KOGESTENSGRUBER REVISITED – EVALUERING OG STRATEGI

På Strategisk Forums Årsmøde i november 2022, hvor repræsentanter fra næsten alle udgravende museer i Danmark deltog, var der en udbredt tilslutning til at definere nogle koordinerede indsatser museerne imellem, så vi kan løfte i flok og generere mere viden, end det enkelte museum kan magte alene. Formålet er at styrke brugen og afkastet af de nationale og lokale arkæologiske strategier, der knytter sig til den bygherrefinansierede arkæologi i Danmark.

Vi vil gerne tage bolden op med en fokusdag på kogestensgruber, som flere museer landet over arbejder med. Formålet med dagen er dels at præsentere nogle resultater fra større projekter, dels at få et overblik over, hvordan der arbejdes med fænomenet kogestensgruber landet over. En væsentlig del af dagen skal desuden evaluere på udbyttet og formulere en fælles strategi for kogestensgruberne, som vi kan arbejde videre med de næste fem år.

Om formiddagen har vi inviteret kolleger fra Danmark og Nordtyskland, der vil fortælle om, hvordan de har arbejdet med aspekter af kogestensgruber i forskellige projekter og med forskellige naturvidenskabelige tilgange.

Om eftermiddagen har vi oplæg fra kolleger fra forskellige steder i landet med samme fokus, dog mere knyttet op på enkelte lokaliteter. Foredragene holdes på engelsk. Sidst på eftermiddagen håber vi på en fælles diskussion, der kan munde ud i en fælles strategi.

Tilmelding til Pernille (pekr@msj.dk) senest 1. juni – tilmeldingen er først gældende, når deltagergebyret er modtaget.

Mødet finder sted den 14. juni på Museum Sønderjylland – Arkæologi, Dalgade 7, 6100 Haderslev, fra kl. 9.30 – 16.30.

Inkluderet i deltagergebyret på 275 kr. er kaffe/morgenbrød, frokost og eftermiddagskaffe/kage. Deltagergebyret skal betales senest d. 1. juni på følgende konto med angivelse af navn og museum: Reg.nr. 4394, konto nr. 12595190

IBAN DK 03 3000 0012 595190, Swift DABADKKK

Malene R. Beck, Østfyns Museer
mrb@ostfynsmuseer.dk

Lilian Matthes, Museum Sønderjylland
lima@msj.dk

Pernille Kruse, Museum Sønderjylland
pekr@msj.dk

Vi glæder os til en spændende og udbytterig dag!

ØSTFYNS MUSEER
LANDSKAB & ARKÆOLOGI

MUSEUM SØNDER JYLLAND

KOGESTENSGRUBER REVISITED – EVALUERING OG STRATEGI

09.30-10.00 Ankomst, kaffe

10.00-10.15 Velkomst, intro v. Malene/Lilian/Pernille

10.15-10.35 **Jannie Koster Larsen/Karen Salvig: Charcoal from prehistoric Cooking Pits**

Charcoal often represents the only tangible, organic remains in prehistoric cooking pits and is one of few sources to enlighten cooking pit activities. In recent years renewed interest in aligned rows and clusters of cooking pits has led to a steep incline in analyzed charcoal and a growing data set. This has driven a reevaluation of sampling and analytical methods, approaches to interpreting the data produced including the theoretical foundations, and what practical results can emerge from the analyses.

Charcoal from cooking pits represent fuel used to heat the stones and research questions have particularly focused on identifying tree species, the quality of fuel, the availability and selection of resources and the possibility of the fuel reflecting ritual practices. However, this approach is challenged by lack of comparative data from pollen analysis and charcoal from other contexts, e.g. structures in habitation areas.

By examining local and regional differences in tree species and dimensions of the charred wood, the practice related to cooking pits seems shaped by local resources and landscape. Insufficient data (in part because of a lack of sampling and dating) remains a significant barrier to fully realizing the potential for studying carbonized traces of a prehistoric practice.

10.40-11.00 **J. Kneisel/D. Küster/A. Preising: Cooking pits – a variety in shape and form**

New magnetic investigations show that cooking pits are well recognisable in the magnetic image, despite the background noise of glacial sediments. The investigations of recent years at Kiel University show a wide range of different types. The article deals with the different types, their chronology and chorology, orientation and location in the landscape.

11.05-11.25 **Stefanie Schäfer-Di Maida/Tina Wunderlich: Pits, Cooking Pits, og Slag Pits after all?**

Awareness of and interest in cooking stone pits has increased in recent years. Their detection in the magnetic image is favoured in particular by the characteristic arrangements of cooking stone pits (circular arrangements, rows, unregulatedarrangements). However, it is not uncommon to find other features that just look like cooking stone pits on the magnetic image, but are not: Slag pits of the pre-Roman Iron Age, for example, look confusingly similar to cooking stone pits in the magnetic image. However, they can be distinguished in terms of different spatial arrangements and by evaluating the strength of magnetic anomalies. Furthermore, there are first approaches of geophysical modelling of anomalies trying to determine the size of the cooking stone pits. Thus, with this contribution we would like to propose new guidelines for their identification.

11.30-11.50 **Bo Jensen: Alpegård near Smørum**

Alpegård (TAK 1597) was excavated in 2020 and 2021. Out of 3500 excavated features, 920 were cooking stone pits. We collected data on these using a standardized format. After the excavation, we analysed the data using a variety of simple statistical approaches, to select a representative range of features for radiocarbon dating. All this was done using freeware (R studio, Gephi, MapInfo 8.5 and GIMP 2). Results are still preliminary, with more radiocarbon dates pending.

Variables describing the size and shape of the pit show strong correlation with each other; variables describing the stones show strong correlation with each other; but variables describing the pit do not show strong

correlations with those describing the stones, nor *vice versa*. Within the site, there is some weak zoning in terms of shape/size, but not in terms of stone use.

Radiocarbon dates range from Nordic Bronze Age period III to the end of the Roman Iron Age. Dates show strong correlations with spatial distributions but only weak correlations with shape and size. Small, round pits are early, large oval pits late, but there is significant overlap.

Macrofossil analysis suggests that at least three pits may have been used for brewing, with finds of carbonised wheat and berries of whitethorn. These pits are big and very poor in stones.

Systematic data collection has proven worthwhile, but the methodology will benefit from further refinement.

11.55-12.15 **Martin Mortensen/Peter Steen Henriksen: Naturvidenskabelige analyser af kogestensgruber**

Ildskørnede sten i kogestensgruber er en uhyre almindelig fundgruppe ved arkæologiske udgravninger, men hvordan stenene helt præcis har været brugt, er endnu ikke bevist. Naturvidenskabelige analyser kan måske belyse i hvert fald sider af anvendelsen af kogesten.

På nogen kogesten kan man finde forkullet materiale fastbrændt på overfladen, der stammer fra de opvarmede stens kontakt med organisk materiale. Analyser af forkullet materiale på brudfladerne på ildskørnede sten fra en større grube udgravet på Dalby Hals ved Reersø blev undersøgt med mikrokemiske spottests, polarisationsmikroskopi, infrarød spektroskopi (FT-IR) og GC-MS (gaschromatografi-massespektrometri). Analyserne viste spor af protein, palmitin- og stearinsyre samt stivelseskorn. Sidstnævnte ville stemme overens med en fortolkning hvor de varme sten har været brugt til at opvarme vand med formalet korn i som f.eks. under mæskning ved ølbrygning.

I et andet sæt af eksperimenter blev lipidanalyser udført med GC-MS på 8 ildskørnede sten fra Spindelvej (Museum Sønderjylland) og Boeslunde (Museum Vestsjælland) med det formål at få information om stenenes oprindelige brug hvis fedt har været en del heraf, samt at udvikle en protokol for prøvetagning og præparation til lipid analyse på ildskørnede sten. Under dette arbejde blev det klart at analysen af naturlige referencer, dvs. prøver af jord fra det område hvor stenene blev udgravet, er afgørende for målingernes anvendelighed. Der viste sig nemlig at være fedtsyrer på alle ildskørnede sten og alle naturlige referencer i varierende omfang, man kan således ikke umiddelbart fortolke disse fedtsyrer som bevis på fedtkontakt under oprindelig brug, selv hvis det var tilfældet. Implikationerne af disse erkendelser og de principielle muligheder, ideer og krav til alternative analyser på ildskørnede sten diskuteres.

12.20-13.00 Frokost

13.05-13.15 **Lilian Matthes/Pernille Kruse: The Research Project Egelund III near Aabenraa and its consequences**

During the period 2012-2015, Museum Sønderjylland – Arkæologi carried out a research project focusing on a large concentration of cooking pits and the phenomenon of Bronze Age gathering places. The results will be presented briefly, and we will line out the way in which Museum Sønderjylland has employed these results in developer funded archaeology.

13.15-13.25 **Michael Borre Lundø/Jakob Bonde: Kogegruber og -felter i tid og rum**

Med baggrund i et tiltagende fokus på kogegruber og kogegrubefelter i Museum Odenses ansvarsområde arbejdes der i øjeblikket på at udfærdige en formaliseret erfaringsbaseret strategi for udgravning og

registrering af den fynske kogegrubehorisont. Det vurderes, at der her ligger et uudnyttet potentiale, der blandt andet omfatter følgende problemstillinger:

1. Kogegruber og -felters datering og tidsmæssige udvikling.
2. Kogegrubernes placering i landskabet (herunder relation til samtidige depotfund)
3. Kogegrubefelter (små/store). Mulig udfordring af begrebet samlingsplads.
4. Vurdering af fremtidige strategier/muligheder ved kommende udgravninger (funktion, brændsel, genbrugte anlæg, morfologi mm).

I foredraget fremlægges status og erfaringer samt overvejelser omkring fremtidig strategi.

13.25-13.35 **Lars Grundvad: Cooking pits from Stavsager Høj, Fæsted: four variations – four periods**

Since 2018, Museet Sønderskov has carried out investigations at the site of Stavsager Høj, Fæsted in Southern Jutland. The site is best known for its numerous Iron Age metal votive offerings that included elements of a ceremonial Dejbjerg wagon, deposits of iron weapons and gold artefacts as well as numerous other metal finds that were related to multiple temple-like constructions. A lesser-known aspect of the site are the many cooking pits that have also been uncovered. This presentation seeks to shed light on this aspect of Stavsager Høj with the aim of showing the variations of cooking pits and how they are related to the site's changing function through different times as seen in the artefacts and AMS-datings. In this respect, these features can testify a great deal about the changing significance of Stavsager Høj from the Bronze Age through to the Early Germanic Iron Age.

13.35-13.45 Spørgsmål/Diskussion

13.45-13.55 **Karen Povlsen: Cooking Pits below drift Sand in Northern Jutland**

In the spring of 2023, The Historical Museum of Northern Jutland will be excavating a cooking pit cluster, which has been sealed by drift sand. The cooking pits were discovered during an excavation of iron age fields which had been established on top of the layer of driftsand. The cooking pits are situated on both sides of a small hollow, running east-west. To the north the terrain is hilly and contains many burial mounds, the nearest one c. 150 m. north of the excavation. To the south the terrain gradually descends towards the low areas by the Limfjord (around 2 km away in the late bronze age /early iron age).
At the time of writing the extent of the cooking pit cluster within the excavation area has been established through test trenching. During the excavation of the cooking pit cluster special attention will be paid to the surface near parts of the pits and the areas arounds the pits. The aim with this strategy is to gain new insight into the activities at the cooking pit clusters.

13.55-14.05 **Silke Eisenschmidt: Cooking pits in rows with a contemporary settlement from the Late Bronze Age at Bastrup**

In connection with a housing development at Vamdrup in Kolding municipality, Museum Sønderjylland had the opportunity in 2011 to excavate a total area of approx. 1 ha divided into three fields. In the eastern field there were 77 large, oval-rectangular pits with and without fire-cracked stones, which lay systematically in three east-west rows towards a stream. Older than the cooking pits were two long rows of stout posts. Five Ams 14C dates the cooking pits to the 9th cent. BC. In addition, it was possible to analyse the charcoal from the selected cooking pits. About 150 metres west of the cooking pit rows, different types of Bronze Age longhouses were found, the youngest of which is contemporary with the cooking pits. Early pre-Roman Iron Age urn graves, which was only identified in the preliminary survey, 150 metres west of the settlement, suggests younger activities in the area.

KOGESTENSGRUBER REVISITED – EVALUERING OG STRATEGI

The excavation results and the scientific analyses will be presented and put into perspective with the other known Bronze Age finds for which the Vamdrup area is known.

14.05-14.15 **Malene R. Bech: The cooking pit systems at Rønninge Søgård and Mariesminde – Organized vs chaos?**

In 2020 Østfyns Museer had the opportunity to excavate a small part of the cooking pit system at Rønninge Søgård. Even though Rønninge Søgård is a locus classicus and among the largest cooking pit systems in Scandinavia we know very little about the spatial and chronological development of the site. The well-organized rows of cooking pits could indicate a short-lived and intensive use period. The excavation in 2020 therefore had a special focus on the chronological and spatial development of the system including morphological differences and differences in the contents of the pits.

In 2022-23 another cooking pit system at Mariesminde only 3 km west of Rønninge Søgård has been excavated. The cooking pits encircle a natural hill in an otherwise flat landscape and several bronze age depositions are known from the wetland areas close by. The number of cooking pits resembles that of Rønninge Søgård but there is no evident system in the arrangement of the pits and the overall picture is "chaotic". 14C dates from an earlier excavation campaign indicate, that the cooking pit system at Mariesminde was in use at the same time as Rønninge Søgård but there is also evidence of use prior to and after the activities at Rønninge Søgård had ended.

The closely set but very different looking large cooking pit systems raises several questions regarding among other things chronology, spatial development, function, purpose/meaning, resource needs and utilization as well as the topographical settings.

14.15-14.25 Spørgsmål/Diskussion

14.30-14.40 **Tim Grønnegård: Vedbestemmelse af kogestensgruber**

Museum Nordsjælland har gennem en årrække udvalgt en håndfuld lokaliteter med markante klynger af kogestensgruber og foretaget vedbestemmelser af disse, for at se, om man ad den vej kunne indkredse deres funktion og om der tegnede sig nogen tendenser i valget af træsorter. Metoden er også brugt på pladser med anlæggelse af kogestensgruber gennem en længere periode.

14.50-15.00 **Lehne Mailund Christensen: A needle in a Haystack**

Artifacts found in cooking pits are few and far between, but several sites on eastern Zealand, which have been excavated in the last decade, have yielded some noteworthy finds.

The different types of finds seem to range from intentionally deposited artifact, to waste materials or tools presumably left as part of the actual use of the pits.

15.00-15.30 Spørgsmål/Diskussion og Kaffe

15.30-16.30 Evaluering og formulering af fælles kogestensgrubestrategi