medieval context with which the matrix can be associated. Despite relatively good contextual information and the clarity of visual motifs, the owners of some of the matrices can be deduced only tentatively.

The seal matrix from Lempans, Sjundeå

In 2017, a medieval seal matrix of bronze was found in Lempans village in Sjundeå (Fi. Siuntio), Western Nyland in South Finland (Fig. 1).[15] On the reverse, the plate has a ridge with a suspension loop. The legend reads *S[igillum] Io[a]n[n]is Wolde[ma]rzo[n] p[res]b[yte]ri*, or 'the seal of Johannes Woldemarsson, priest'. The central motif is a gothic three-pointed shield with a diagonally placed object which has been interpreted either as a fire steel (*Feuerstahl)*, hinge or door plate (*Thürangel*, *Thürbeschlag*, *Türhaspe*), or leather knife (*Ledermesser*, *Liedhänge*).[16] The design of the item along

FIGURE 1. A copper alloy seal matrix found in Lempans village in Sjundeå (Fi. Siuntio) in 2017 (NM inv. no. 41830:1). The measurements of the matrix are 30 x 30 x 3 mm. Photo: Visa Immonen.

with the lettering and shield date the matrix to the mid- or late 14th century.

Besides the matrix, the discovery of a Danish coin from 1518 and a 16th-century silver *klipping* indicate late medieval activities at the site. In fact, it lies next to a brook on the edge of fields by the location of the medieval Lempans village, situated halfway between the medieval churches of Lojo (Fi. Lohja) and Sjundeå. The medieval finds in the area might be explained by a winter route following the brook and connecting the churches. The village of Lempans is mentioned in written sources for the first time in 1442, and in 1540, it consisted of six farms.[17]

In the Baltic Sea region, the motif of priest Johannes' seal is rather rare. It has traditionally been identified with the vassal family of Scherembeke active in Danish Harrien-Wierland (Est. Harju-Virumaa) already in the late 13th century. The family originated from Scharnebek, Northeast of Lüneburg, where its first known member was active as a ministerial of the archbishop of Bremen in 1201 and 1218. In 1271 the Queen Dowager of Denmark enfeoffed Knight Christiarnus de Scherebeke, his wife Helena, and their sons Henricus and Bernhardus the village of Maart (Est. Maardu) some 15 km East of Reval (Tallinn) together with two other villages. Christiarnus had bought them from the previous owner Nicolaus Moltke. King Erik V Klipping of Denmark confirmed the act a month later, King Erik VI Menved for Christiarnus' widow Helena and sons the knight Cristernus (cited 1288–1322) and Claus (1288) in 1288. The fief was renewed by King Erik VI for Cristernus in 1314. Christiarnus de Scherebeke of 1271 is very likely the same knight Christianus who had in 1267 sold his possessions in the village of Lankow in Schwerin to the provost of the diocese of Schwerin.[18]

The coat of arms of Scherembeke in Maardu is known from 1359, when two sons of Christiarnus de Scherembeke, Knight Christianus (cited in 1341–59) and Squire Willekinus (1341–59) donated, together with Christianus' son Cristianus junior, the village of Hirwen (Est. Iru) to the church of the Holy Spirit in Tallinn. The donation was witnessed by Johannes (1351–60), Canon of the Diocese of Ösel-Wiek (Est. Saare-Lääne), brother of Christianus senior and Willekinus.[19] In Christianus senior's seal, the family name reads as Scherebeke. The arms of all the three brothers are alike with rivets in the corners of the hinge plates. This image is very close to the matrix found in Sjundeå. Knight Cristianus junior is cited in documents in 1359–79 and his brother, Knight Johannes in 1373–99. In the 15th century Maardu was held by Hinrik (1422–38) and Kersten (1448–94). However, the Scherembekes left the manor in 1498, when Kersten's son Reynold sold it. The family was among the leading vassal families of Harrien-Wierland and active as counsellors of the vassal corporation from the 13th to 15th century.[20]

Based on the legend on his seal, Johannes was a priest who used the Scandinavian patronym of Woldemarsson, and a heraldic shield like the Scherembekes in 1357. At least two members of the

family – Canon Johannes Christerni, and his nephew, Knight Johannes Christerni – bore the name Johannes in two different generations in the 14th century, but the extant sources are silent on the use of Woldemar in Maardu. The name Woldemar is common in Denmark, and its use as a patronym may instead suggest that the priest's origins were in the Danish areas. Whatever the case, the very motif of priest Johannes' seal matrix and his name suggests interesting connections between the members of the late medieval aristocracy in Estonia, Finland and Sweden.

In March 1423, Kristern Nilsson (Vasa), the castellan of Viborg (1417–41) sent a missive to the council of Reval to further his position in a court case between him and a Revalian merchant Johan Purin over Kristern's father-in-law's inheritance. The missive was to be amended through an oral message delivered by Kristern's 'uncle' or male relative (*mynem ome*) Hinrik Scherenbeke and Revalian merchant Hinrik Gruwel.[21] Apparently an older and respected kinsman, Hinrik Scherembeke active in Maardu in 1422–38 was in some way related to Kristern Nilsson, whose father Nils Kettilson's (Vasa) seal from 1355 had a coat of arms with a heraldic lily rising from the stem of a sceptre. The device is not far from that of the Scherembekes.[22]

The later heraldic symbol and the name of the Vasa family (Vase = sheaf) was introduced as the family emblem by Kristern's great-great-grandson King Gustaf I of Sweden who had it minted on his coins in 1528.[23] Nils Kettilsson first emerges in documents in 1355 when he was active as a district judge in Frötuna in Uppland and as the bailiff of Stockholm Castle. In 1367 he supervised the demolition of Kumo Castle (Fi. Kokemäki) in Finland. His manor, Penningby in Uppland, controlled the area where the sailing route from Finland entered the Northern archipelago of Stockholm, and remained in the possession of his daughter Ramborg and her son Karl Tordsson until the 1440s. Nils' son-in-law Tord Röriksson (Bonde) oversaw the construction of Raseborg Castle in Western Nyland in the 1370s and was its first castellan till 1399.[24]

According to the Swedish genealogist Hans Gillingstam, the name Kristern was very rare among the Swedish nobility beyond the Vasa family. Together with the coat of arms, this may hint at their joint ancestry with the Scherembekes of the Danish Harrien-Wierland. The most probable candidate for the link is Cristiernus or Kristern of Öland, who was active as King Birger Magnusson's bailiff in Öland 1297, Örebro Castle in 1301, and Stockholm Castle in 1303. As a close adherent of the King, he was imprisoned with Birger by the King's brothers Dukes Erik and Valdemar in 1306 but released in 1308. At that time, he and his homonymic son were among the King's guarantors in his agreement with the dukes. Cristernus is last mentioned alive in 1309 when he and his wife Margareta made their last will with the consent of their son Kristiern. Both Margareta and Cristiernus died soon afterwards. Their three sons Kristern, Erik and Likved acted together with their brother-in-law Nils Jonsson (Rickebyätten) in a matter concerning their inheritance in 1310. In later documents Nils Jonsson's wife and Cristiernus' daughter is named as Kristina. Widowed in 1319, she is last mentioned alive in 1349 when she acted with his son Knight Jons Nilsson, the father of Nils Kettilsson's wife Kristina Jonsdotter.[25]

According to the Chronicle of Duke Eric, when King Birger imprisoned and starved Dukes Erik and Valdemar to death in Nyköping in 1317, the two dukes were under the supervision of Knight Cristiern Skärbeck from Estonia. The chronicle considers him responsible for the ill fate of the dukes. Even if the Cristern in question and King Birger's adherent and bailiff Kristern of Öland in Sweden in 1298–1306 cannot have been the same as Christianus, the son of Christiarnus de Scherebeke (whose fiefdom of Maardu the Danish king Erik Menved had renewed in 1314 and who was active in Estonia in 1319–22), he may have been closely related to the Scherembekes in Maardu. Since King Birger Magnusson's wife Märta was King Erik Menved's sister, Cristern Skärbeck's activity in Sweden indicates not only his personal relationships with the Swedish nobility but also the

Danish interests in early 14th century Sweden. These interests may have been implemented through the King's vassal families in Estonia. When the castellan of Viborg, Kristern Nilsson, referred to Christiernus Scherembeke senior's grandson Henrik respectfully as his male relative in 1423, this suggestion of kinship was not so far-fetched. A past relative of Henrik's had been Kristern's maternal great-great-grandfather.[26]

After this complex genealogical account, we can turn to the question who the owner of the seal matrix was. We know that in the latter half of the 14th century priest Johannes Woldemarsson lost possession of his matrix in Sjundeå. If he had contacts with parish churches in the region, the church was very likely that of Lojo.

The parish of Lojo was established already in the 13th century, while its chapel in Sjundeå was founded only sometime in the early 15th century and is mentioned for the first time in 1476. The known 14th-century parish rectors of Lojo were Ingvaldus (1323), Pedher (1382), and one Johannes Frononi, whom the Pope made a canon in the cathedral chapter of Ösel-Wiek in Haapsalu in 1377. Johannes Frononi was very likely the same person as the later dean of the cathedral chapter of Turku Hans Frunnesson mentioned in 1385 and 1387.[27] He may never have entered the chapter in Ösel-Wiek and was a different person than Johannes Woldemari. In the early 15th century, the known rectors at Lojo were Herman Jacobsson (1430) and Jakob Röd (1433).[28]

Because nothing connects Johannes Woldemarsson to ecclesiastical offices in Lojo or elsewhere in the province of Western Nyland, he may have been a priest just travelling through the area. Since the 1370s, the region was made part of the Bailiwick of Raseborg Castle and had close contacts to the coastland of Estonia and the town of Reval in the Middle Ages. Should he have wanted to visit relatives, the nearest ones were some 35 km Southwest from Lempans in Raseborg Castle. Since the 1370s, it was captained by Nils Kettilmundson's son-in-law Tord Röriksson, and Tord's brother-in-law Kristern Nilsson may have been part of his armed entourage already in the late 14th century.

The seal matrix from Hällsby, Tenala in Raseborg

In 2022, a metal detectorist found a matrix of bronze in the field of Hällsby village in Tenala (Fi. Tenhola), Raseborg, South Finland (Fig. 2).[29] The matrix is oval in shape and has a low ridge as a handle on the reverse side. The legend circles around the central motif. It starts and ends with a cross and reads *S'[igillum] : Henrici : Sac'[erdotis] : Finuelen[sis]*, or 'the seal of Henrik, priest from Finuelen (or Finnveden)'. The central motif depicts a head with prominent hair. It

FIGURE 2. A seal matrix of bronze found in the field of Hällsby village in Tenala, Raseborg (Fi. Raasepori) in 2022. The find is at the Finnish Heritage Agency, but it was not yet processed and catalogued at the time of this article's publication. Photo: Henrik Nygård.

is flanked by three dots in both lower corners, and a heater-shaped shield presenting a horizontal grapevine with two leaves in the upper and one in the lower section.

The shape of the matrix, and the style of the inscription dates the object to the late 13th or early 14th century. The oval shape along with the text evince that the item belonged to a priest named Henrik. If the word Finnveden or Finnheden is correctly read, it refers to one of the ancient small lands of Småland in Southern Sweden.

The place of discovery, Hällsby or Helvetesby, was the centre of the medieval taxation area of Hällsby. The earliest mention of the village dates to 1451, and the village had four houses in the 1540s.[30] They were situated in a small river valley that continued eastwards, and the object was found quite near the area in which object fragments and remains related to the medieval and later village plot can be found.[31] Presently it remains a mystery how a matrix possibly belonging to a priest from Småland has ended up in Hällsby.

The seal matrix from Teivaala Manor, Ylöjärvi

In 2020, a matrix of bronze was discovered near Teivaala Manor in Ylöjärvi, North of Tampere (Fig. 3).[32] The site is on an open field close to a known late-18th-century winter route which crossed the area Southwest of the late medieval village of Teivaala.

FIGURE 3. A seal matrix of bronze discovered near Teivaala Manor in Ylöjärvi in 2020 (NM inv. no. 45929:2). The diameter of the seal impression is c. 26 mm. Photo: Jussi Moisio, Finnish Heritage Agency.

The object, circular in shape, is in poor condition and the inscription is difficult to read. The legend surrounding the central motif, a heraldic shield, has no visible signs of surrounding circular lines. The start and end of the legend are separated with a triangle of three heraldic roses placed right above the shield. Almost illegible, the text consists of three words, preceded, separated and closed with a Latin cross (?) and heraldic roses. It reads + *S * [?]u?iui * Kii?[?]e?s? **.

While the exact name of the seal's owner remains indecipherable, the coat of arms of the shield consisting of a cross, star and an axe is a well-known combination from surviving seals and other heraldic material from late medieval Finland. The diagonally oriented shield on the matrix has a rounded tip, which dates the matrix to the closing decades of the 15th or the turn of the 16th century. The arms are those of the Kirves-Särkilahti (Kirves = Axe) family originating possibly from Kirvilä in Nousis (Fi. Nousiainen) where the nobleman Olaf (Turesson?) Kirves the younger had the same emblem in his seal in two documents from 1468 and 1469. Olaf's apparent kinsman Olaf Kirves the elder is mentioned among the local nobility in 1405. Married already in 1458 to Märta Nilsdotter of the influential Särkilax (Särkilahti) family from nearby Tövsala (Fi. Taivassalo), Olaf the younger appears to have combined his family emblem, the axe, to the cross and six-pointed star of Särkilahti. This was then possibly used by his male offspring.[33]

The diagonal positioning of the cross and the star in the shield in also characteristic of the coats of arms of Märta's brother's Magnus Nilsson's (Särkilax) two known seals from about 1467–86 and 1490, whereas both Magnus' secretum and smaller personal seal from the 1490s present a vertical arrangement of the motive. Magnus Nilsson was in 1460–89 the dean of the cathedral chapter and in 1489–1500 the Bishop of Turku (1489–1500). This obviously affected the social status of his brother-in-law Olaf Kirves the younger's family. Märta is last mentioned alive in 1469 after which Olaf the younger remarried and is last cited alive in 1476. Olaf the younger's and Märta's daughter Karin's children with Turku mayor and councillor Nils Persson took the Särkilahti coat of arms as their emblem.[34]

Another member of the Kirves-family, also named Olaf Kirves, is featured in his supplication of 1475 to the Apostolic See. He needed dispensation because as a schoolboy in the Cathedral School of Turku, he had involuntarily injured a schoolmate when they had been fooling around and throwing things in the classroom. Olaf had thrown his mate Ragvald Gici with a *stipula* (pen or stylus) which had blinded Ragvald's left eye. Consequently, both had to turn to the Pope in 1475 to be able to be ordained as priests: Ragvald because of his injury and Olaf for his deed. Both boys had apparently finished their schooling not long before and were born sometime in the late 1460s. Not identifiable from other sources, the exact relationship of the schoolboy Olaf Kirves to Olaf Kirves the younger remains unknown, but the latter's connections to the contemporary dean of the cathedral chapter and later Bishop Magnus Nilsson may support a close relationship.[35]

In surviving original Swedish and Latin documents, the name Kirves is written as Kyrffues (1468), Kirwis (1475), Kirffwes (1486), and in contemporary or later copies as Kirwis/Kirffues, Kirffwis/Kerfwis, Kirffues and Kirffuis. In Olaf the younger's seal from 1468 the form is Kirues.[36] In the matrix found in Teivaala, both the arrangement of the coat of arms of the Kirves-Särkilax family, and the round tip of the shield date the matrix unequivocally between about 1460 and 1500, more likely to the last quarter of the 15th century. The last word in the legend is very likely some form of the family name Kirves. The conical form of the matrix may also reveal that the owner was a distinguished member of the society, though not necessarily a cleric.

The seal matrix from Halikko Vicarage, Salo

In 2021, a metal detectorist found a silver matrix in a field belonging to Halikko Vicarage in Salo, Southwest Finland (Fig. 4).[37] This well-made object has a semicircular handle on a hinge at the back. The seal depicts St Andrew with his cross, and the inscription around the motif reads *s(igillum) haquini + haquini : presbyter*, indicat-

FIGURE 4. A silver seal matrix found in the field of the vicarage of Halikko in Salo, Southwest Finland (NM inv. no. 43702:1). The measurements of the matrix are 29 x 2 mm. Photo: Anssi Vuohelainen.

ing that the seal belongs to a priest named Håkan or Hakon, the son of Håkan. Based on the style of the motif and lettering, the seal seems to date to the late 15th or early 16th century.

There are references to priests with the name on the seal in Finnish written sources, for instance, in Tövsala in 1506,[38] but not in the parish of Halikko. The site of discovery, however, suggests a link between the item and the vicarage. Moreover, the choice of material, silver, is quite remarkable, because previously only one matrix of silver had been found in Finland. The item had been discovered in Tavastehus Castle (Fi. Hämeenlinna) and belonged to Bengta Bengtsdotter (Oxenstierna) (c. 1356–1422), the wife of Bailiff Magnus Olofsson Kase (1371–1401).[39] Silver as the choice of material for the matrix from Halikko Vicarage suggests a person of high social ranking.

CONCLUSIONS

In this article, we have presented four recent finds of medieval seal matrices from Finland. Three belonged to priests, and based on the use of heraldry, one to a member of the nobility (Sw. *frälse*). In terms of materials, one is of silver and the rest bronze alloys. These variations in materials and social ranking follow roughly the pattern of the known seal impressions and the corpus of previously known matrices.

Although tiny objects, seal matrices convey a wealth of information about the public role of their institutions or owners. They usually express whether the owner was a member of the clergy or nobility, or whether they were merchant burghers. Moreover, the coats of arms express family connections, and variations in heraldry can indicate genealogical affiliations. Especially in the case of the matrix from Lempans, the genealogical network reconstructed based on archival sources and the matrix's legend and coat of arms is very complex and expansive. In addition to the individual's family connections and official roles, the selection of religious imagery can also disclose the devotional associations which the owner wanted to express.

The context of discovery can complement the information extracted from the matrix itself. Especially items found near manor houses or churches and vicarages are likely to have been connected with the places in some fashion. Yet it is typical that matrices belonging to priests cannot be associated with the parish priests who are known from written sources. In addition to high-status places, it is also common that matrices are found in the plots of medieval villages.

The question whether the items were lost unintentionally or discarded on purpose is difficult to tackle. They might have ended up in the fields with dung and dirt brought from residential areas and places where domestic animals were kept. Another correlation might exist between the finds and the alignment of ancient roads and other routes of transportation. Yet losing matrices due to carelessness, whether in dung or along a road, is only one possibility, especially because mislaying one's matrix caused a lot of trouble, requiring the old one to be nullified and a new one to be acquired. They were thus probably looked after well.

Whatever the reasons for medieval seal matrices to end up in soil, they appear highly performative objects. In addition to expressing the identities of their owners, matrices also suggest connections between the individuals they articulate and the contexts in which they were discovered. This assumed connection may be misleading, because we do not know enough on why and how matrices ended up in the places they are found. Nevertheless, as objects of identity performance, medieval matrices, archival sources permitting, can open large vistas on the genealogical networks of medieval society as well as individuality in medieval culture.

Visa Immonen is Professor of Archaeology at the University of Bergen, Norway. Much of his work focuses on medieval material culture in the Nordic countries, but he is also interested in heritage studies. Immonen met Haggrén in the late 1990s in a meeting or seminar organised by the Society for Medieval Archaeology in Finland (SKAS) and has followed his work attentively ever since.

Tapio Salminen is a Research Fellow at TRIVIUM – Tampere Centre for Classical, Medieval and Early Modern Studies at Tampere University, Finland, and holds a title of docent on the History of transport and communication in the Faculty of Humanities at Turku University, Finland. His PhD-thesis *Obscure Hands – Trusted Men. Textualization, the Office of the City Scribe and the Written Management of Information and Communication of the Council of Reval (Tallinn) before 1460* (Tampere, TUP 2016) focused on the role of city scribes in the organisation of record keeping in late medieval cities and towns of Baltic Sea area. Salminen has since the 1990s enjoyed innumerable discussions with Haggren about medieval Finland.

NOTES

1 Deetz (1978) 1996.
2 Bedos-Rezak 2015.
3 Haggrén 1998; Huyssteen & Wiebe 2011; Knapp & van Dommelen 2008.
4 Bedos-Rezak 2011; 2022.
5 See, e.g., Harjula 2015; Harjula et al. 2021.
6 E.g. Anderson 2008; 2018; Cherry 2002.
7 Annulations in Tallinn Denkelbuch of 1380–1455: 1382 (1), 1383 (1), 1384 (2), 1389 (2), 1394 (1), 1416 (1), 1419 (1), 1420 (1), 1424 (1); see Salminen 2016: 142–3.
8 Bedos–Rezak 2022: 334–6.
9 Immonen 2009b: Cat. 26:1–2, 26:10.
10 See Immonen 2009a: 300–4; 2009b: 160–3; 2011; 2018.
11 Immonen 2023.
12 On the metal detecting boom in Finland, see, e.g. Immonen & Kinnunen 2020; Raninen 2024; Wessman et al. 2016.
13 Immonen 2013; 2017; Immonen & Salminen 2021; Immonen 2023.
14 DF 487, 1060, 1488; Anthoni 1955.
15 KM inv. no. 41830:1.
16 Crull 1887: 56, 109; von Nottbeck 1880: 37; Sachssendahl 1887: 199; Rhezelius 1915–1917: 6:567. See also Hildebrand 1879–1903: II:594.
17 KM inv. no. 41830:1; DF 2479; SST 1498–1499:55; DF 4817: Favorin 1986: 26; Immonen & Salminen 2021: 120–132.
18 LECUB I:1 422, 423, 522, I:2 651, 667, 630, I:4 2777; Gillingstam 1952–1953: 127–9; Johansen 1933: 906–7. A Godeke Scherembeke is mentioned in Riga in 1405; Feyerabend 1985: 78.
19 TLA.230.1.1-I, 243; LECUB I:6 2866; KNR Iru:1; Arbusow 1901.
20 Johansen 1933: 906–7; von Nottbeck 1880: 245–6.
21 DF 1719; Gillingstam 1952–1953: 176–81.
22 Gillingstam 1952–1953: 117–26, 141–59.
23 Ahlström et al. 1976, nr. 53–54: 77–9.
24 SDHK 6839; Gillingstam 1952–1953: 117–26, 158–69; Larsson 2002: 24–5, 68, 129; Salminen 2023: 35–38.
25 SDHK 2288, 2292, 2386; Gillingstam 1952–1953: 128, 132–45.
26 Erikskrönikan: 3912–3933; Gillingstam 1952–1953: 134–8.
27 Rein 1944: 36–7.
28 DF 1494, 3638; Brenner 1953: 53, 56, 58–9; Favorin 1986: 31–4; Hiekkanen 2020: 567; Neovius 1907: 87; Palola 1996: 91–2; Ylikangas 1973: 53–82, 104, 110. DF 905; Rein 1944: 36–7 (ASV, Reg. Av. 201, f. 390f-v 'quod parochialem ecclesiam loye Aboensis diocesis nosceris obtinere'). DF 934–935, 980, 1979, 2085.
29 At the time of writing the article, the matrix had been received at the Finnish Heritage Agency but not processed and catalogued yet.
30 Nikula 1983: 29.
31 Haggrén et al. 2007: 108.
32 KM inv. no. 45929:2.
33 Anthoni 1968: 1970, 111, 248.
34 DF 3457; FMS 35, 36, 21, 22, 212; Anthoni 1968; 1970: 111, 248; Rundt 1991.
35 DF 3603, 3611; Harjula & Salonen 2014.
36 DF 3457, 1611, 4100; REA 300–303; DF 3378, 4575, 4680.
37 KM inv. no. 43702:1.
38 DF 5221.
39 Immonen 2009b, Cat. 26:4.

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Abbreviations

DF = Diplomatarium Fennicum

FMS = Finlands medeltidssigill

KM = (National Museum of Finland), Finnish Heritage Agency, archaeological collections

KNR = Eesti kohanimeraamat

LECUB = Liv-, Esth- und Curländisches Urkundenbuch

REA = Registrum Ecclesiae Aboensis

SDHK = Svenskt Diplomatariums huvudkartotek

SST = Stockholms stads tänkeböcker

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Antti Lahelma, Jan Fast, Janne Soisalo & Julius Eerola

A DECORATED, PERFORATED STONE DISC
from Ojamäki, southern Finland, and other similar artefacts from the Finnish Stone Age

ABSTRACT

This paper describes a perforated stone disc, originally found in a ploughed field in southern Finland the 1970s. The disc has a carved decoration consisting of hatched rhomb-shaped patterns on both sides and, judging from the find site and its shoreline dating, probably dates to c. 7600 BCE, placing it in the Mesolithic period. We document the stone using Reflectance Transformation Imaging (RTI) and discuss several parallels to it, on the basis of which we address the question of its function and the possible significance of the decoration. We suggest that the artefact was likely used as a net sinker, and that its carvings possibly intended to communicate with the non-human aquatic entities integral to Mesolithic cosmologies, such as fish, seals, or the mythical 'Master of the Fish', known to several northern Circumpolar peoples of the historical period.

Keywords: art, fishing, Mesolithic, RTI, relationality

INTRODUCTION

Perforated and decorated stone discs are a fascinating group of finds from the Finnish Stone Age that has attracted surprisingly little attention, given the fact that 'art' of any kind is relatively rare in the material culture of the Finnish Mesolithic (c. 8600–5200 BCE) and Neolithic (5200–1800 BCE) periods.[1] They are round, relatively roughly shaped flat objects with a bored hole in the centre, carved or incised with simple markings, such as zigzag lines, chevrons ('fishbone patterns'), oblique crosses, hatched lines, and similar simple designs.[2] The hole is typically either funnel-shaped, indicating one-sided drilling, or in the form of two adjoining cones, indicating two-sided drilling. Many are stray finds, but occasional discoveries made at residential sites indicate that the artefact type can be dated mainly from the Middle Mesolithic to the Late Neolithic period, or approximately between 7500 and 1800 BCE. Undecorated stone discs are much more common, but also more difficult to date and may have been produced later than the Stone Age. The artefact type has no clear parallels elsewhere in Northern Europe and has therefore been regarded as 'autochthonous' to Finland.[3] In this paper we describe one recent find belonging to this catego-

FIGURE 1. The Ojamäki stone disc (NM 46294:1). Photo: Marjo Karppanen.

ry, discuss its dating and function, and reflect on what may be said about the possible purpose and meaning of the carved decoration.

The simple geometric designs of the stone discs may seem like a humble tradition and have often been dismissed as mere ornamentation, but they echo shapes and forms found in contemporary decorated bone artefacts, Comb Ware pottery decoration and red ochre rock paintings, and should therefore be seen in the context of a wider symbolic system expressed in a variety of different materials. Moreover, even if the markings are simple, to make them on a stone object would have been relatively time-consuming and difficult, and the task must have been of some importance to the individual who carried out the work. The signs are thus not mere doodles, but have probably carried messages, and although we are unlikely to ever understand them, the fact that this particular group of artefacts was chosen as a medium for messages is interesting in its own right.

The two authors who have written the most detailed accounts of this group of artefacts are Torsten Edgren and Helena Edgren, both of whom have included in their discussion a wide variety of differently shaped objects, including those that are globular, rhomb-shaped, conical or irregular.[4] In their studies, as in most others published before and after,[5] the actual shape of the artefact is of secondary importance, and the main typological denominators are that the items are perforated and decorated. Viewed together, the perforated stones are clearly a very heterogeneous group in terms of function, with some stones perhaps used as weapons, others for hunting and still others as net sinkers or fitted into digging-sticks. It therefore seems to us that lumping all perforated objects (Fi. *reikäkivi*) into such a broad typological group is not the most fruitful way of approaching these artefacts. Instead, we will exclude the globular, rhomboid and irregular stones, and focus on a single group: the flat, disc-shaped or, sometimes, slightly oval stones, with decoration on one or both flat surfaces.

THE OJAMÄKI STONE DISC

The impetus for writing this short contribution came when, in June 2018, two of the authors (Fast and Soisalo) were presented with a fine specimen of a decorated stone disc (Fig. 1) while conducting community archaeology excavations at the Vävarsbacka II dwelling site in Porvoo. The Ojamäki disc had been found already sometime in the 1970's during preliminary construction work for a high-voltage power line in the municipality of Nurmijärvi, about 37 kilometres north of Helsinki. It was found lying on the surface of a newly ploughed field, but at the time of its discovery, its age and significance were not fully understood by the finder. Nevertheless, the construction worker who found it decided to keep the strange-looking stone in the safety of his home. Years later and after much persuasion, an amateur archaeologist Benny Rönn from Porvoo managed to get hold of the disc and extract information about where it was found.[6] In June 2018 Rönn brought the disc to the Vävarsbacka II excavations, and finally, on February 13th, 2024, some five decades after its discovery, the Ojamäki stone disc was added to the collections of the Finnish National Museum under the catalogue number NM 46294:1.

The disc is circular in shape with a diameter of 155–157 mm and maximum thickness of 23 mm and has fairly detailed decoration on both sides. It weighs 816 grams. The hole in the centre is 32 mm in diameter and has been drilled through the stone from one side, leaving the other end of the hole 8 mm narrower than the other. The hole cuts through a part of the decoration and therefore it seems likely that it was drilled through the stone after the decoration was made. Although it's not certain, it's also possible that the decoration was originally made on a larger flat stone, part of which was broken off to create a circular shape, after which the hole was finally drilled through. The decoration of the stone disc is different on each side. One side of the disc is decorated with a horizontal zone with an ornament slightly resembling a fishing net, while the transverse side – although somewhat damaged – shows at least ten diamond- or rhomb-shaped ornaments grouped along the outer perimeter of the disc.

To study the ornamentation in more detail, we applied Reflectance Transformation Imaging (RTI), also known as Polynomial Texture Mapping (PTM). RTI is a light-based imaging method developed in the early 2000s by HP Labs, or the research division of the Hewlett-Packard computer company. It was originally developed as a method to improve lighting in 3D models, but it was almost instantly realised that the method was very well suited to the study of material cultural heritage, such as rock art and engravings.[7] In practice, RTI is based on lighting the object from multiple angles and taking a series of photographs of the object at different lighting angles. The photographs are then combined in a computer program to create an interactive lighting model of the surface. The position and the intensity of the virtual lighting of the model is freely controllable, and the model can be modified in several ways, for example by exaggerating the surface details or manipulating the colours of the object.

There are two main methods of producing RTI images: Dome RTI with fixed light positions and Highlight-based RTI, which utilises reflective spheres to calculate the position of the light source. The models presented in this article were produced using the latter method. The photographs of the Ojamäki disc were taken with a Canon EOS R5 equipped with a Canon EF 100mm f/2.8L Macro IS USM lens. Photographs were processed in Darktable. The RTI model was generated in RelightLab using 9 plane LPTM format with Deepzoom. The resulting models (Fig. 2) provide detailed information about the manufacture and surface treatment of the stone, including signs of grinding and barely visible incisions, and in principle allow a *chaîne operatoire* -type analysis of how and in what order the designs were executed. However, due to time and space constraints, this was not attempted in the present study.

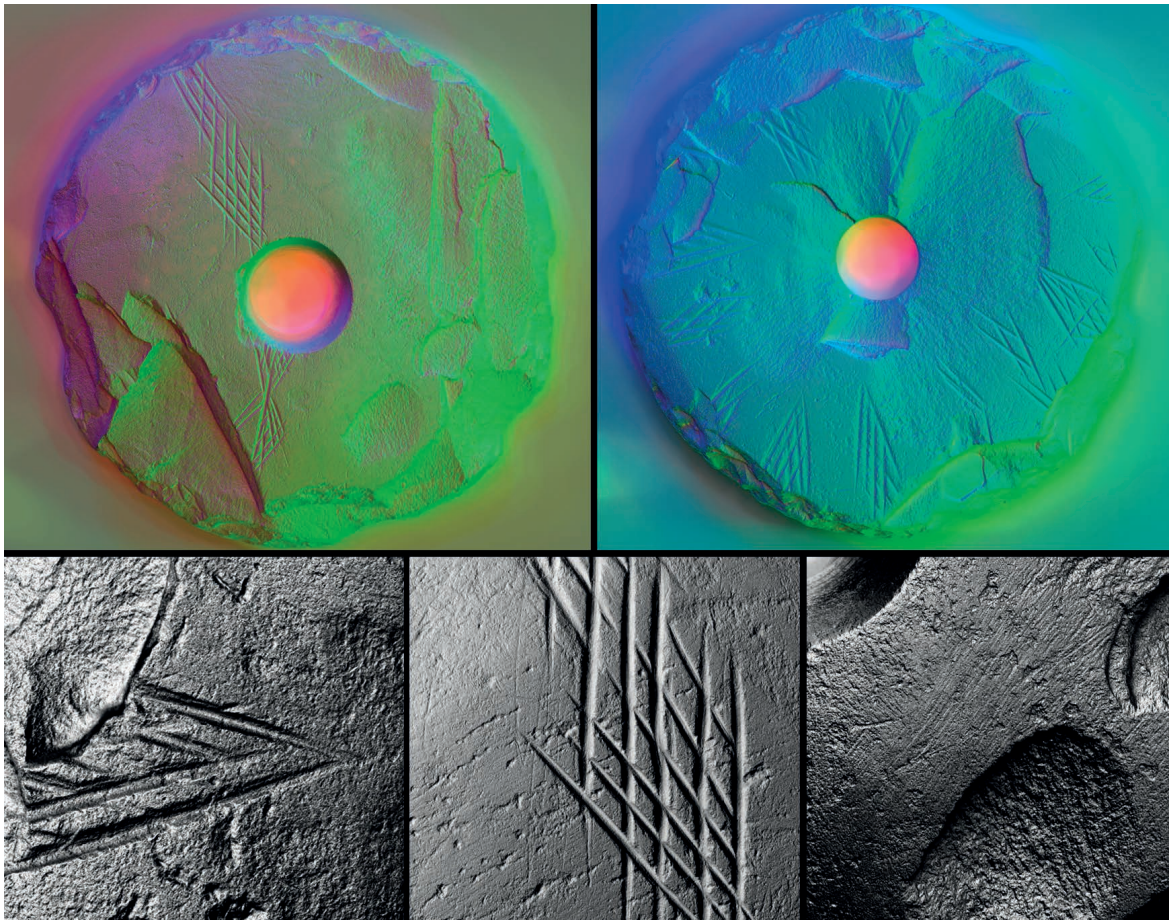

FIGURE 2. RTI images of the Ojamäki stone, showing both sides of the artefact and some details with marks of carving and grinding. The top two images are 'normal maps' of its surface, the lower left and right images were made using the specular enhancement technique, and the lower middle image was made using the diffusion gain technique. Image: Julius Eerola.

THE FIND SPOT

After Rönn had brought the stone to the excavations, its find spot[8] was inspected by Janne Soisalo later in 2018. The site is currently located on a gently sloping field facing southeast (Fig. 3). Judging by its topography and elevation, it could well be associated with a Stone Age settlement, but at the time of inspection the field was overgrown with grass, making it impossible to verify this. The elevation of the find site is approximately 47 metres above sea level (a.s.l.), indicating that the site emerged from the ancient Ancylus Lake (a vast freshwater basin that preceded the Baltic Sea) around 7650 BCE. The water level of the Ancylus in the Nurmijärvi and Vantaa regions decreased by 14 metres between 7800 and 7100 BCE, which implies a decrease of two metres every hundred years.[9] This suggests that the potential period of use of the settlement site was relatively short due to the rapid changes in the landscape caused by the receding shores of the Ancylus Lake. When the water level was about 47 metres a.s.l., the area was still an archipelago, but by 7550 BCE – or when the water level had receded to 45 metres a.s.l. – it was already on the shore of a sheltered and shallow bay. Even this bay dried up within a hundred years, completely cutting off the site's connection to the water. If the find does in-

deed belong to a settlement rather than being a stray discovery, its date would thus be roughly 7600 BCE based on the level of the shore on which it was found. It is worth mentioning that stylistically the dating would fit well, as the angular and hatched decoration resembles several Mesolithic bone artefacts from Denmark and Sweden.[10]

Ancylus Lake was rich in resources and attracted people to its shores, and while the Mesolithic population was likely small and their lifestyle nomadic, the shore zone saw a significant amount of human activity during the 8th millennium BCE. Settlements were periodically relocated in pursuit of better hunting and fishing grounds, and coastal settlements were not long-lasting due to the receding water levels, quickly moving away from the shoreline within a few generations. The climate during this period was quite like that of today, with winters cold enough to freeze the coastal waters of the Ancylus Lake. The nearby rocky hills were islands covered with pine forests like those of today, resembling the environment of the modern Finnish archipelago. Several other Mesolithic remains are known within a few kilometres of the Ojamäki find spot, the closest being a residential site called Männistö, located just 700 metres northeast of the find site. It lies at a slightly lower elevation, at c. 41–42 metres a.s.l. and dates from around 7200–7300 BCE. The stone disc might also be associated with this or another nearby settlement, as people continued to inhabit the area during the later stages of the Mesolithic period, and we do not have the complete story of the stone's history.

PARALLELS

There are several fairly close parallels to the Ojamäki disc from various parts of Finland, and while some of these have been published before, most of the publications are old, relatively difficult to find, and written in either Finnish or Swedish. It therefore seems useful to provide a short overview of these finds for a non-Finnish readership. This overview is not intended to be comprehensive, but simply to illustrate some of the better-known finds belonging to this group. The object type as such is very common, and hundreds of perforated stone discs made of similar materials using similar techniques can be found in various Finnish museum collections, but the vast majority are undec-

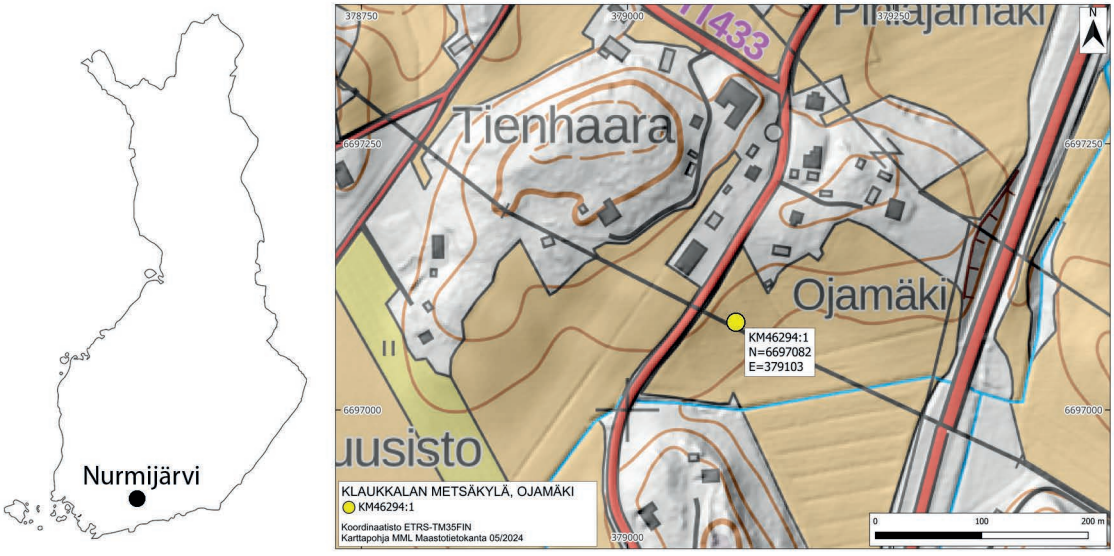

FIGURE 3. The location of Nurmijärvi and the find spot shown on a topographic map.

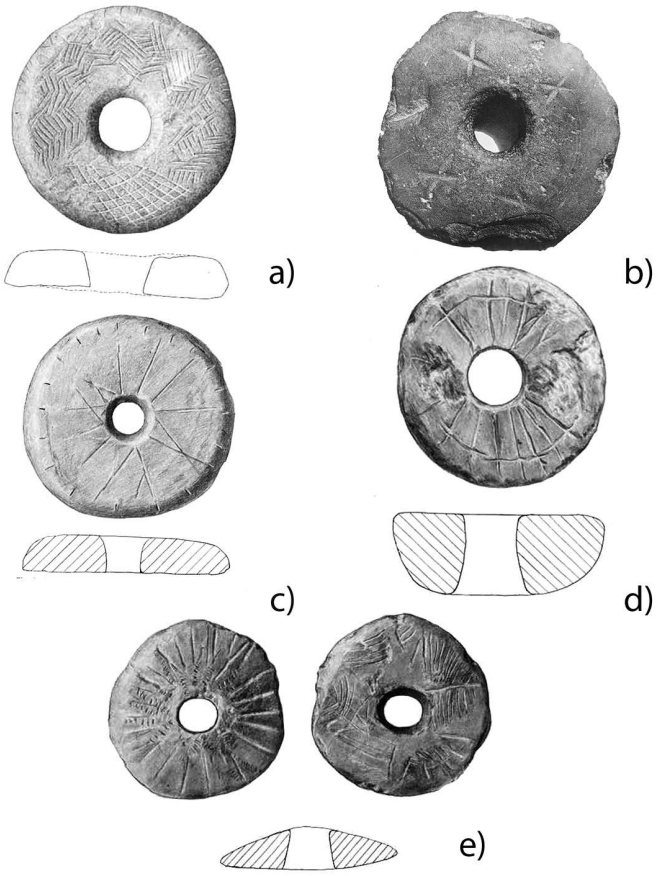

FIGURE 4. Parallels to the Ojamäki disc: A – Perttula, Punkalaidun (NM 2084:274); B – Säkinmäki, Hankasalmi (Keski-Suomen museo 63); C – Pitkäjärvi, Virrat (NM 11051:1); D – Kodesjärvi, Isojoki (NM 3028); E – Kattelus, Lohja (NM 8859). Figure: (a) and (c–e) from Edgren 1974, (b) according to Kivikäs 2000. Different scales – see the text for measurements of each object.

orated. A more thorough investigation of the archival materials would undoubtedly bring to light several more decorated objects that have received little or no attention, but such a survey would go far beyond the scope of this article. Moreover, as the collections of the Finnish Heritage Agency were unfortunately closed at the time of writing in 2024, such a survey was not possible, nor have we been able to obtain photographs or additional measurements of the objects described below. The measurements mentioned here have been taken from the scanned find catalogues, which are available online.[11]

Perhaps the best known and most frequently depicted parallel to the Ojamäki stone comes from the site of Perttula in the municipality of Punkalaidun, southwestern Finland (Fig. 4a), and has a relatively complicated design consisting of chevrons, short streaks and a net-figure, somewhat reminiscent of the Ojamäki stone. The diameter of the stone is 125–127 mm. Torsten Edgren claims that it is fragmentary because the underside is undecorated and the short streaks along the perimeter suggest to him that the decoration continued further down.[12] However, as similar short streaks along the perimeter are a recurring design element in these objects, there seems to be no reason to believe that the object is broken. A complex, net-like figure is also found on a flat, perforated stone from Haukisenkangas in the municipality of Tervo; but this stone is oval rather than round.[13]

A recurring feature is the presence of X-shaped or oblique crosses, such as on the disc of Säkinmäki from the municipality of Hankasalmi (Fig. 4b). The stone is a flat and rather roughly worked piece of reddish slate, with four oblique crosses on one side and a six-pointed star surrounding the hole on the other. A second disc of this type comes from Kivijärvi, Pudasjärvi.[14] It measures 163 x 134 mm, is made of brownish stone and is decorated with notches along the perimeter and a star-like pattern of oblique crosses. Oblique crosses can also be found on the surface of a perforated stone from Kuivasmäki, municipality of Petäjävesi.[15] This stone, too, is not perfectly disc-shaped, but rather thick and oval[16], but it resembles the discs in that its perimeter is notched with short lines.

Several stones have radiating lines or similar 'star'- or 'sun'-like compositions, either along the perimeter as in the Ojamäki stone or around the central hole. A stone[17] from the Pitkäjärvi site (Fig. 4c), municipality of Virrat, is made of a granular stone type and is decorated on one side only. It has long lines radiating from the central hole, some of which cross to form wedge-like shapes, and short streaks along the outer perimeter. The object is on permanent display in the corridor of the discipline of Archaeology at the University of Helsinki. The stone from Kodesjärvi (Fig. 4d), from the municipality of Isojoki, resembles it somewhat in terms of decoration, with a circle and lines radiating from the central hole, but the object is somewhat thicker[18] than the Pitkäjärvi stone. It has even been catalogued as a 'stone mace', although it is not globular, but flat and disc shaped. Finally, the disc from Kattelus (Fig. 4e), municipality of Lohja, is made of soft soapstone, has a slightly lens-shaped cross-section[19] and is decorated on both surfaces. One surface consists of lines radiating from the central hole, some of them wedge-shaped and combined with short strokes, while the other surface is a jumble of parallel lines, including a motif resembling a spruce tree or a gutted fish – that is, a chevron with a line running through its middle section.

INTERPRETATION

Although some of the globular perforated stones found in Scandinavia and Finland have been interpreted as having formed a part of digging sticks,[20] the holes of the disc-shaped stones seem to be mostly too narrow for shafting, and the objects generally too light to have served as weighs of digging sticks. For the reasons mentioned above, we have not been able to weigh the objects in the collections of the Heritage Agency, but the weight of the Ojamäki stone, or 816 g, seems fairly representative of the group. Several of the objects were made of soft sandstone or brittle types of slate, making them too fragile or impractical to have served as weapons or hunting equipment. More likely, the hole was made to attach the stone to a rope, and thus the most probable functional interpretation for this artefact type seems to be a sinker of a fishing net. The Ojamäki stone and some others do show signs of wear along the edges, which may have been caused by the object hitting rocks on the seafloor but could also be related to some kind of use as a striking tool, so the interpretation as a sinker is not the only possible one.

Find contexts – or rather, the lack of them – offer another clue, for although the Ojamäki stone may derive from a settlement site, many of the discs appear to be stray finds found at some distance from the Stone Age shorelines. They may thus conceivably derive from nets or other fishing gear that were originally lost at sea but ended up on dry land because of the land uplift. Finally, similar perforated discs[21] made of fired clay have been used as net sinkers in Finland in the historical period. If the interpretation as sinkers is correct, then it seems that any messages encoded in the decoration were not intended for human eyes, but for the subaquatic world: for fish or seals, which in the context of a relational epistemology could have been seen as sentient persons to be negotiated with, or for the 'owner spirits' of said species.[22]

In the historical period, several hunter-gatherer peoples of the northern Circumpolar region, such as the Naskapi of north-western Canada,[23] the Yupik and Inuit of the High Arctic,[24] the Chukchi of the Bering Strait region,[25] and the Khanty of west Siberia,[26] have relied extensively on fishing as a form of subsistence. All these peoples have included the concept of 'the Master of the Fish' as an integral part of their traditional worldview. This figure is seen as a guardian or deity who oversees aquatic life and ensures the balance of nature, and with whom it is vital to negotiate about the catch. Without going into too much detail, it is worth noting that among these peoples fishing tools

were often imbued with symbolic meanings and messages, such as carvings, paintings, and the use of specific materials that were believed to help negotiate with the 'owner' spirits, to attract positive spiritual influences and to ensure successful fishing. It is also possible, of course, that the decoration was related to some form of image magic or was merely a means of making objects more beautiful, and thus perhaps more attractive to both humans and non-humans. A 'secular' decorative purpose thus cannot be ruled out, but in the light of northern ethnography this seems less likely.

Following this line of thought, it would be tempting to associate some of the patterns on the disc-shaped stones with an underwater realm and a similar owner spirit. At least the 'net figures' of the Ojamäki and Punkalaidun stones and the 'fishbone' (chevron) patterns of finds such as Punkalaidun and Klemola, could conceivably be seen as referring to fishing and fish. The images are very schematic, and in the absence of any unambiguous water-related images – such as actual images of fish – this must remain just an educated guess. It should be noted here, however, that a Neolithic soapstone sinker from Jæren, southwestern Norway, has a carved image of a fish, probably a flounder.[27] And although it is not a sinker, we may also mention a Late Mesolithic sandstone pendant found at Brunstad in Vestfold, Norway, which has carved decoration, including net figures and what appears to be a fish.[28] These items are not directly relevant to the Finnish finds, but they confirm that fish, nets and other subaquatic symbolism are a recurring motif in the Mesolithic art of Northern Europe.

A slightly more promising line of interpretation relates to rock art, dated in Finland between 5200 and 1500 BCE, which serves as an interesting parallel to some of the designs, as Torsten Edgren has already pointed out.[29] Later on, Pekka Kivikäs noted out some comparanda in his publications, such as the oblique crosses found at several Finnish rock painting sites, e.g., Saraakallio, Pyhänpää and Siliävuori, as well as the enigmatic 'nets' of the rock painting at Vitträsk and some other sites.[30] The oblique crosses are particularly intriguing, as they represent the oldest tradition in the Finnish rock paintings, dating from the Mesolithic-Neolithic transition.[31] Oblique crosses also occur in later ethnographic material, such as Sámi shaman drums, where the symbol represents the *noaide-dirri*, an 'instrument of witchcraft' said to have been used only by the most powerful of the *noaidi* or 'shamans'.[32]

Although the net figures from Vitträsk are more elaborate than those of the decorated stone discs, and the connection with rock art in general is rather tenuous, it is strengthened by the fact that, in addition to carved stone objects, we also have a painted object with a net-like figure from the Late Comb Ware site of Nästinristi in southwestern Finland.[33] The Nästinristi stone[34] is an unmodified, roundish cobblestone and has no hole, but its size and shape suggest that it may well have been a net sinker. Finally, it may be mentioned that a stone sinker found in the Aapiskoski rapids near Rovaniemi, in Northern Finland, has a ring-headed human stick-figure that closely resembles those found in Finnish rock art.[35] The sinker is a stray find that cannot be dated, but its iconography offers another link between net sinkers and rock art.

Admittedly, the designs on the stone discs recorded so far offer few clues as to their meaning, and one must obviously be careful in applying ethnographic analogies to a group of artefacts of this age, but we feel that these clues are nevertheless intriguing and deserve to be mentioned. It should be pointed out that the Finnish rock art contains numerous references to a subaquatic world – such as diving figures and human figures surrounded by fish[36] – and that the paintings themselves are without exception located directly at the water's edge. Thus, there seems to be a significant connection between image-making and the subaquatic world that recalls the 'magical' use of images by Circumpolar hunter-fishermen of the historical period. It is probably too early to say anything more definite about the meaning of these stones, but the lines of inquiry discussed here seem to open up new vistas for interpretation and certainly suggest that the markings are more than mere decoration.

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Janne Soisalo is a PhD researcher studying the Stone and Bronze Ages at the University of Helsinki. He works in field research across various parts of Finland. He met Georg at the University of Helsinki by participating courses on the Middle Ages taught by Georg.

Julius Eerola is a Helsinki-born archaeologist. He has worked with the historical period of Helsinki and with archaeological imaging methods. Georg Haggrén supervised his master's thesis at the University of Helsinki.

NOTES

1 Cf. Herva et al. 2014; Mannermaa & Núñez 2023.
2 Huurre 2001: 99–100.
3 E.g., Edgren 1974: 47; cf. Płonka 2003.
4 Edgren 1974; Edgren 1977.
5 E.g. Luho 1967; Matiskainen 1989; Schulz 1996; Äyräpää 1950.
6 Pers. comm. 29.2.2024.
7 Malzbender et al. 2001.
8 ETRS-TM35FIN coordinates N=6697082, E=379103.
9 Hokkanen 2005.
10 Petersen 2019.
11 The find catalogs for most prehistoric finds recovered from Finland may be browsed at http://www.kyppi.fi/
12 Edgren 1974: 39.
13 NM 34866:207.
14 NM 3354:27.
15 NM 14069:1.
16 Size 146 x 121 x 65 mm.
17 Size 149 x 141 x 27 mm.
18 Diameter 117 x 111 mm, thickness 39 mm.
19 Size 92 x 90 x 20 mm.
20 Broadbent 1978.
21 E.g. objects K10479, K9479 & K9806:2 in the Ethnographic Collections of the Finnish Heritage Agency.
22 Cf. Herva & Lahelma 2020.
23 Speck 1977.
24 Boas 2013; Rasmussen 1929.
25 Bogoras 1904.
26 Jordan 2003.
27 Bang-Andersen 2009.
28 Schülke & Heggdal 2015.
29 Edgren 1974: 46.
30 E.g. Kivikäs 2000: 20.
31 Jussila 1999.
32 Manker 1950: 133.
33 Väkeväinen 1982.
34 NM 20606:82.
35 Äyräpää 1953.
36 Lahelma 2005; Herva & Lahelma 2020: 113; Lahelma 2008: 51–9.

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Ulla Nordfors, Sanni Peltola & Päivi Onkamo

HEAD OVER HEELS
Was there a beheaded man in the Jutikkala Kokkomäki grave?

ABSTRACT

This article examines whether the Jutikkala Kokkomäki grave in Valkeakoski, Finland, might contain a decapitated individual. The poorly preserved grave yielded cranium fragments among leg bones. Currently only the tibia has undergone DNA analysis, so it remains unknown whether all the bones belong to the same individual. Our DNA analysis confirmed the legs belong to a genetically male individual, who likely belonged to the local population. We explore various alternative interpretations, including the possibility of beheading, secondary disturbance, or, if the bones belong to different individuals, the inclusion of another person's remains or even a double burial. The findings highlight the complexity of interpreting archaeological evidence, especially in cases where remains are incomplete or fragmented, and emphasise the need to carefully consider multiple hypotheses when reconstructing past burial practices.

Keywords: decapitation, ancient DNA, interpretation, Crusade Period, grave disturbance, double burial

INTRODUCTION

Decapitations and headless burials have occurred across various historical and cultural contexts worldwide, with motives ranging from religious rituals to warfare and judicial punishment. In some Iron Age European cultures, the head was considered the seat of a person's vitality, spirit, and physical strength, and as a result, heads were sometimes removed and manipulated to transfer these properties to another person.[1] Decapitated burials are often viewed as atypical and interpreted as signs of shame or humiliation.[2] In Britain and Scandinavia, headless and prone burials in Roman and Viking Age cemeteries have been associated with judicial executions,[3] while in Anglo-Saxon England, decapitations are linked to battle casualties or executions.[4] In Viking Age Scandinavia, there are instances of ritual practices involving the placement of a secondary human head in a grave.[5] Decapitated burials have also been interpreted as those of slaves or as part of apotropaic magic intended to prevent the dead from rising and disturbing the living.[6]

This article investigates the presence of decapitated burials in Finland, with particular attention to a grave discovered at Jutikkala Kokkomäki in Valkeakoski, Finland (Fig. 1). It has been previously hinted that the grave might be a headless burial, as skull fragments were found among the bones at the foot end of the grave.[7]

INHUMATION GRAVE 1/2001 AT JUTIKKALA KOKKOMÄKI

The Kokkomäki cremation cemetery is located at Jutikkala manor in Valkeakoski, approximately 200 metres northwest of the main building, on Kokkomäki hill, which overlooks the surrounding landscape, about 100 metres from the shore of Lake Saarioisjärvi. The site is named after the tradition of burning midsummer bonfires on the hill (*kokko* = pyre/bonfire, *mäki* = hill), rather than the cremations that took place there over a millennium ago. The area is archaeologically significant, featuring a rich array of remains including settlement sites and multiple cemeteries that date from the Early Iron Age to the Late Iron Age. The use of the Kokkomäki cremation cemetery began during the Merovingian Period (c. 600–800 CE) and extended into the Crusade Period (c. 1050–1250 CE), when at least one inhumation burial was made in the cemetery (Fig. 2). It was not uncommon during this period to dig inhumation graves within cremation cemeteries, and the practice reflects the gradual shift from cremation to inhumation under the growing influence of the Catholic Church.

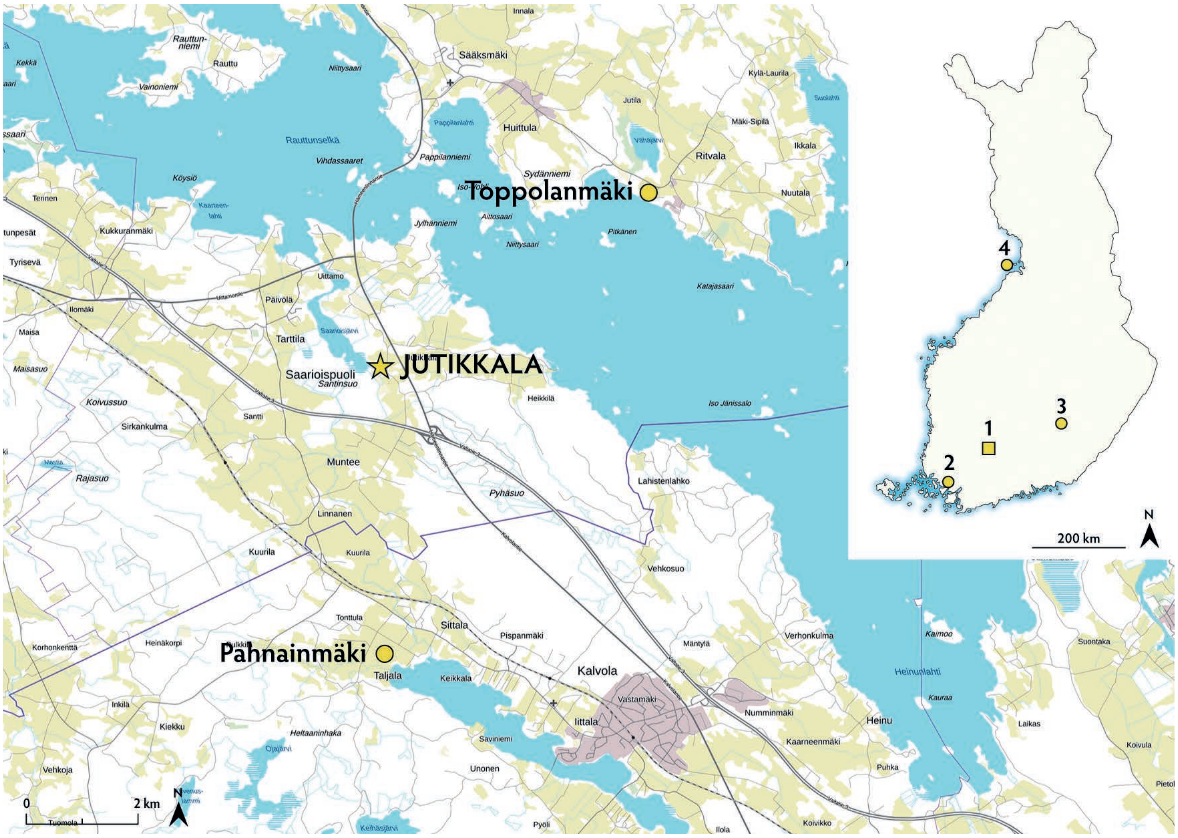

FIGURE. 1. Jutikkala and the nearby cemeteries of Toppolanmäki and Pahnainmäki. In the detail map: 1 – Jutikkala Kokkomäki. Other sites with previously presumed decapitations in Finland: 2– Turku (Kaarina) Kirkkomäki, 3 – Mikkeli Tuukkala and Visulahti, 4 – Hailuoto. Image: Ulla Nordfors & Maija Holappa.

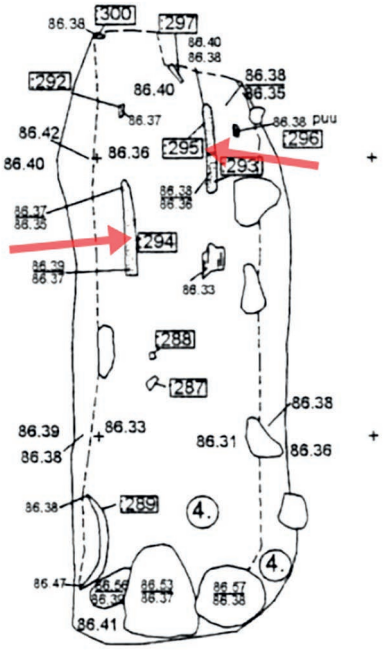

FIGURE 2. The plan of the Kokkomäki grave illustrates clearly how poorly preserved the organic material is in the grave. Arrows point to the limb bones that were among the only preserved bones in the grave. Image: Haggrén & Hakanpää 2002, modification Ulla Nordfors.

The Kokkomäki inhumation grave was excavated in 2001. Measuring 260 cm in length and 100 cm in width, the grave was oriented SW–NE, with the deceased placed in a coffin with feet pointing northeast. The skeletal remains were poorly preserved, consisting only of fragments of both tibias and the left femur.[8] Such poor preservation of organic material is typical for Iron Age and early medieval burials in Finland.[9] Teeth or tooth enamel fragments often survive even when other materials do not, and in this burial, unburnt skull fragments and a molar were found from an unusual location, 10–20 cm above the legs.

The possibility of decapitation has been cautiously suggested by Haggrén et al.[10] though there is uncertainty as to whether the lower limb remains and cranium fragments belong to the same individual. DNA analysis of both bones would be required to confirm this. So far, only a tibia fragment (KM 32916: 294) has been sampled for ancient DNA, but even regardless of the result, multiple interpretations about the grave are possible. We will discuss the possible interpretations in the article.

The grave fill contained numerous feminine or ungendered artefacts originating from a cremation burial, including bronze spirals, arm rings, bronze and glass beads, keys, and a bone comb.[11] A scythe blade on the left side of the deceased, along with a smaller blade fragment and a bone arrowhead at the foot end, were associated with the buried individual, who was determined as male based on the items.[12] DNA analysis can be used to infer the genetic sex of the deceased, which is particularly useful in cases of poorly preserved osteological material and graves where artefacts may not correspond to the biological sex of the individual.[13]

DNA ANALYSIS AND RESULTS

DNA analyses were carried out in a dedicated ancient DNA laboratory in the Max Planck Institute for Human History, Jena, Germany. DNA was extracted from 63 mg of bone powder drilled from the tibia fragment[14] and converted to a double-indexed, single-stranded DNA sequencing library using an automated workflow.[15] The DNA library was enriched for human DNA with an in-solution capture that targets approximately 1.2 million genome-wide single nucleotide markers.[16] The captured library was sequenced to 20 million reads using an Illumina NovaSeq X Plus.

The sequences were trimmed with leeHom v1.1.5-ba378b6[17] using parameter --ancientdna, and mapped to human reference genome version hs37d5 with bwa aln version 0.7.12 with parameters -n 0.01, -o 2, and -l 16500.[18] For contamination estimation, sex determination and genotyping, we used the nf-core/eager v.2.5.0 pipeline.[19] Mapped sequences were deduplicated with Picard MarkDuplicates v2.26.0 and filtered with Samtools v1.12 to remove sequences shorter than 30 bp. Authenticity of the sample was evaluated based on the cytosine deamination patterns on the mapped

sequences using mapDamage2 v2.2.1,[20] and contamination was quantified with ANGSD v0.935.[21] Genetic sex was estimated with sexDetERRmine v1.1.2[22]. Pseudohaploid genotypes were called with pileupCaller from sequenceTools v1.5.2 using randomHaploid mode,[23] and base and mapping quality thresholds 30. Y haplogroup was determined using Yleaf v3.2.1[24] with parameters -r 1 and --old, which uses the ISOGG 2019 tree for Y-haplotype classification.

The sample yielded 0.14% of endogenous human DNA, which demonstrated poor DNA preservation. The recovered DNA fragments showed a pattern of DNA decay typical for ancient DNA. The autosomal contamination estimate was low, although with high uncertainty. After enrichment and sequencing, we obtained only 51,650 out of the targeted 1.2 million genome-wide markers. The ratio of sex chromosomes relative to the autosomes indicated that the studied individual was genetically male. Due to the low coverage of the sample, a mitochondrial haplogroup, which would be informative regarding the maternal ancestry of the individual, could not be determined. We were, however, able to determine the Y chromosomal haplogroup, which is inherited via paternal lineage, albeit with low resolution. It falls on the I1 (Z2886) haplogroup. Its sublineage I1a (M253) is common in present-day Scandinavia, but also found elsewhere in Europe.[25] I1a is the second-most common Y haplogroup lineage in present-day Finland (24.6%[26]). It is mostly found in the southwestern coast of Finland, where Scandinavian influence has been the strongest.[27]

We visualised the individual's autosomal ancestry using PCA. The PCA was spanned on the genetic variation of 59 present-day West Eurasian groups,[28] and the genome of the Kokkomäki individual was projected on top of that variation using the --lsqproject parameter in the smartpca software.[29] Additionally, we set maximum group size to 25 and used the parameter newshrink: YES. On the PCA, the ancient Kokkomäki individual falls within the variation of the present-day Finns (Fig. 3). We further tested which present-day population shares most alleles with the Kokkomäki individual using outgroup F_3 statistics of the form f_3(Test, VOK001; Mbuti.DG), where *Test* represents 50 present-day groups in The Simons Genome Diversity Project,[30] *VOK001* represents the Kokkomäki individual, and *Mbuti.DG* represents an unrelated outgroup with which to root the comparison. F_3 statistics were estimated using the *xerxes* software function *F3vanilla*.[31] This test confirmed that the individual shared most genetic drift, and therefore, alleles, with present-day Finns (Fig. 4). We then tested if the individual carries additional ancestries in addition to the Finnish ancestry by calculating a set of F_4 statistics f_4(Mbuti.DG, Test, VOK001, Finnish.DG). No statistic had a significant deviation

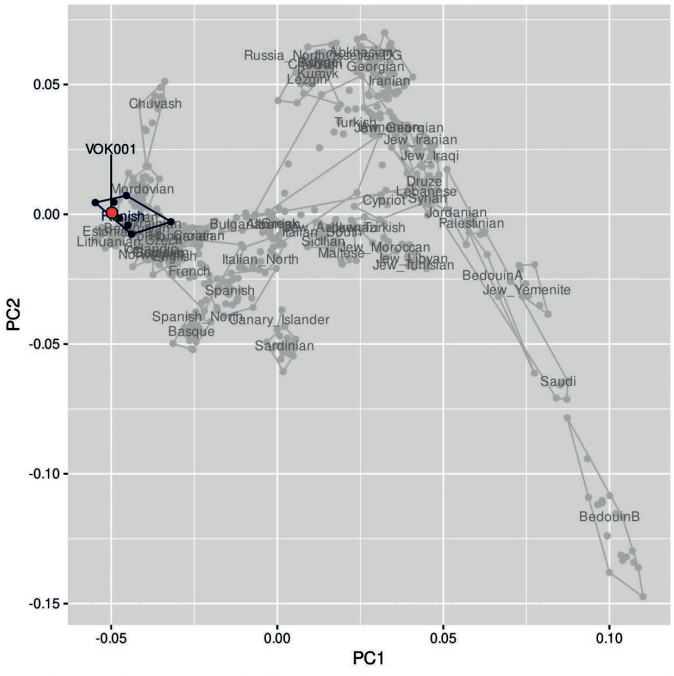

FIGURE 3. Results of the principal component analysis. The genome of the Kokkomäki individual (VOK001) is projected onto the genetic variation of present-day West Eurasians. Labels indicate a median PCA coordinate of each present-day group. Present-day Finns are highlighted in blue and enclosed with a convexhull. Image: Sanni Peltola.

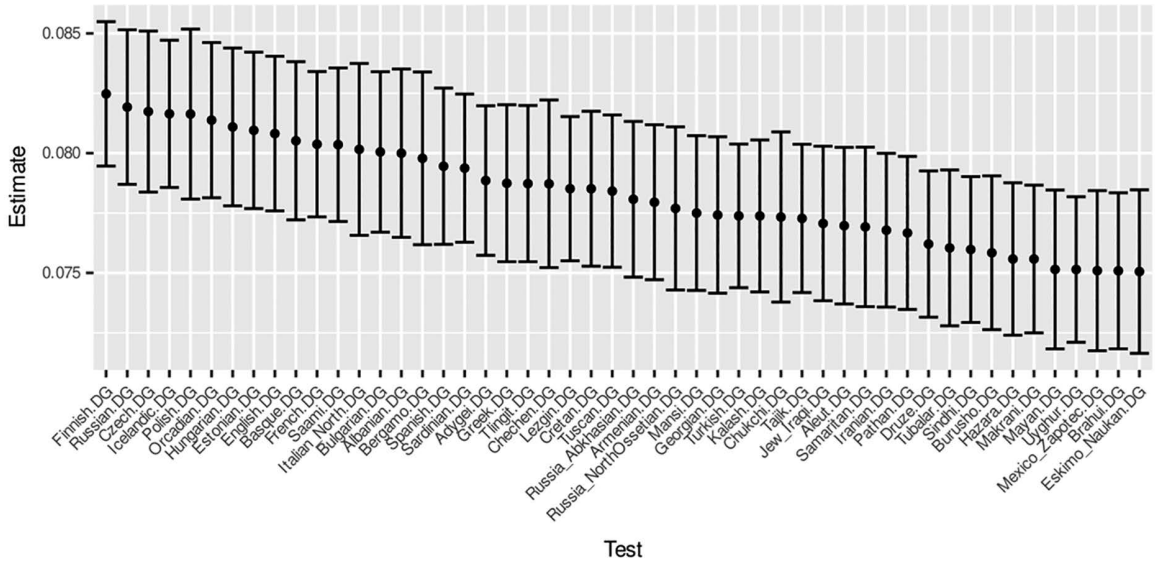

FIGURE 4. Outgroup F_3 statistics. Higher estimates indicate more shared genetic drift between VOK001 and the test population. Error bars show 3 standard errors. Image: Sanni Peltola.

from 0, i.e. the Kokkomäki individual and present-day Finns are symmetrically related to all other 110 present-day groups. These findings suggest that the individual was most likely of local ancestry. However, the low coverage of the genome is likely to affect our ability to detect subtle differences in the ancestry of the Kokkomäki individual.

In addition to human DNA, we also studied the possible presence of pathogen DNA sequences in the sample. The pathogen screening was carried out by comparing the sequences against a large database of known pathogen genomes using the HOPS pipeline.[32] However, no pathogen DNA was found.

DISCUSSION

According to studies of Viking Age Scandinavia and Medieval Ireland, decapitated individuals were predominantly male.[33] Although DNA analysis confirms the Kokkomäki individual as genetically male, it does not prove that the case represents a decapitation. Even if the Kokkomäki case was a decapitated burial, DNA analysis could not be used to identify any potential reasons for it. In theory, finding out a potential motive could have been possible. Historically, individuals with conditions associated with disease-related stigma may have been decapitated due to being perceived as dangerous or cursed. For instance, an individual with congenital head and facial deformities had been beheaded in medieval Hailuoto.[34] Although we did not find any medical conditions or traces of pathogens that could explain the possible beheading, the possibility of an infectious disease cannot be excluded because of the poor DNA preservation. However, not all medical conditions affecting an individual's physical characteristics or personality are visible in DNA, nor would social motives for decapitation be detectable with ancient DNA analysis. Historically, beheadings have had varied motives, from political control to cultural and ritual practices.[35] Judicially, beheadings have been regarded either as humiliating or as an honourable form of execution, and the diverse motives behind the practice reflect complex interactions of power, beliefs, and fear across different periods and societies. Although the DNA of the Kokkomäki individual was not particularly well preserved, our results suggest that

the individual did not come from outside Finland or carry ancestry that would have set them apart from the local population. Therefore, any posthumous handling of the individual likely occurred within their own community.

Generally, the poor preservation of organic material in Finnish soil complicates interpretations. The bone material in the Kokkomäki grave, like in other potential decapitation cases in Finland, is too poorly preserved to reveal cut marks on the cervical vertebrae and mandible.[36] Due to the preservation issues, decapitations are difficult to identify, and a study of Early Medieval burials in Häme found no definitive cases between 900–1400 CE,[37] despite such interpretations being proposed elsewhere in Finland.

The male burial in Mikkeli Tuukkala grave 1/2009, which lacks a head and has a grave pit that abruptly ends at the shoulders, is considered a fairly reliable case of beheading, but has not been discussed in detail.[38] Jorma Leppäaho suggested that the Crusade Period grave 31 at Mikkeli Visulahti was also a beheaded burial.[39] The grave stands out from the others in the cemetery because of an unusually thick stone setting on top of it. However, this interpretation is questionable due to the ambiguous evidence. Leppäaho writes in his excavation report, that there was '*a dark patch of soil, as if a decayed skull*' ('tumma maaläiskä, ikään kuin maatunut pääkallo').[40] A partial molar was found in the patch, convincing Leppäaho that his interpretation was correct. However, it is not unusual to find additional teeth or bones in inhumation graves,[41] and Leppäaho's interpretations have sometimes been imaginative. For example, he interpreted a vague find context at Hollola Kirkkailanmäki as a male and a female buried in a 'coital position', and the triple burial at Valkeakoski Toppolanmäki as a dramatic burial of four individuals tied together.[42]

At the Late Iron Age cemetery of Kaarina Kirkkomäki in Turku, three graves (21, 30, and 32) have been interpreted as decapitated.[43] Grave 21 had been made in a tree-trunk coffin. A sickle was found on the lower limbs, and beads at the head end. A round organic mass around the waist was interpreted as possibly a decayed skull. It was concluded that the head was possibly at the waist, but also noted that the arms were not in their normal anatomical positions.[44] Grave 30 was also made in a tree-trunk coffin, and according to the excavators,[45] there were clear signs of secondary disturbance above the burial level. Pieces of cranium and mandible were found at the waist, and some teeth located at the foot end, and one of the larger bones was found in a vertical position. Grave 32 belonged to a male buried in a coffin. In this grave, the skull was found c. 50 cm away from the rest of the skeleton.[46] Based on the observations and the loss of anatomical connections, the Kirkkomäki graves likely represent secondary disturbances rather than beheadings. Deliberate disturbance of graves of ancestors has been practised in the past for various ritual and political reasons, and quite often it has included the manipulation of bones, for example, relocation or removal of the skull.[47]

Secondary disturbances can sometimes be indicated by the presence of certain skeletal elements. For example, the mandible and cervical vertebrae may have stayed in their correct anatomical positions, even if the cranium has been moved.[48] While it is not possible to observe anatomical connections in the Kokkomäki grave, secondary disturbance remains another possible interpretation if the limbs and the cranium belong to the same individual.

If the bones in Kokkomäki grave belong to different individuals, there would still exist various possible interpretations of the burial. Secondary use of artefacts and human remains is documented nearby at Hämeenlinna Pahnainmäki, only 7 km from Kokkomäki. In this Crusade Period grave, the cremated artefacts and bones were placed on the buried individual as if they had been part of the costume, possibly reflecting bonding with the earlier generations.[49] Unburnt secondary bones belonging to another person are also known from other Crusade Period and medieval graves in Finland, such as grave 404 at Eura Luistari and medieval graves at Kökar.[50]

Another possible interpretation could be a double or multiple burial. A contemporaneous triple burial at Valkeakoski Toppolanmäki, only 7,5 km from Kokkomäki, contained three individuals who had been placed in a single coffin with their heads in different directions. Both Kokkomäki and Toppolanmäki burials occurred during a period that saw a general increase in multiple burials.[51]

CONCLUSIONS

We conducted an ancient DNA analysis of the Kokkomäki grave, and considered the possibility that the case may represent a headless burial. There still remains uncertainty about whether the leg bones and the skull fragments found above them belong to the same individual, as only the tibia has undergone DNA analysis for the time being. The skull fragments should be studied using aDNA in the future.

Here, we have considered several alternative interpretations to account for the presence of skull fragments near the legs. If the skull and leg bones belong to different individuals, this could suggest either the interment of someone else's remains in the grave or the simultaneous burial of two individuals. Even if the bones belong to the same individual, beheading is not the only explanation; evidence from Finland also suggests the possibility of deliberate grave disturbance.

The Kokkomäki grave is a good example of the complexity and ambiguity of archaeological interpretations, particularly when dealing with poorly preserved or incomplete evidence. It highlights the challenges in determining the nature of burial practices and grave contexts based on fragmentary remains and the potential for multiple, equally plausible explanations for the same set of findings. We suggest that it is important to consider a wide range of possibilities and acknowledge the limitations of drawing definitive conclusions from incomplete data. Archaeological interpretations are rarely straightforward, and multiple narratives can emerge from the same set of data. Therefore, careful and critical analysis is required when making interpretations.

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NOTES

1 Armit 2012.
2 Buckberry 2014: 132; Reynolds 2009; Tucker 2015.
3 Jessen & Olsen 2024; Wiseman et al. 2021.
4 Reynolds 2009.
5 Gardeła 2013: 117–9.
6 Gardeła 2013: 130–1.
7 Haggrén & Hakanpää 2002.
8 Haggrén & Hakanpää 2002: 7.
9 Moilanen 2021: 32.
10 Haggrén et al. 2002: 7.
11 Haggrén & Hakanpää 2002: 7–8.
12 Haggrén et al. 2002: 7.
13 Hedenstierna-Jonson et al. 2017; Moilanen et al. 2022.
14 Dabney et al. 2013; Velsko et al. 2020.
15 Gansauge & Meyer 2013; Kircher et al. 2012.
16 Fu et al. 2013; Mathieson et al. 2015.
17 Renaud et al. 2014.
18 Li & Durbin 2010.
19 Fellows Yates et al. 2021.
20 Jónsson et al. 2013.
21 Korneliussen et al. 2014.
22 Lamnidis et al. 2018.
23 github.com
24 Ralf et al. 2018.
25 Rootsi et al. 2004.
26 Preussner et al. 2024.
27 Preussner et al. 2024.
28 Lazaridis et al. 2014; 2016.
29 Patterson et al. 2006.
30 Mallick et al. 2016.
31 Schmid et al. 2024.
32 Hübler et al. 2019.
33 Carty 2015; Gardeła 2013: 125.
34 Núñez 2015.
35 E.g., Bonogofsky 2015; Tucker 2015.
36 See Crerar 2014: 72 for typical markers.
37 Moilanen 2021.
38 Mikkola 2009: 180.
39 Leppäaho 1957: 17–8.
40 Leppäaho 1957: 18.
41 Puolakka 2020.
42 See Moilanen 2021: 57, 60.
43 Asplund & Riikonen 2007: 24.
44 Riikonen 2017.
45 Riikonen 2017.
46 Riikonen 2017.
47 Aspöck et al. 2020: 13.
48 Crerar 2014: 73.
49 Moilanen 2021: 73.
50 Gustavsson 1988: 151; Lehtosalo-Hilander 1982: 327; Moilanen 2021: 25.
51 Moilanen 2021.

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Erki Russow & Ivar Leimus

LOST IN A HURRY?
A 15th-century silver seal matrix from Valga, South Estonia

ABSTRACT

In the spring of 2023, a rare find was made in southern Estonia, near the town of Valga – a 15th-century seal matrix of a relatively unusual material and type. Only a handful of similar hinged seal matrices are known from medieval Livonia, and all of them are made of silver. In this paper, we will give an overview of the find, review the other locally related seal matrices, and discuss the possible identification of the owner of the object and how the site relates to the wider cultural landscape.

Keywords: medieval Livonia, seal matrices, von der Ropp lineage, Valga, metal detecting

INTRODUCTION

As a former editor of SKAS, Georg Haggrén has often written about the sensitive topic of metal detecting in his editorials, addressing issues such as the lack of find contexts, the increasing number of unearthed artefacts, and the continuing deficiencies in Finnish legislation.[1] From across the Gulf of Finland, we wholeheartedly agree with his insights, as Estonia's archaeological heritage protection faces similar challenges, but also occasionally celebrates remarkable discoveries.[2] This article focuses on one such find, selected to reflect some of Georg's broad research interests.

The artefact in question is a late medieval seal matrix that was found by a detecting enthusiast in the spring of 2023, in an unexpected location: a few kilometers outside the heart of the town of Valga in southern Estonia. The site is located below the current long-distance power line, in a grassland that has been used as a field and pasture since at least the 17th century. Given the lack of information on the medieval settlement of Valga (Germ. *Walk*) and its immediate surroundings, it is difficult to explain how such a high-status object could have been found in an area with no obvious traces of former manors, fortified houses, or other contemporary elements of the medieval cultural landscape. What can be gleaned from the available data and how it can be interpreted is discussed in the following pages.

THE VALGA SEAL MATRIX – its parallels in medieval Livonia and beyond

The Valga seal matrix is a remarkable artefact in many respects. First, the object, which weighs 30 grams and measures 34 × 34 mm, is made of silver[3], which is unusual in Estonian medieval archaeology, as all other medieval seal matrices unearthed so far within the borders of medieval Livonia are made of lesser metals. No less remarkable is its design: instead of the usual hanging loop on the back or a chessman-like shape, it has a folding handle attached to the matrix by a hinge (Fig. 1).

FIGURE 1a–b. Silver seal matrix found in Valga. Estonian History Museum AM 41274: 2 P 6777. Photo: Jaana Ratas.

At first sight, it was considered an anomaly in Estonian medieval collections when we wrote the report commissioned by the National Heritage Board of Estonia.[4] However, only after submitting the report did we realize that our assessment of the uniqueness of the find needed some clarification. We were aware of two medieval silver seal matrices in local historical collections, but we did not understand that the previous examples were also of the same type. And according to published sources, there are also a few similar items from present-day Latvia.

The first two silver seal matrices have been studied in detail from an art historical and historical point of view.[5] Both come from Tallinn, one from St Olaf's Church in Tallinn and the other from the Tallinn Goldsmiths' Guild. Stylistically, they are similar, with the patron saint in the center (St Olaf and St Eligius, respectively) and a legend on a scroll running around the die. The main difference is in size, as the matrix of the St Olaf seal is considerably larger, measuring 44 mm in diameter. The Goldsmiths had a smaller one, measuring only 30 mm. Based on the design and comparison with written sources, the seal matrices have been dated to around 1470–1520, the seal from St Olaf's Church probably to the second half of the 15th century and the other to around 1500.[6]

Interestingly, the author of the above-mentioned article did not consider the typological aspect of the seal matrices. This is understandable, since the back of both matrices has a post-medieval addition – the turned wooden handle, probably added in the 17th or 18th century. However, closer examination of the seal matrix from the Tallinn goldsmiths reveals that the object has a hinged handle that is placed in a deliberately made slit (Fig. 2).

The typological confirmation of the second artefact is more difficult. The wooden handle of the seal matrix from St Olaf's Church is attached to the original in a different way. Here, the maker of the handle used a copper alloy sleeve around the edge of the seal matrix, making the possible hinged handle invisible (Fig. 3). There is a reason for this. As the sleeve around the seal matrix is quite thin, it may indicate that the hinged handle is missing, which is an additional reason for using the wooden handle. To confirm our assumption, we X-rayed the artefact in the laboratory of the Archaeological Research Collection at the University of Tallinn in the spring of 2024. The result confirms our assumption with some hesitation, as the images show a clear line dividing the back of the seal matrix into two halves (Fig. 4a–b). This is most likely a soldering mark from the now missing hinge, but without closer inspection, there is plenty of room for alternative interpretations.

The additional study of earlier publications provided us with two further examples, again not from archaeological but from historical collections. In 1896, during the Russian Imperial Archaeological Congress in Riga, a special display case was devoted to Livonian seal matrices. From the accompanying exhibition catalogue, we learn that at least two silver objects were on display – one belonging to the Riga goldsmiths' guild and the other used for sealing municipal documents in Limbaži (Germ. *Lemsal*).[7] According to the description, both had soldered hinges, bringing the number of hinged silver seal matrices in our region to five examples.

Chronologically, the seal matrix of the Riga goldsmiths fits well with the corpus. The image once again depicts the patron saint of goldsmiths, and the background is filled with curved scrolls with text in Gothic minuscule. Stylistically, it dates back to the first quarter of the 16th century.[8] The seal matrix from Limbaži, on the other hand, has a completely different appearance: the town's coat of arms is surrounded by the text in block letters, which places it in a slightly more recent period (mid-16th century, according to the catalogue).

All in all, the current state of research allows us to make some generalizations. It seems that hinged seal matrices made of silver were used in Livonia from the second half of the 15th century to the middle of the 16th century at the latest, and that the owners were usually corporations or public institutions, except for the Valga find (see below). The evidence comes from both Estonian and Latvian territory, suggesting that this was not a narrow tradition, but that similar silver artefacts were used throughout medieval Livonia, although much less frequently than the copper-alloy seal matrices.[9]

Overall, the same pattern is likely to apply elsewhere. Of a handful of Finnish medieval seal matrices, only one is a hinged silver seal matrix from the late 15th or early 16th century, which belonged to a priest, Håkan Håkansson, and was found near the Halikko vicarage in Salo.[10] In Sweden, a quick search

FIGURE 2a–b (above). Silver seal matrix of the Tallinn goldsmiths (a), and a side view with its post-medieval handle (b). TLM 4288. Photo: Tallinn City Museum.

FIGURE 3a–b (below). 15th-century silver seal matrix of St Olaf's Church in Tallinn with a post-medieval handle. From a private collection, on display at Niguliste Museum. Photo: Jaana Ratas.

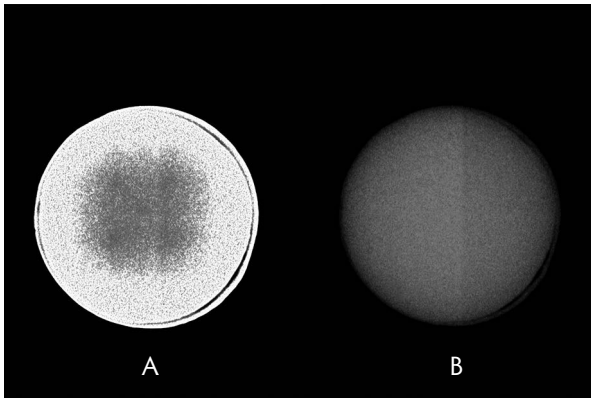

FIGURE 4a–b. X-ray images of the St Olaf's Church silver seal matrix with a possible location of the sealed hinge. Photo: Tarvi Toome.

of the collections of the Historical Museum revealed at least nine hinged seal matrices made of silver dating from the first half of the 15th century to the early 16th century. Their owners were usually members of the elite rather than corporations, from kings and knights to canons and presbyters.[11] This number is not definitive, as some of the objects are deposited elsewhere, and, in addition to the silver examples, hinged seal stamps made of copper alloy were also in use.[12]

The situation in Denmark is not very different from that in Sweden. Here, too, the silver seal matrices represent only a marginal part[13] of the medieval seal stamps that have survived, of which only a few are hinged – the most recent assessment suggests that of about 800 medieval examples perhaps c. 20 are made of silver and less than five have a hinge.[14] Their owners were mostly members of the higher nobility or monasteries, and the objects are usually dated to the second half of the 15th century or the beginning of the 16th century. From previous literature, we can refer to 1–2 finds: the hinged seal matrix of the state chancellor Hans Kjeldsen (died after 1492), made of silver, and the other, made of copper alloy (dated 1494), belonging to the Holy Ghost monastery in Randers.[15] Further finds mentioned in Grandjean 1944 are in the collection of the Swedish Historical Museum, and are therefore not included here.[16]

In the case of Germany, it is difficult to get a good overview from the very scattered sources. There is a hinged silver seal matrix from Cologne[17] dated 1487, two silver matrices from the first half of the 16th century in the collection of the Staatliche Museen zu Berlin[18], at least one hinged silver matrix in the extensive collection of seal stamps (c. 600 objects) in the historical museum of Frankfurt am Main[19] and a copper alloy seal stamp found during archaeological excavations at the castle of Assen in North Rhine-Westphalia, also dated around 1500.[20] The earliest hinged seal stamp, belonging to Heidelberg University and dated to 1386, has been now declared as a pre-1857 forgery.[21] Whether the original die had a hinge is, unfortunately, impossible to confirm as the artefact has not survived, but based on the design of the handle, it cannot be excluded. As for the ownership of the matrices, we see a wide range of users, from a priory in Alsace and a prior in Cologne, to a knight in Westphalia and the Duke of Brunswick. Last, and seemingly also the least – in 1535, the supervisors of the Frankfurt house poors ordered a hinged silver seal stamp from a goldsmith.[22]

FIGURE 5. The image of the Valga seal matrix, reversed. Photo: Jaana Ratas.

Hinged silver seal stamps were also occasionally used in France, the Low Countries and Britain, the earliest examples dating from the mid-15th century and the latest from the end of the 17th century, usually associated with the upper echelons of society or eccle-

siastical institutions.[23] It is interesting to note that in the case of the hinged seal matrix, probably purchased in 1448 and engraved with the arms of the city of Norwich, the seal stamp also included a wooden handle with two slots cut into the bottom.[24] It is not clear from the description whether the handle is a post-medieval addition, as in Tallinn, or contemporary with the matrix.

THE OWNER OF THE VALGA SEAL MATRIX

Having established the general background to silver hinged seal matrices, it is now time to take a closer look at the possible owner of the object found near Valga. As the artefact is in excellent condition (Fig. 5), the first steps are relatively easy. The coat of arms on the die depicts a shield with a chevron intended five times on which a bucket helmet rests. The latter is decorated with a peacock's feathers with eight feathers growing from a similar chevron depicted on the shield. The text on the matrix is evenly placed around the edges and gives the name of the owner: 's' fred[e]rik ° van ° d[e]r ° rope', meaning that the seal stamp belonged to a certain Frederik van der Rope, or in a more modern style of writing, Friedrich von der Ropp.

We can confirm the identification of this family without much effort. The house of Rope/Ropp dates to the beginnings of medieval Livonia.[25] Their lineage begins with the Theodericus de Raupena, the elder brother of Bishop Albert de Beckeshovede – the one who founded Riga in 1201 and successfully organized the Christianisation of present-day Latvia and Estonia in the first quarter of the 13th century. The main element of their coat of arms is the same: a chevron intended five times. In the case of the Buxhoeveden family, the colour is red, while the Ropp family uses black (Fig. 6).[26] What is interesting about the Valga find is the double use of the chevron in the coat of arms of Frederik van der Rope's, as in the Buxhoeveden line. Does this indicate that the owner wanted to establish a clear link with one of the most powerful families in medieval Livonia? It is hard to say, but it may be in keeping with the personality of Frederik, if he is indeed the man we are about to introduce.

The founder of the de Rope lineage, Theodericus (c. 1165–1236), came to Livonia with his brother Albert from northern Germany and probably came from a noble family whose main residence was Bexhövede near Bremerhaven. Theodericus is first mentioned in 1203, but the earliest evidence of the surname 'de Raupena' is from 1221. The surname is probably derived from his first fief near the Straupe (Germ. *Roop*) river in Latvia.[27] However, in 1224, Theodericus received Otepää (about 50 km north of Valga) as a fief from his other brother, Bishop Hermann.[28] Thus, for the last ten years of Theodericus' life, his main area of activity was probably the territory between Otepää and Tartu – the main centers of the prince-bishopric that belonged to his brother Hermann.

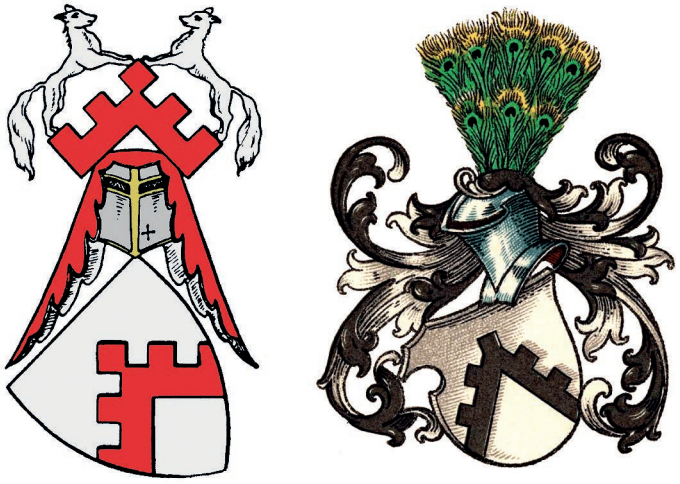

FIGURE 6. The coat of arms of the Buxhoeveden (left) and Ropp (right) families. Source: Wikipedia.

The van der Ropes were one of the few ruling families in the prince-bishopric of Tartu between the 13th and 16th centuries, and one of the members, Johannes III van der Rope, was the prince-bishop of Tartu between 1499 and 1505.[29] The Estonian branch of the de Rope family died out in the mid-16th century, but the Couronian branch survives to this day.[30]

Not surprisingly, the surname 'de Rope' is mentioned quite often in medieval written sources. From these, we can see that the family had some favourite male names. As well as Theoderich/Diderick, we will also find Johannes, Nikolaus and, finally, Frederik. There is a *Her* Wrederic van der Rope, possibly a vassal of the prince-bishop of Tartu, who witnessed the sale of Kuigatsi (about 30 km north-northeast of Valga) in 1366[31], and probably again in 1388, when the castle of Ixkule (Lat. *Ikšķile*, Germ. *Üksküll*) was pledged.[32] Between 1391 and 1420, another Frederik de Rope was provost in Tartu and canon of the cathedral in Haapsalu.[33]

And then we have Frederik, son of the deceased Nicolaus van der Rope, who presented his deeds of enfeoffment to the Archbishop of Riga on 10 January 1431.[34] Eleven years later, on 25 June 1442, he received a confirmation from Emperor Frederick III that he was free to inherit his present and future possessions and only had to serve the prince-bishop of Tartu during wartime.[35] Probably the same Frederick van der Rope was the head of the vassals of the prince-bishop of Tartu in 1445 at the latest and visited the Grand Master of the Teutonic Order in Prussia in August 1445, likely to influence the choice of the future prince-bishop of Osilia. Frederik maybe even suggested organizing a raid on the lands of the prince-bishopric.[36] He also raised his old grievances against the prince-bishop of Tartu and his cathedral chapter, but as he refused to settle his dispute with Tartu and would not give up the feud, he was ordered to leave Prussia on 8 July 1446.[37] In April 1454, he attended a meeting in Riga as a Harju-Viru vassal of the Livonian Order.[38] A few months later, in July 1454, Frederik mediated[39] between the Master of the Livonian Order and the Archbishop of Riga, and this was the last time he was active in the internal politics of medieval Livonia.[40] After that, the first name Frederik disappears from the van der Rope line, at least at the present stage of the research we are not aware of the use of the name during the late 15th and 16th centuries.

So, which of the many Frederiks owned the seal matrix lost at some point in the field near Valga? When considering the overall design and type of the die, then the earlier Frederiks should be excluded – hinged seal dies seem to be rare before the middle of the 15th century, and the decoration follows quite well similar seal dies from the second half of the 15th century. So Frederik van der Rope, who appears in writing as a young man in 1431 and is last mentioned (as far as we know at the time of writing) in 1454, could be the right person behind the recently unearthed find. His pretentious and adventurous character, as mentioned above in passing, might fit with the visual message on the die – the signer is a man from an old and influential family. But exactly when the seal matrix was lost – was it before or shortly after 1454, or decades later – remains an open question, at least for now.

PLACING THE FIND IN THE LANDSCAPE

But how should the location of the seal matrix be interpreted? At first sight, the artefact comes from an area (Fig. 7) that has no logical connection with either the possible owner or the past cultural landscape – in contrast to the many other stray finds of seal stamps or signet rings from the Middle Ages or later that have at least some connection with the places or properties nearby.[41] In the present case, there is no information available that the van der Rope family had an estate in or near Valga. The nearest known property of theirs was in Roobe (Germ. *Ropenhof*), about 21 km north-northwest of Valga[42] and in 1452, Didrich van der Rope ceded a village called Ollete (Est. *Õlluste*), about

FIGURE 7. Valga on the map from 1683. The findspot of the seal matrix has been marked with a square. The hatched line is an old highway. Map: Estonian National Archives, EAA.308.2.123 l. 1.

25 km north-northeast of Valga, to the Wrangell family.[43] So, there is only a theoretical chance that the site from where the seal matrix was found belonged to the van der Rope family.[44]

There may be other ways of placing the find in a wider context. First, the Valga of today had a certain supra-regional importance in the Middle Ages. As a settlement located practically in the center of medieval Livonia and at the crossroads of the Livonian Order, the Archbishopric of Riga and the Prince-Bishopric of Tartu, from the mid-14th century Valga was often chosen as a place for wider meetings and conferences. Especially in the 15th century, the territorial lords and towns often held their diets in Valga, and the representatives of the vassals were also present at these meetings. Considering his position and activities, the last of the above-mentioned Frederik fits well into the lengthy list of participants, even though he is not mentioned personally in the preserved documents. As Frederik was last mentioned in 1454, we could point to the State Diets of June 1454 or February 1456.[45]

At the same time, Valga was a small center and not everyone likely had a chance to be accommodated in the houses close to the meeting place. It is, therefore, possible that the nearest areas were also used, including the fields around Valga. Considering that the find place of the seal matrix lies close to the old highway that went from Riga to Pskov[46] and on the field that probably belonged to the inhabitants of Valga, one can assume that Frederik, as a knight, resided with his subordinates in an encampment. As this type of temporary construction does not leave any substantial elements in the landscape, the location of a camp – tents, fireplaces, storage space, enclosure for horses, etc. – is visually unrecognizable. The loss of such a valuable object in a field seems a very careless act, but it cannot be ruled out. A thorough detector survey of the wider area around the site may confirm or refute this hypothesis. Unfortunately, at the moment, we only have one more stray find to support our theory.

Namely, a few meters away from the seal matrix, the same detector enthusiast unearthed another medieval artefact. This is a silver bezant, gilded[47] on the obverse (Fig. 8). While more or less similar decorative applications have been found in medieval and early modern peasant hoards as well as stray finds by detectorists all over Estonia, they are usually less elaborated.[48] The

FIGURE 8. A silver mount found near the silver seal matrix in Valga. Estonian History Museum AM 41274: 1 A 1336. Photo: Jaana Ratas.

present example is in line with some silver mounts from western Estonia (Erja, Eametsa) that could be associated with either ecclesiastical textiles (clerical vestments and statues, altar fittings, etc.) or noble clothing (belts and purses, outerwear, even shoes).[49] Unfortunately, the image on the bezant leaves room for interpretation. On the whole, it belongs to the 15th century (but could be a little older), and the motif in the center of the object – a flower with five petals – is too general to be associated exclusively with the nobility or the church. It could be both, as sometimes the aristocracy and the urban elite bequeathed similar silver objects or decorated textiles to the church to be transformed into a cloak to dress a statue of the Virgin or the Christ Child.[50] Either way, a connection between Frederik van der Rope and his associates is possible but not certain.

TO CONCLUDE

The silver seal matrix found in Valga is an intriguing stray find that provides much food for thought. The ideal preservation of the artefact allows us to identify the previous owner, not just as a name on the object, but as a historical figure from the late Middle Ages. Although we cannot say with absolute certainty that our identification of the person will remain as suggested in the paper, it is certainly an interesting side note in the history of the von der Ropp lineage. Moreover, the silver artefacts found are practically the first medieval objects from Valga and probably also the first that more or less directly highlight the settlement as an important medieval meeting place. In addition, these stray finds are good examples of how the artefacts, if handed over, could simultaneously provide new layers to the study of medieval history and material culture. It is to be hoped that the cooperation between the local detector community and the heritage authorities will continue to yield similarly pleasant surprises in the future.

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NOTES

1 E.g. Haggrén 2017.
2 For the many highs and lows regarding metal detecting activities in Estonia, see the past issues of the annual journal *Archaeological Fieldwork in Estonia*.
3 94.22% silver, 3.65% copper, 0.98% gold, 0.56% lead, 0.46% sulphur, etc. The XRF analysis was carried out by Ragnar Saage (University of Tartu).
4 Russow & Leimus 2023.
5 Mänd 2010.
6 Mänd 2010: 120–5.
7 Katalog 1896: Tafel 32, 14, 15. The Riga seal matrix has been lost since the guild was dissolved in 1936 (Mänd 2010: 131). The Limbaži seal is in the collections of the Museum of the History of Riga and Navigation, inv. no. VRVM 77420.
8 Mänd 2010: 131.
9 At present, the number of surviving medieval seal matrices in Estonia (including both archaeological and historical collections) is around 40, but the number is constantly growing. For an overview of seal matrices from the 13th and 14th centuries, see Leimus 2018. At the time of writing, silver hinged seal matrices make up about 6–7% of the total.
10 Immonen 2023: 55. Another Finnish silver seal matrix, a late 14th-century seal stamp from Hämeenlinna Castle (Immonen 2009: cat. 26:4), has a fixed handle and thus falls outside the find group discussed in this paper.
11 Search of samlingar.shm.se (05.09.2024).
12 Two silver hinged seal matrices were found in the grave of the Svante Nilsson (c. 1460–1512), a Swedish nobleman and regent of Sweden from 1504 to 1512 (finds published in Andersson 1959). There are at least five hinged seal stamps made of copper alloy in the collections of the Historical Museum, dating from c. 1400 to the end of the 15th century.
13 Andersen 2002: 66–7. The number of medieval seal stamps has increased dramatically in recent decades (see, for example, www.metaldetektorfund.dk) due to the growing popularity of metal detecting.
14 Personal written communication between Michael Andersen (The National Museum of Denmark) and Erki Russow, 20.12.2024.
15 Andersen 1997: cat. no. 1; Grandjean 1944: 24.
16 A hinged seal matrix of copper alloy from the mid-16th century (?) was excavated in Hørning Church in the 1960s, National Museum of Denmark, D334/1960.
17 Diederich 2002: Abb. 6–7.
18 Search of smb.museum-digital.de (10.10.2024).
19 Quoted via Diederich 2012: 242.
20 Radohs 2023; Radohs 2025.
21 Meyer et al. 2013.
22 Diederich 2012: 242.
23 Search in the online databases of the French image database (https://art.rmngp.fr), the Portable Antiquities Scheme (https://finds.org.uk/), the British Museum catalogue (https://www.britishmuseum.org/collection), and many others. In addition to silver, some copper seal stamps have been recorded (such as NMS-DE4EB2: a medieval seal matrix, possibly a continental object. https://finds.org.uk/database/artefacts/record/id/188248, last accessed 10.11.2024), as well as a few in gold, although the latter dates from the late 16th century (Byard & Cheesman 2017). There is also another interesting example of the remaking of the hinge – in Zeeland (the Low Countries), the original attachment of the 15th-century copper alloy matrix was replaced with the one made of French (?) jetton (Hendrikse 2003: cat. 28).
24 Norwich Castle Museum, accession number NWHCM: 1905.34. https://www.museumscollections.norfolk.gov.uk/collections-object-page?id=NWHCM : 1905.34 (last accessed 19.11.2024).
25 Stavenhagen 1937: 907ff.
26 Stavenhagen 1937: 909.
27 Von der Ropp 2005: 33; HCL: comm. 1 on page 33 and comm 3 on page 39.
28 HCL: XVIII, 8.
29 Arbusow 1913: 175; Maasing *et al.* 2024: 33. It seems that Johannes, too, amplified his familial background by borrowing the design of the chevron (the upper one with foxes) from the coat of arms of the Buxhoeveden lineage (Maasing *et al.* 2024: 34).
30 Ropp 2005.
31 LGU I: no. 97.
32 LGU I: no. 128.
33 Arbusow 1913: 174–5; Lukas 1998: 222, no. 108.
34 Nicolaus was a vassal of the Archbishop of Riga, and in mid-February 1419, he took part in a wider meeting of Livonian territorial lords in Valga. Among the other guests was also the aforementioned provost Frederik van der Rope from Tartu. See AR I, 3: no. 239.
35 LUB 9: no. 881. The dispute with the prince-bishop continued, and on 3 June 1443, Frederik wrote to Tallinn town council, asking for a security guarantee for six weeks against the prince-bishop and the Tartu cathedral chapter during his trips to the imperial court (LUB 9: no. 968).
36 AR I, 4: no. 492 (footnote 1) and no. 507 (incl. footnote 2 on p. 472 and footnote 1 on p. 473), LUB 10: XXXVII and no. 126.

37 LUB 10: no. 248. Frederik received an extension to travel freely between Livonia and Prussia until Christmas 1446 (LUB 10: no. 253). Another extension for one year was signed by the Grand Master on 7 June 1447 (LUB 10: no. 344).
38 AR I, 5: no. 564; LUB 11: no. 335.
39 AR I, 6: nos 574, 579, 580.
40 It is difficult to confirm whether the messenger 'Rope' mentioned in the letter of 30 May 1466 between the Order in Livonia and Prussia (LUB 12: no. 397) was 'our' Frederik or another member of the van der Rope family.
41 Russow & Jaago 2023: 33–4.
42 Stavenhagen 1937: 911.
43 LGU II: p. 911.
44 From the find place about 500 metres to the north lies the site of the former Wichmannshof manor, yet this was established only in the 18th century (KNR: Laatsi). On the map of 1683 (see Fig. 7) it is a field without any indication of its aristocratic background.
45 AR I, 5: no. 567; AR I, 6: no. 607.
46 Brotze 2005: 292; Mellin 1798: map III.
47 97.48% silver, 1.12% copper, 0.15% gold, 0.12% rhodium, etc. The XRF analysis was carried out by Ragnar Saage (University of Tartu).
48 See, for example, 'typical' medieval bezants in a later peasant hoard: Russow 2022, fig. 6.
49 Russow 2021.
50 Seeberg-Elverfeldt 1975: will no. 106; Mänd 2005: 185–7 and discussion in Russow 2021.

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NWHCM = Norwich Castle Museum, accession number.

TLM = Tallinn City Museum, accession number.

VRVM = Museum of the History of Riga and Navigation, accession number.

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Eljas Oksanen, Tarja Knuutinen,
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ENGAGING WITH ARCHAEOLOGICAL CITIZEN SCIENTISTS

ABSTRACT

Archaeological citizen science has become a popular phenomenon in Finland over the past ten years. The people who have become involved in it are often, if not always, avocational metal-detectorists. While citizen scientists engaged in responsible metal-detecting produce important archaeological information on their own, many have also been interested in more opportunities to participate in professional archaeological research. In this paper, we discuss our experiences in fieldwork collaborations with archaeological citizen scientists from different parts of southern Finland. We examine productive ways of engaging with the public, and suggest adopting participatory cultural heritage methods that steer away from top-down projects exclusively controlled by the professionals. Our recommendation is to build more horizontal partnerships that enhance the quality of the outcomes through being responsive to the needs and expertise of all participants.

INTRODUCTION

In September 2015, the European Citizen Science Association published 'Ten Principles of Citizen Science'[1]. Listed below, the goal of these principles was to maintain the flexibility necessary to be applicable to a diverse range of projects, while at the same time to establish good practice across citizen science endeavours:

1. Citizen science projects actively involve citizens in scientific endeavour that generates new knowledge or understanding. Citizens may act as contributors, collaborators, or as project leader and have a meaningful role in the project.
2. Citizen science projects have a genuine science outcome.
3. Both the professional scientists and the citizen scientists benefit from taking part.
4. Citizen scientists may, if they wish, participate in multiple stages of the scientific process.
5. Citizen scientists receive feedback from the project.
6. Citizen science is considered a research approach like any other, with limitations and biases that should be considered and controlled for.

7. Citizen science project data and meta-data are made publicly available and where possible, results are published in an open access format.
8. Citizen scientists are acknowledged in project results and publications.
9. Citizen science programmes are evaluated for their scientific output, data quality, participant experience and wider societal or policy impact.
10. The leaders of citizen science projects take into consideration legal and ethical issues surrounding copyright, intellectual property, data sharing agreements, confidentiality, attribution, and the environmental impact of any activities. (ECSA 2015)

It is clear that many of these principles can already be easily identified in archaeological citizen science in Finland. This includes the careful consideration of legal and ethical parameters for archaeological research (Principle 10), and the realisation of genuine science outcomes (Principle 2). But other areas, such as the routine inclusion of citizen scientists in project results and publications (Principle 8) and the evaluation of the projects for their wider societal impacts (Principle 9), vary more depending on the type of research being carried out, and can still be improved upon.

In the following case studies, we explore further, how archaeological citizen science is taking shape across diverse regions, types of archaeological heritage, and citizen science communities.

CASE STUDY: Junkarsborg Castle site

Junkarsborg is a small medieval fortification located on the north-eastern part of Karjaa. The fortification was in use for a relatively short period of time from the mid-14th to early 15th century. Junkarsborg is located on a small island on the Mustionjoki river running from Lake Lohjanjärvi to the Gulf of Finland. Following its location, the fortification is thought to have been built as a control point for the traffic between the coastal zone of the Western Uusimaa region and the inland lake area. The site has been archaeologically excavated in the 1890s, 1930s and 1950s. In addition, the site and its surroundings was surveyed on several occasions after 1990.[2] Unfortunately, the results of the most extensive excavations in the 1950s have not been reported or published, and the overall picture of the fortification and its history is unclear.[3]

In 2023, Junkarsborg site was subjected to a field survey conducted by Tarja Knuutinen and Frida Ehrnsten under the University of Helsinki research project *The Europeanization of Finland and Karelian Isthmus AD 1100–1600*, funded by the Research Council of Finland.[4] In addition, Professor Georg Haggrén took part on the fieldwork on one day. The survey included precision terrain survey of the structures visible to ground surface, complemented with a small scale GPR survey and a metal-detector survey of the main castle and the bailey area. The aim was to gather new information on the defensive elements of the castle site and to find out if the metal-detector survey could bring forward new information about the use of different parts of the castle area. In addition, it was hoped that the metal-detector survey could reveal some new information about the extent of the previous excavations, as it is unclear if all the cultural layers inside the main castle were removed during the excavations in the 1950s.

The metal-detector survey of the site was planned with and conducted by three avocational metal-detectorists. Although the castle site was not an ideal subject for a metal-detector survey due to dense vegetation and height differences of the terrain, the survey clearly proved to be worthwhile. Involving experienced detectorists to plan and conduct the survey helped to overcome the somewhat difficult circumstances on site.

FIGURE 1. Georg Haggrén, Elina Terävä and Tuuli Heinonen in Junkarsborg in 2008. The current studies of Junkarsborg are largely a result of Georg's encouragement and interest in the development of the medieval Western Uusimaa region. Photo: Tarja Knuutinen.

The survey was conducted in a non-invasive manner, i.e., the possible find locations were not excavated but the detectorists marked the signal locations in the terrain and the archaeologists mapped the marks with high precision GPS. The signals were roughly grouped in two categories – 'iron' and 'other' – and marked accordingly with different colours. The non-invasive approach described above has its limitations, of course, as the dating of the objects causing the signals and their connection to the archaeological site remains unverified. However, the survey resulted in some new information that, together with the results of the terrain and GPR surveys, can be used for planning future on-site research.

A significant difference in the number of signals was detected between the main castle and the bailey area, but also between different parts of the main castle. The total number of signals in the main castle was considerably larger than the total number of the signals in the bailey area. This is an interesting result regarding future research, as the bailey area has not been previously excavated, and therefore the distribution of signals likely correlates with the activity and use of certain areas in the bailey. However, the high number of signals in large parts of the main castle area suggests that the cultural layers have been only partially removed in many parts of the castle yard. In addition, clear differences were detected on the composition of signals classified as 'iron' or 'other' between the areas in the main castle known to have been previously excavated and the areas that (according to the available information) have not been previously excavated. Furthermore, two previously unnoticed potential medieval activity areas were detected at the site.[5]

CASE STUDY: Lepinjärvi

The area around the Lake Lepinjärvi in Karjaa contains several prehistoric sites, mostly from the Finnish Iron Age (500 BC–AD 1200). Lepinjärvi and its surrounding sites are located in southern Finland only some half-a-dozen kilometres north of the medieval regional centre at Raseborg Castle, and some thirteen kilometres south of the Junkarsborg fortification (see above). The broader region is archaeologically rich and possesses very considerable research potential.[6]

In 2020, the project *Looking Beneath the Surface* (Satu Koivisto and Wesa Perttola, funded by the COST Action SAGA and the University of Helsinki Future Fund) conducted a ground penetrating radar survey of fields to the north of the lake, revealing several interesting subsurface anomalies.[7] Further fieldwork was delayed by the COVID-19 pandemic, but it was decided to conduct test pit excavations targeting a selection of the anomalies in August 2023. Funding was acquired by Eljas Oksanen and Anna Wessman to conduct a parallel field investigation in collaboration with avocational metal-detectorists. Taking after other detecting-assisted fieldwork research in, for example, Finland[8] and the United Kingdom[9], the aim of the metal-detecting survey was to study the complementarity of the two methods, for example investigating whether objects recovered from the disturbed ploughzone layer could be linked to deeper underground features.

Three local detectorists were contacted through the advice and assistance of the local provincial archaeologist at Västra Nylands museum, the provincial museum of Western Uusimaa. The detectorists were highly motivated about the proposed project and also very open to discussing their broader archaeological activities in the locality. The project design was collaborative, with the professionals setting the frame and context for the activity (providing maps of the area covered by ground penetrating radar). The detectorists were given free hand to handle how they investigated the area.

The initial plan had been to keep to a fairly regular pattern, with the detectorists detecting across the field in rows and then also moving across it crosswise. However, it was quickly realised that this was suboptimal due the adversarial conditions to detecting that prevailed during the fieldwork day. The preceding summer had been exceptionally hot, leaving the clay ground very hard. The fields had been sown with cumin plants, cut recently at harvesting but leaving high stems. Extensive and rapid movement of the detector close to the ground was therefore not possible.

After an initial survey of the field was conducted, it was decided to concentrate specifically on the locations of the eleven planned test pits (marking the most interesting subsurface anomalies) as opposed to covering the entire study area. The detectorists examined their immediate surroundings with considerable care over 1.5 hours. Twenty-two stray finds were found, and their precise GPS coordinate locations recorded. The finds consisted of iron objects, chiefly undated iron nails, and one small ceramics piece. The majority were found immediately around the largest and prospectively most interesting underground anomaly – a round structure some 4–5 m in diameter – as determined by Perttola. This location is at the edge of an interestingly shaped uncultivated area in the middle of the fields, as seen on maps dating to 1702 and 1767[10]. Later test pitting showed that the anomaly consisted of stones 5–50 cm in diameter that started some 35 cm below the surface. The detectorists (and Oksanen and Wessman) did not know of the particular interest in this anomaly until the signals had been found, decreasing selection bias. The finds scatter may offer support for the notion that a structure of some kind may have once been at that location, even though it is not possible to confidently establish a relationship between the apparent concentration of ploughzone finds and the undated underground anomaly.

In terms of archaeological objects securely datable to the Iron Age (the period of the nearby protected sites), however, nothing was found. Contextual information on the current state of the nearby archaeological landscape was informed by the detectorists' local knowledge, as they had detected on these fields already in the mid-2010s with permission from the former Raseborg Museum director Dan Lindholm.[11] At this time, not much was found either and all objects had been placed back in the ground (only marking the findspots). The detectorists considered this lack of ploughzone finds to be a likely sign that the fields had previously been under heavy detection from other detectorists, who had failed to report any archaeological finds in accordance with the Antiquities Act (295/1963 §16).

During the fieldwork the detectorist identified several recent unfilled pits on the field, which suggests illegal metal-detecting (looting) during that summer. From these pits the detectorists identified the path the presumed nighthawk had taken across the fields, pointing the way towards the nearby Stora Näset site[12], a protected cremation cemetery. The site was examined, and several unfilled pits of a similar small size and shape (due to the hard clay soil) as had been found on the field were discovered, a clear sign of looting. The provincial archaeologist at the Västra Nylands museum was notified to assist the officials in monitoring heritage crime-related activity in the region. It was concluded that the ploughzone within the project's study area is now probably quite findless, with the most 'interesting' (to 'nighthawk' detectorists operating illegally) and easy-to-find objects having been looted, resulting in a permanent loss of archaeological knowledge.

The outcomes therefore included a) testing a multi-method fieldwork approach with a citizen science component; b) investigating potential relationships between archaeology near and well below the surface; c) establishing the relative poverty (in terms of non-ferrous object finds) of the study area; and d) assisting in identifying and reporting unregulated and illegal metal-detecting. Following the fieldwork the project coordinators and the detectorists gathered for an informal feedback exchange on the day's events, as well as a discussion of the detectorists' experiences as avocational detectorists and hobby archaeologists with a deep-seated sense of local identity.

CASE STUDY: FindSampo UX project in Porvoo

Funded by the Academy of Finland, the FindSampo project had the goal of increasing the impact of citizen science within archaeological research and heritage management in Finland.[13] In addition to the digital innovations documented elsewhere[14], the project also prioritised the study of user experience (UX) itself, not only to inform the final digital tools and demonstrators of FindSampo, but also to shed new light on the ways in which diverse user groups such as metal-detectorists, archaeological curators, academic researchers and the wider public wish to engage with archaeological heritage. This was conducted through interviews, focus group meetings and an online questionnaire survey.[15]

An important innovation of FindSampo was the demonstration of the potential of a mobile based app for streamlining and improving the accuracy of in-the-field finds recording for Finnish metal-detectorists.[16] In order to test the prototype of the app and to observe its use in the field, an UX test took place near Porvoo in September 2019. The chosen day was purposefully on a Saturday in order to accommodate the avocational metal-detectorists. There was a call for volunteers on social media beforehand, which had attracted a lot of positive attention from detectorists. However, there was only room for a limited number of volunteers, and unfortunately there were a lot more people interested than could be included. The three detectorists that attended the UX test were the first ones to respond. They had previously taken part in a questionnaire survey regarding their wishes for the future portal, at the starting phase of the project, so they were familiar with our aims. Moreover, the researchers in the project had already established contact with most of them.

Researchers from the University of Helsinki and Aalto University also took part in the testing phase, and impressions of the recording process, including challenges encountered, were documented through audio recordings, observation notes, and photographs. A short description of the day that also acknowledged the detectorists for their input was later posted in Finnish and English on the project's blog page. At the end of the day, all participants were asked to fill in a short questionnaire and give their impressions of application usability and of their experiences. A debrief was held over

coffee and sandwiches afterwards to discuss the outcomes of the day. For the project team this was an effective and positive way to obtain rapid feedback for the prototype app.

CONCLUSION

With reference to these projects and the 'Ten Principles of Citizen Science' (ECSA 2015), we can now pinpoint some successes as well as highlight directions for further development.

The detectorists that took part in the fieldwork in Porvoo and at Lepinjärvi, as well as at Junkarsborg, were involved as both contributors and collaborators (Principle 1). In Porvoo they contributed new user experience data about the FindSampo app, with concrete and direct feedback and development ideas. At Lepinjärvi, the avocational detectorists proved that the site had indeed been emptied of (most types of) archaeological metal ploughzone finds, something that has been discussed in archaeology before but rarely, and never in Finland, actually documented on this scale. At Junkarsborg, the expertise of the detectorists made it possible to gain invaluable information regarding the potential medieval activity areas of the site, but also complemented the deficient knowledge of the extent of previous, unreported archaeological excavations. The full potential of the information gained through the metal-detector survey will be explored in the future, as the study of the site continues.

The fieldwork days were part of scientific projects that include research publications as outcomes (Principle 2). From the feedback we received from the fieldwork debriefing sessions (Principle 9) it became clear that the detectorists were also content with the outcomes of these field days (and most wanted to be involved with more fieldwork!). In the Porvoo case, the detectorists became friends and have since then detected together (Principle 3).

Acknowledging the participants taking part in citizen science projects (Principle 8) is a natural part of our ethical practices, although there is variation in terms of whether individuals were named or groups collectively acknowledged. The above projects were all developed with reference to the accepted scientific standards and professional practices for fieldwork (Principles 6 and 10). We strive to be in contact with our participants also after the fieldwork, and offer to send them free copies or direct digital links to our scientific outputs (Principles 5 and 7).

Despite the clear advantages of conducting archaeological citizen science projects in Finland, the scale of these initiatives is still small and connected only to a limited number of individuals (whether professional researchers, avocational detectorists, or other citizen scientists or hobbyists). They often depend on personal contacts and connections. The wider societal and legal impact potential of such projects has still not been fully evaluated, mostly because most projects involving archaeological citizen science have been small and typically lack funds to secure a sustainable continuation. This has also limited opportunities for citizen scientists to participate in multiple stages of the scientific process (Principle 4), and importantly means that we have not yet reached a level where archaeological citizen science initiatives akin to those discussed would make a wider societal or policy impact, as according to Principle 9.

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Eljas Oksanen was awarded a PhD in History by the University of Cambridge in 2007 and the degree of Adjunct Professor (Dosentti) in Archaeology by the University of Helsinki in 2024. An important theme in his research has involved the interdisciplinary study of medieval archaeological landscapes and settlement patterns, and it is through this that Eljas has had the pleasure and privilege of meeting Georg and becoming acquainted with his work.

Tarja Knuutinen is an archaeologist currently working as a doctoral researcher in the University of Helsinki. I got to know Georg first in the early 2000s as a teacher of historical archaeology in Helsinki. Since 2006 I have had the opportunity to work on several research projects led by him, such as the excavation projects of the Raseborg Castle and the medieval village of Mankby. During the past 20 years, Georg has become a dear colleague and a friend, whose vast knowledge, and all the support and encouragement he has offered over the years, I greatly appreciate.

Suzie Thomas (PhD, Newcastle University) worked at the University of Helsinki in various research and teaching roles connected to Cultural Heritage Studies and Museology from 2014 until 2021. Georg Haggren was one of the first colleagues that she met in Finland, already during a visit to Helsinki in 2013 when she worked at the University of Glasgow. Suzie remembers the friendly supportive presence of Georg, and continues to be delighted to call him both a colleague and a friend. Since September 2021 she has been a Professor of Heritage Studies at the University of Antwerp.

Anna Wessman works as a Professor in Iron Age Archaeology at the University Museum of Bergen, Norway. Her interests are the Scandinavian Viking Age, metal detecting, and public participation. Anna met Georg at a party in the early 1990s. He was the only one there who took her childhood dream of becoming an archaeologist seriously. She still remembers their discussion with great warmth.

NOTES

1 ECSA 2015.
2 Hackman 1891–1892; Kalmari 2011–2012a; 2011–2012b; Seppälä 1996: 177–178; Suha 2022; Voionmaa 1937; 1977.
3 On the previous research of the site, see e.g. Suhonen 2002.
4 More on the four-year (2022–26) research project led by Professor Mika Lavento, see Lavento & Haggrén 2023.
5 Knuutinen 2024.
6 E.g., af Hällström 1948; Maaranen 2023; Vanhanen & Koivisto 2015.
7 Perttola & Koivisto forthcoming.
8 Knuutinen et al. 2022; Wessman et al. 2016.
9 Ferguson 2013; Scull et al. 2024; Thomas 2012.
10 NAF, MHA U B16:33/1, Läpp: Karta öfver åker och äng med beskrifning (1702–1702); NAF, MHA U B16:33/3, Läpp: Karta öfver egorne med delningsbeskrifning (1767–1767).
11 Before 2020, the name of the Västra Nylands museum was Raseborgs museum.
12 Muinaisjäännösrekisteri ID 220010023.
13 Wessman et al. 2019a.

14 E.g., Hyvönen et al. 2021.
15 Wessman et al. 2019b.
16 Hassanzadeh 2019.

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Abbreviations

ECSA = European Citizen Science Association

NAF = National Archives of Finland

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► Visiting teaching excavations in Lieto. From left, Georg, Janne Harjula, Sonja Hukantaival and Juha Ruohonen. Photo: Anne-Mari Liira 2022.

► Georg celebrating the publication of the book on Raseborg Castle. Visible on the screen Tuuli Heinonen (left), Riikka Tevali and Frida Ehrnsten. Photo: Anne-Mari Liira 2024.

▼ Georg opening the 2024 fieldwork season of the Department of Archaeology at the University of Turku. Photo: Anne-Mari Liira.

◄ End of the 2012 field season in Mankby. Georg with the team: Anna-Maria Salonen (left), Maija Holappa, Ulrika Rosendahl, and Elina Terävä, along with the excavation dog Whiskey (left) and visiting dog Selma. Photo: Maija Holappa.

◄ Georg enjoying the scenery in Vyborg. Photo: Elina Terävä 2018.