

Collection Report: Rotary Querns in the Museum of Archaeology University of Stavanger



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with contributions by
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Project Millstone - The Norwegian Millstone Landscape

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Forsidebilde / Cover illustration: Rotary querns from Rogaland deposited in the Museum of Archaeology, University of Stavanger (AM) superimposed with Longhouse 3 of the settlement of Ullandhaug.

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Preface

The present study is a part of the multidisciplinary, international research project "The Norwegian Millstone Landscape" initiated and led by Gurli B. Meyer, Tom Heldal and Tor Grenne of the Norwegian Geological Survey (NGU). The aim of the project is to cast new light on the millstone landscape in/of Norway, and to map the final destination(s) of the querns after they left the quarries.

The official name of the project is "The Norwegian Millstone Landscape", in Norwegian "*Kvernsteinlandskap i Norge*". The Millstone project is funded by the Norwegian Research Council (NFR 189986/S30) and the Norwegian Geological Survey (NGU 329900). The project is coordinated by the NGU and includes the partners as listed below. The project reports are available in digital form as a NGU report at the website www.ngu.no. Each report has been peer reviewed by one external and one internal expert.

Coordinator

Gurli B. Meyer, the Norwegian Geological Survey, NGU.

Partners

Vitenskapsmuseet, Seksjon for arkeologi og kulturhistorie, Norges teknisk-naturvitenskapelige universitet (NTNU)

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We would also like to recognise the following people:

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Credits

The drawings of the sections of the querns in the catalogue were first carried out manually by Åsa Dahlin Hauken (AM) and then vectorised by Timothy J. Anderson. The photographs of the querns in the catalogue were taken by Terje Tveit (AM). The houseplans were sketched by Åsa Dahlin Hauken and then vectorised by Timothy J. Anderson. The maps (fig. 1-2) are the work of Theo Gil (AM). All other photographs, unless otherwise stated in the caption, are by Terje Tveit (AM). The layout is the work of Timothy J. Anderson and Aurora Pulido following a general design by Gurli B. Meyer.

Sammendrag

Samlingen av 142 forhistoriske dreiekverner og kvernfragment på Arkeologisk museum, Universitetet i Stavanger, er den største i landet. Det store antallet steiner gjør at samlingen er godt egnet for et nærmere studium av forskjellige aspekter som kronologi, typologi, teknologi og råstoffbruk. 85 kvernsteiner fra faglig undersøkte, sikre kontekster, primært gårdsanlegg, ble valgt ut for nærmere analyse. Både over- og underliggere er inndelt i tre hovedtyper og flere undertyper. Typeinndelingen viste seg å ha begrenset kronologisk relevans, siden alle hovedtypene, med unntak for én, forekommer i eldre jernalder og kun en undertype av overliggere også kan dateres til yngre jernalder. Én hovedtype forekommer bare i middelalderen. Studien viser at dreiekvernen ble tatt i bruk i Rogaland i perioden fra slutten av det 2. årh til begynnelsen av det 3. årh. e.Kr. og raskt fortrenget skubbekvernen. Tre måter å montere håndtak på overliggeren er representert i samlingen; vertikalt dreiepinnehull, radiært spor som festepunkt for et horisontalt tverrstykke fra midtaksen til kanten, samt overliggere uten dreiepinnehull, hvor håndtaket har vært festet til steinens kant med en løkke i en rundtløpende reim av organisk materiale. Dette er den vanligste måten å montere håndtak på i jernalder. Segl-merker forekommer ikke på kvernsteinene fra jernalder, bare i middelalder. Radiære furer eller furer i sammensatte mønstre på maleflaten forekommer ikke, maleflatene ble oppskjerpet med prikkhogging. I jernalder er utelukkende løsblokker av lokale bergarter brukt som råmateriale. Gneis og glimmergneis var foretrukne bergarter, men granitt forekommer også. I Rogaland forekommer kvernsteiner av granatglimmerskifer kun i middelalderkontekster, og stein fra både Hyllestad og Saltdal er påvist. De fleste steinene er laget av avrundede løsblokker av passende størrelse, men noen steiner synes å ha flate blokker eller heller som utgangspunkt.

Abstract

The collection of 142 prehistoric rotary querns stones and fragments at the Museum of Archaeology, University of Stavanger (AM) is the largest in the country. More than half of the total (85), from secure chronological contexts, were retained for this detailed study. Due to this large quantity, the assemblage is well suited for the analysis of the typology, chronology, rock types and the methods of manufacture of the earliest types of rotary querns known in Norway. Both upper and lower stones were divided into three main types with several subtypes. The classification proved to be of limited chronological relevance, as all the main types, but for one, occur throughout the Early Iron Age and only one of the upper stones sub-types continues into the Late Iron Age. Furthermore, one of the main types occurs only in the Medieval Period. The present evidence indicates that the rotary quern was introduced in Rogaland in the period late 2nd century – early 3rd century AD and rapidly replaced the saddle quern. Two types of driving mechanisms are identified: the vertical handle socket and the radial slot handle. A third type of driving mechanism is inferred from many stones lacking any visible handle fittings. These were probably driven by a handle mounted on the edge of the stone by means of a loop attached to a tight strap of organic material tightly attached around the girth of the stone. While rynd slots do not occur on any of the Iron Age stones, they are visible on some stones from the Medieval Period. Grinding surfaces were often dressed by pecking with a hammer-stone. Furrows in simple or complex patterns are rare. In the Iron Age only erratic blocks of local rocks were used as raw material. The favoured rock types were gneiss and mica gneiss, and to a certain degree granite. In Rogaland querns of garnet mica schist are limited strictly to Medieval contexts. Stones originating in the quarry districts of both Hyllestad and Saltdal are also identified while the Selbu quarry district is represented by only one handquern devoid of context. Although a majority of the querns were hewn from rounded erratic blocks of suitable size, some were fashioned from what appears to be flat blocks or slabs.

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Photograph of Jan Petersen in 1936 standing on the wall of a building. Jan Petersen, the late director of the Stavanger Museum (the mother institution of the present Museum of Archaeology) was a pioneer in the study of Iron Age and Medieval farmsteads.

1. General Introduction

Despite the vital importance of querns for the survival of past populations, these handmills have received very little attention in Norway. Querns have even been left behind on excavations, not only because they were “uninteresting”, but also because they were heavy and cumbersome. To illustrate the lack of interest in this type of artefact, an example of an entry in the museum catalogue might simply state “one quern stone” without description or measurements. It is therefore no wonder that many querns in museum depositories are either missing or lacking information about their archaeological context.

The principal aim of this publication is therefore to present the prehistoric and Medieval rotary querns of the collection at the Museum of Archaeology, University of Stavanger, (abbreviated AM), Norway. Of the 142 stones or fragments, only 85 querns from secure archaeological excavations were retained for the analysis of form, type and chronology. All of these sites, with one exception, are settlements. Querns from unsecure contexts and stray finds are excluded from this study.

The first chapters are dedicated to a short historical background of the development of settlement archaeology in Rogaland and a presentation of the sites that yielded the rotary querns. These chapters also include the study of the morphology and types of querns, their chronology (a table with all the information about the radiocarbon datings is in chapter 10), the choice of raw materials and some reflections on their cultural-historical context.

The main body of this work is the catalogue, comprising a description, classification and illustration of each quern, as well as information on their petrology, archaeological context and dating.



Fig. 1: Map of Rogaland and its constituent municipalities (kommuner). Inset map shows Rogaland's location in Norway. The hatched zone corresponds to the Jæren lowlands, the area where many of the querns in this study were discovered. Map © AM.



Fig. 2: Map of Rogaland and the distribution of the rotary querns illustrated and described in the catalogue. Map by Theo Gil (AM).

2. Historical background

Since the 1920s Rogaland in southwestern Norway (fig. 1-2) has played a key role in the research on Early Iron Age settlements. Hundreds of farmsteads, with remains of houses still visible above ground on account of their outer stone walls, were the object of extensive excavation campaigns in the 1920s and 1930s. Jan Petersen, archaeologist and director of the Stavanger Museum from 1923 to 1958, was the pioneer in the study of these Iron Age and Medieval farmsteads. Petersen excavated a great number of these sites and defined the typical layout of the Early Iron Age farm (Petersen 1933, 1936).

These ancient farms comprise several elements: one or, even more often, two roughly parallel longhouses demarcating a yard (in Norwegian: *tun*). The longhouses contained both a dwelling for the inhabitants and a byre for the livestock. From the byre a stone-walled cattle track (*geil*), led out to the *utmark* (literally the outfield), where the animals grazed. The cattle track merged with a stone fence that enclosed the whole cultivated area, the infield (*innmark*). The infield not only contained cultivated small fields, but also clearance cairns and burial cairns. If the farm comprised more than one unit, each would have its own cattle track (e.g. site 3.6, Storrsheia, Myhre 1980: 282, fig. 148).

Petersen applied an identical method to excavate the different buildings (Petersen 1933: 3). Stakes were placed every two meters along its longitudinal axis that served as measuring points for the finds, for example, on the east side, 2 m from stake I and 1.5 m from stake II. Before excavation, he measured the altitudes of the axis and the top of the visible stone walls. Subsequently, only the interior floor area was stripped of its cultural layers. Petersen's method did not apply the technique of sectioning and had almost no regard for stratigraphy. Postholes, pits, hearths, etc. were drawn, and their altitudes recorded, thus providing an idea of the height of the walls and the thickness of the cultural layer.

Petersen obviously considered all features of the buildings as being contemporary, except for very obvious situations such as a hearth partially buried under an outer wall. He also recognised broad occupation phases, such as an initial Migration Period phase at the bottom preceding a Medieval Period phase at the top. However he never seemed to consent to the idea of consecutive building phases within the span of a building's lifetime. Two postholes very close to each other were explained not as replacement posts, but as an addition of a new post when the old began to give way (Petersen 1933: 26, 83-84). He also never realised the significance of the remains of internal woodwork that could possibly have been evidence of inner dividing walls. One of Petersen's reasons for rejecting the existence of internal walls was based on the position of certain hearths lying dangerously close to a wall, as in the case of House 4 at Auglend (Petersen 1933: 86, Pl. XLVII).

Petersen's perception of the longhouses was that of primitive low dwellings with stone walls and simple roofs resting on posts, where humans and animals shared the same space. Petersen's excavations showed that the "typical" farm was inhabited in the Migration Period and then deserted¹ for a reason that is still not established with certainty, although it has been much debated.

¹ The term "deserted farm" is borrowed from the discipline of History where it refers to the great number of farms that were abandoned as a result of the Great Plague in the 14th century.

The latest explanation for the desertion of many of these ancient farms is an event in 536 AD, when the sun was hidden for two consecutive summers behind a thick veil of dust, probably caused by a large volcanic eruption. The dendrochronological curve shows a sharp decrease in tree ring growth in 536 and an even sharper drop in 539 and 540 (Gunn 2000: 12, fig. 1.3). That a dramatic event took place is beyond doubt (Axboe 1999), since the number of settlements decreased drastically, as did the number of burials in the archaeological record. At the site of Forsandmoen (see below) the number of farm units dropped from 10 to 2 in the late 6th century (Løken *et al.* 1996: 78). On some of the sites the remains of the houses were then rebuilt and resettled in the Medieval Period and once again abandoned in the 14th century during the Great Plague.

The deserted farmstead of Ullandhaug was the first prehistoric farm in Norway to be excavated comprehensively. This fieldwork, that took place in 1967 and 1968, included not only digging the houses, but also the farmyard and the areas around the houses (Myhre 1980). A surface of 3900 m² of the central area was explored, mostly by hand, in addition to a surface of about 800 m² with smaller features, including trenches (Myhre 1980: 25, fig. 5). These campaigns brought new, significant results. It was established that the longhouses had two consecutive phases of occupation. But more important was that the houses proved to be wooden buildings with walls of standing planks slotted into sill beams. The outer stone walls did not carry any weight of the roof, but served as insulation and protection against the rain. The longhouses had inner partition walls that separated the byre from the living quarters and also divided the living area into more than one room. The roof, made of grass turf resting on several layers of birch bark, was carried by a series of interconnected trestles (i.e. a pair of posts joined by a tie beam at the top), a roof-carrying construction technique known in Norway well into the 19th century for boat-houses, barns and warehouses.

The next important excavation campaigns took place at the settlement of Forsandmoen in 1980-1990, 1992 and 1994 (Løken 1987, 1992, 1996: 69-78), with further excavations in 2007 (Dahl 2008). The site was first discovered in 1980, when postholes were uncovered under a burial cairn. Nothing of what was to be later unearthed was visible on the surface. More than 80 000 m² were uncovered by means of mechanical top soil stripping. Traces of no less than 285 buildings were brought to light, spanning the Bronze Age period II (c. 1500-1300 BC) to the Merovingian period (c. 700 AD). The buildings were studied in detail and changes in lay-out and building techniques were documented. Through this work, the settlement was divided into sixteen phases, each lasting about 200 years (Løken 1996: 72-78). The Bronze Age phases do not overlap, whereas the phases of the Iron Age overlap by a century. Phase 14 is dated to 300-500 AD, phase 15 to 400-600 AD and the final phase, 16, is dated to 500-700 AD. In phase 14 a pattern in the organisation of the farm units is visible. One unit consisted of at least one longhouse with living quarters and byre. In addition there could be one (or more) smaller buildings with numerous hearths, that served as a workshop, smithy, or a storage room. The smallest building of the farm unit was labelled a “four-poster”, and corresponds to an almost square construction with only four roof-carrying posts, and was used for storage (possibly a granary).

The house layout was standardised, with a byre in the eastern end and the living quarters in the western end. The normal width was 6-7 m, and the length varied between 21 and 40 m. If the house was longer than 33 m, it had additional living quarters east of the byre, with the same internal arrangements as the western room. The living quarters had one entrance with a pair of door posts

about 3 m from the gable end, between the first and second trestle. The hearth was placed half-way between the second and third trestle about 10 m from the gable end. The byre had one or two opposite entrances, also determined by a pair of posts. The distance between the trestles in the byre was usually 3.1 m, giving space for three stalls. It was also demonstrated that the long walls of the house were not straight, but slightly convex so that the house was wider at the middle than at the gable ends. The site of Forsandmoen is exceptional, not only because of its long, unbroken sequence of occupation, but also because it was the first (and hitherto only) prehistoric village to be excavated in Norway.

Until the 1980s, our knowledge of the settlements in Rogaland was largely restricted to the Early Iron Age, a period with remains of houses visible on the surface. Only a few Medieval and Late Iron Age buildings were known. With the introduction of the mechanical top soil stripping, settlements from the Bronze Age and the Neolithic began to emerge on a larger scale (see e.g. Løken *et al.* 1996: 69-91). Despite the new excavation techniques, Late Iron Age settlements are still scarce. The few that have been unearthed, such as the Merovingian buildings at Gausel (Børsheim & Soltvedt 2002: 253) and those from the Viking Period at Tastarustå excavated between 2006-2007, (Armstrong 2007) have not yielded querns, not even in fragmentary state.

Conventional chronology

The chronology applied throughout this work is the the conventional chronological framework of the South Scandinavian Iron Age and Medieval Period.

The Early Roman Iron Age dates from 1-150 and is divided into two phases (B1: 1-70, B2 70-150). The Late Roman Iron Age dates from 150-400 and is divided into three phases (C1: 150-250, C2: 250-320, C3: 320-400). The Migration Period dates to 400-550 and is divided into two phases (D1: 400-475, D2: 475-550). The Merovingian Period dates to 550-800 and is divided into an Early phase (550-700) and a Late phase (700-800). The Viking Period (800-1050) is also divided into Early (800-900) and Late (900-1050) phases. The Medieval Period (1050-1537) is subdivided into three phases: Early (1050-1200), High (1200-1350) and Late (1350-1537). The Modern period begins in 1537 with the introduction of the Reformation in Norway and Denmark.

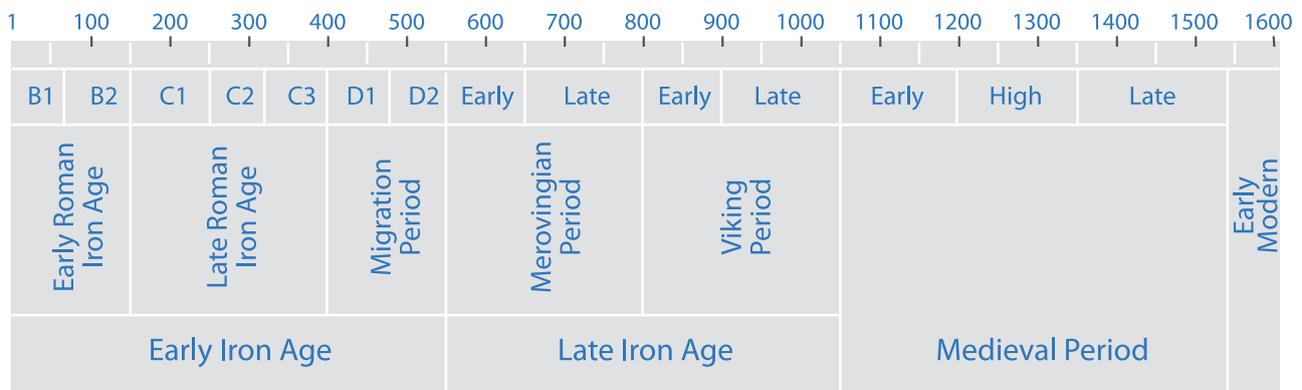


Fig. 3: Chart of the conventional chronological framework of the South Scandinavian Iron Age and Medieval Period.

Chronologically relevant material

The dating of materials recovered on prehistoric settlements is naturally closely linked to the chronology of the grave goods. The excavations in Bergen, Oslo, Trondheim and Tønsberg provide the essential comparative material for the Medieval Period. The following is a brief list of datable artefacts that are habitually associated with settlement sites.

Early Iron Age: Bucket-shaped pottery is a locally produced ware that consists mainly of either crushed soapstone or asbestos with a small amount of clay as a binding material. This ware, essential for dating, is from about 300-550 AD (Kristoffersen & Magnus 2010). Ordinary settlement pottery (i.e. made from tempered clay) is not as suitable for dating, as it is poorly studied - especially if compared to the high quality ceramics deposited almost exclusively in burials. Pottery production in Norway seems to have ceased completely around about 550-600 AD and was not renewed until the middle of the 18th century. Other typical Early Iron Age objects include whetstones of quartzite, quartzite strike-a-lights and a variety of types of spindle-whorls, usually made of soapstone.

Late Iron Age: Pottery in the Late Iron Age settlement contexts is extremely rare (cf. above). Vessels, commonly large globular cauldrons, are principally made of soapstone. Whetstones are of slate or schist and have a square or rectangular cross-section. Other typical objects are certain varieties of spindle-whorls.

Medieval Period: Soapstone vessels, soapstone lamps, phyllite griddles and certain types of fishing line-sinkers are typical finds for this period (after c. 1100). Pottery again becomes common (at least in the urban settlements) with imports from Denmark, Germany and England.



fig. 4: Examples of chronologically relevant objects cited in the text. From left to right: Bucket-shaped pot, c. 500-550 AD (h.: 13 cm); bucket-shaped pot, c. 400 AD; small soapstone cauldron from the Viking Period; Medieval phyllite griddle fragments. Photo by Terje Tveit (AM).

3. The sites: a brief presentation

Introduction

The following is a brief description of each of the archaeological sites in Rogaland that yielded the rotary querns that appear in this study. All of the sites are settlements except for Raunes (site 27), a single burial mound. This situation is what would be expected since rotary querns are usually associated with domestic activities. The illustrations of the houses were redone for this work based on the original drawings in the published works, mainly Petersen 1933 and 1936 and Myhre 1980, and checked against the site reports and find lists. The symbols for the different settlement features (walls, pavings, hearths, querns, etc.) have been harmonised (fig. 5). The scales are also uniform except for the longhouse at Lyngaland (site 14). The precise position of the rotary querns and, in certain cases also the saddle querns, is noted when possible. Each site description is preceded by the name of the site, the catalogue numbers of the querns and, when possible, the bibliographical reference. Complete information on the radiocarbon datings in a table in chapter 10.

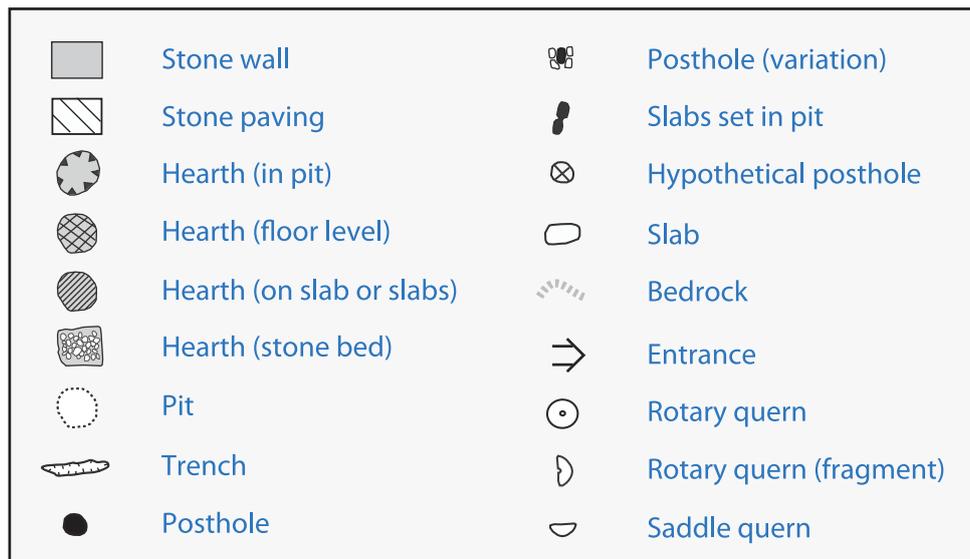


Fig. 5: Symbols of the features used in the drawings of the sites in this work.

3.1 Skagen 3, Stavanger Cat. 1-3 (Lillehammer 1970)

The site of Skagen 3, excavated in 1968 by Arnvid Lillehammer, is situated in the market place in Stavanger city centre and is to date the largest excavation (172 m²) of medieval Stavanger. The site consisted of the two contemporary features: the NE corner of a wooden building and a stone paving, possibly a backyard or an alley. The building and its contents of about 100 kilos of grain were destroyed by a fire dated to 1272 AD, the only medieval blaze in Stavanger cited in written sources. Three fragments of querns (cat. 1-3) were found in the stone paving area, in a cultural layer below, hence older, than that of the fire.

3.2 Ullandhaug, farm no. 24, Stavanger k. Cat. 4-21 (Myhre 1980)

The site of Ullandhaug is strategically situated on the western slope of the ridge of Ullandhaug on the narrowest part of the isthmus of the Stavanger peninsula, between the fjords of Hafrsfjord and Gandsfjord. It was a farm consisting of three buildings grouped around a farm yard, a cattle track and a stone fence, encircling the infield. Bjørn Myhre excavated the site in two seasons 1967-1968. The buildings were reconstructed in the early 1970s, and the site was inaugurated as an open-air museum in 1972. The results regarding the buildings and graves were published in 1980. The publication of the finds, however, is still pending. Hence, the find circumstances of the querns are deduced from three sources: the 1980 publication, the original find list and a first draft of the find catalogue. The constructions were two longhouses (House 1 and 3) and a nearly square building (House 2). The site was disturbed in both the Viking Period and Modern times. These later features include two boat-shaped graves from the Viking period erected in House 1, and a Viking period grave at the south end of House 3. This last grave was subsequently covered by a modern stone paving. Furthermore, a second modern stone paving, possibly a road 2-2.5 m wide, ran across the northern end of House 3, the southern end of House 2 and the middle of House 1. A water-pipe trench also ran diagonally through House 3 along almost its entire length.

House 1 is 36 x 7 m (exterior measurements) and, according to an analysis by Løken (1992), had three phases. Three rotary querns were brought to light: a rough-out, an upper stone and a lower stone. The rough-out (cat. 4) was found at the NE entrance in the wall and the upper stone (cat. 5) was in the western wall of the house. The third quern, a lower stone (cat. 6) was a stray find from the area east of the house. A saddle quern was also retrieved from the fill in the possible road mentioned above.

Other types of finds were scarce and consisted mainly of sherds of bucket-shaped pottery. One of these is dated to the early 6th century. A fire destroyed the house, and parts of the original woodwork (in a carbonised state) were preserved in the northern area under the later Viking Age boat-shaped cairn. Although the ¹⁴C-dating (T-677) of 1840±90, 70-320 calAD does not fit very well with the archaeological dating of the house, it does appear to conform to the time of its construction. There are two possible explanations for this “early” dating. Either the wood itself was of a high age (i.e. from old trees), as is common with oak and pine, or old wood was re-used when constructing the roof of the byre of the Migration Period building. The latter explanation would indicate that an older building stood on the site.

House 2 is 12 x 10 m (exterior measurements), and had two phases. According to the interpretation of the excavator, the hearth associated with the first phase indicates the house served as living quarters. In the later phase, devoid of finds, it was transformed to a workshop with a stone-paved floor. House 2, also destroyed by fire, yielded two querns, an upper stone and a rough-out (cat. 7-8). A ¹⁴C-dating of the hearth provided the date 1480±70, 530-660 calAD. A dating from the charcoal layer from the fire that destroyed the house also yielded 1540±70, 430-600 calAD, indicating that the house was used in the 5th and 6th centuries. Sherds of a bucket-shaped pot with entrelac decoration points to a date between 500 and 550 AD, but there were also sherds of earlier bucket-shaped pots dating to the 5th century.

House 3 has a particularly complicated history. Two building phases were identified during the excavation. The first (fig. 6, in orange) was marked by a structure 47 m long and an inner width between 4.5-5.5 m. This earlier phase had a lean-to and four rooms; a byre in the northern end that

took up about 1/3 of the total length of the house, two living quarters with large hearths, and a small room in the south end. Although the function of this last feature was not indicated in the report, today it would be considered an entrance room.

In the second phase (fig. 6, in blue) the house was rebuilt 10 m shorter with a width between 5-5.5 m and retained a lean-to in the southern end. Two entrances interpreted as belonging to the first phase were blocked, and the number of rooms was reduced to two – byre and living quarters. A large part of the floor in the living quarters was paved with stones. Studying the house-plan in the light of the results from the site of Forsandmoen that demonstrated the standardised and regular pattern in the interior layout of the houses (cf. p. 30) it is apparent that the building must have had more than two phases, as there are hearths that could not have functioned at the same time as some of the entrances (for example Entrances 2 and 6 with Hearth 6, or Entrances 3 and 5 with Hearth 5). But these aspects lie outside the scope of this work.

House 3 was also destroyed by fire. A ¹⁴C-dating from the layer of carbonised wood provides the date of 1630+/-80, 340-540 calAD. According to the excavator, both phases of the house were destroyed by fire, and phase 2 was very brief. Three other ¹⁴C-datings were undertaken for house 3. The first is from Hearth 3, a feature under the stone paving and ascribed to phase 1 that dates to 1570+/-70, 410-570 calAD. Hearth 4, also under the stone paving, dates to 2020+/-80, 120 calBC -70 calAD, while Hearth 9 from the entrance room in phase 1 is dated to 1800+/-70, 120-330 calAD.

The finds from phase 1 span the late 4th - early 6th century AD. There are few finds from phase 2. The only datable sherd is that of a bucket-shaped pot attributed to the late 4th - early 5th century. This date indicates that it probably was displaced from its original position and belongs to phase 1.

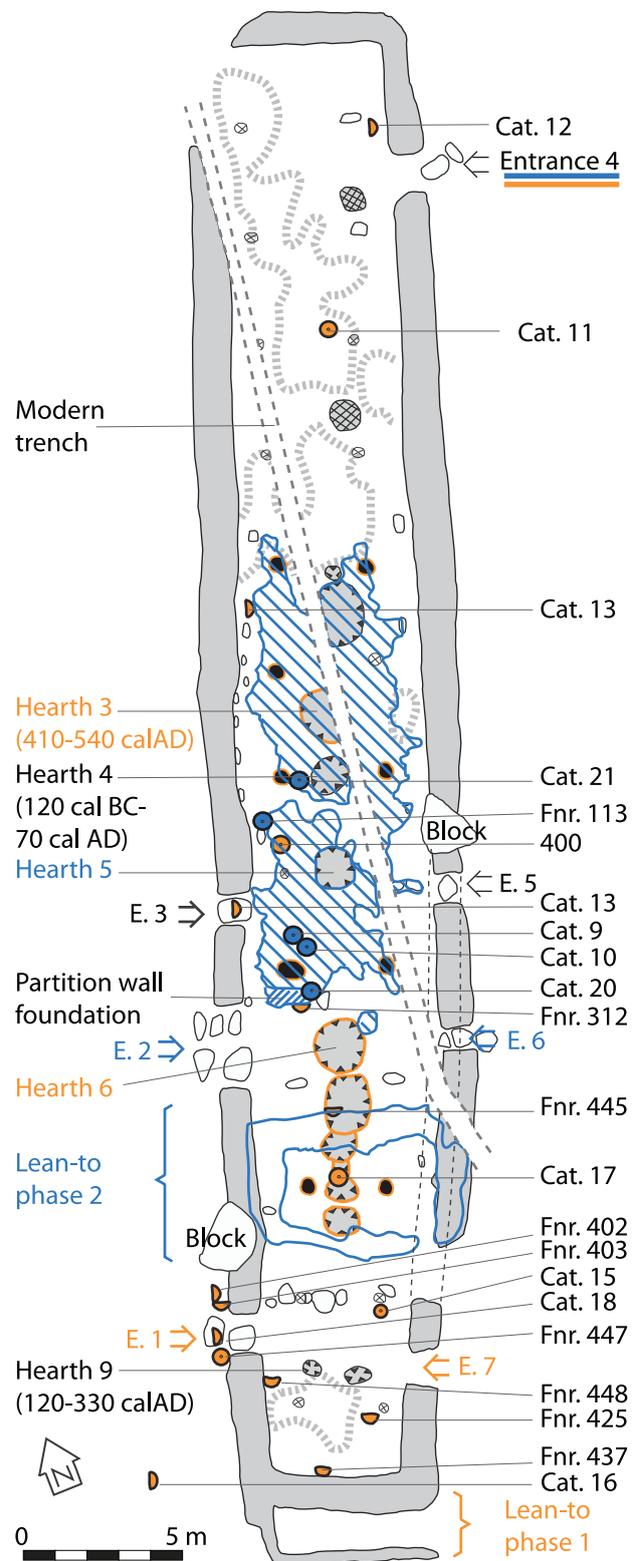


Fig. 6: Ullandhaug, Longhouse 3. Drawing by Å. D. Hauken based on drawings by Myhre 1980, photographs and find lists. In orange, phase 1; in blue, phase 2.

No less than 16 rotary querns (either whole or in fragments) were found in House 3. The lot is divided into eleven upper stones, four lower stones and one rough-out. Of the 16, one rough-out (fnr. 113) and two lower stones (fnr. 400 and 457) could not be located in the museum. None of the stones were in their original working position. They were all in stone pavings, in stone walls, or in other construction features, such as a lower stone (fnr. 457) that served as a door pivot in the first phase of House 3 (Myhre 1980: 184-185, fig. 94a, 94b). There are also finds of saddle quern fragments and stones interpreted as runners (find nos. 52, 312, 401, 403, 425, 437, 445 and 448), all found in secondary positions in phase 1. The sheer number of stones and the occurrence of blanks or rough-outs seem to indicate that this is a site where quern stones were produced.

3.3. Gausel, farm no. 14, Stavanger k. Cat. 22-24 (Bårdseth 2002; Børsheim & Soltvedt 2002)

Gausel is on the western, sloping bank of the Gandsfjord about 4 km southeast from the site of Ullandhaug. Excavations took place over three seasons between 1997-1999. In all, 33460 m² were explored by means of mechanical topsoil stripping. During the excavations several farm units were uncovered. Two date to the Pre-Roman Iron Age (c. 500-0 BC), two to the Early Roman Iron Age (c. 0-200 AD) and one large farm unit from the Late Roman Iron Age/Migration period with two parallel longhouses on either side of a stone paved yard (House 4/10 and 8) (c. 200-600 AD). Two or three later Merovingian farm units (c. 600-800 AD) were also discovered. The location of the settlement was moved westwards up the slope in the beginning of the Early Roman Iron Age, in the Late Roman Iron Age and once again in the Merovingian Period (Børsheim & Soltvedt 2002: 254, fig. 195).

House 4/10 (fig. 7) yielded three quern stones: a complete lower stone (cat. 22), half an upper stone (cat. 23) and a fragment of what appears to be an upper stone (cat. 24). This house, designated during the excavation by two numbers (4 and 10), proved finally to be a single feature, 40 m long, transected by a

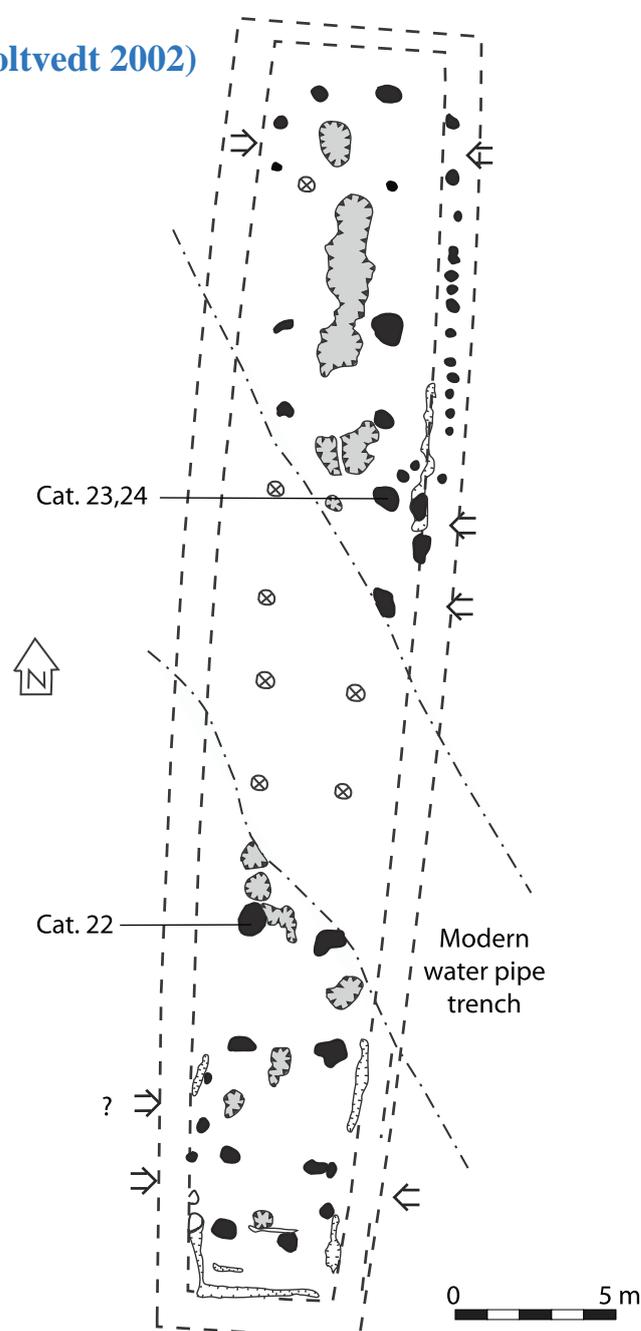


Fig. 7: House 4/10 of Gausel (after Børsheim & Soltvedt 2002).

wide water-pipe trench. The house is interpreted as having at least two phases, with dates in the southern end from 300-550 AD (Børsheim & Soltvedt 2002: 84), while the northern end ranges from 330-470 AD (Børsheim & Soltvedt 2002: 136). Sherds from a bucket-shaped pot decorated with a three-stranded entrelac found in a posthole (Børsheim & Soltvedt 2002: 84, fig. 62) dates to the mid 5th century. A posthole containing two of the quern fragments is dated by ¹⁴C to 1770+/- 70 (TuA 2552). The calibration with OxCal 3.9 places the feature either between 120-420 AD (93.2% probability) or 210-350 AD (52.2% probability).

3.4 Krågeland, Slettabø, farm no. 60, Bjerkreim k. Cat. 25-26 (Petersen 1933: 23-31)

Jan Petersen excavated the Krågeland site in 1928. It consists of two houses and four burial cairns (Myhre 1980: 275, fig. 142).

House 1 is the largest of the two, with external stone walls measuring 28.5 x 6.5-7.5 m. It was divided into a byre and living quarters. Finds indicate smithy work in the western end (Petersen 1933: Pl. XLV, fig. 2; Myhre 1980: 276, fig. 143). The original brief site report provides no information about the circumstances and the exact location of the single upper stone (cat. 25). Based on the cross-stamps decoration on one of the bucket-shaped pots, the house dates to the Migration Period (probably the 5th century). A 4th century burial (see below) indicates that there was probably an earlier phase of occupation.

House 2 is smaller, 11.5 x 5.25-7 m, with only one room, 9 x 3.5-4 m (fig. 8). No less than 38 postholes were found in this feature, suggesting the house had several phases of occupation. A quern (cat. 26) was found almost in the middle of the house, between two postholes along the longitudinal axis (note by school teacher P. Heskestad in the archive). The original find list includes a flint arrowhead, although it does not appear in the final catalogue. The arrowhead and the pottery suggest an earlier occupation from the Late Neolithic or Early Bronze Age, unrelated to the house. The rest of the material provides no evidence to date the site conclusively. The absence of bucket-shaped pottery, however, points to a more recent date; Petersen was inclined to date House 2 to the Medieval period based on the slate whetstones and “the young impression” of the quern (Petersen 1933: 30).

The four different burials belonging to the farm date respectively to the end of the 4th - beginning of the 5th century (S5045), the beginning of the 6th century (S5046), the 4th century (S5047) and 5th-6th century (S5048). It is also of note that the third burial (S5047) contained Bronze Age pottery.

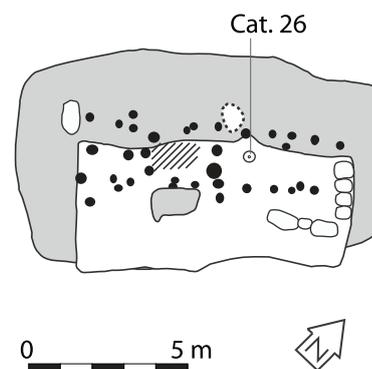


Fig. 8: Krågeland, Slettabø, House 2 (after Petersen 1933).

3.5 Auglend, Store Svela, farm no. 32, Bjerkreim k. Cat. 27-29 (Petersen 1933: 31-34)

The Auglend farm site comprises three longhouses, one small building, 21 burial cairns and, at least, 50 clearance cairns. Jan Petersen excavated the site during three seasons between 1928 and 1930. Longhouses 1 and 2 are arranged in almost parallel axes on either side of a farmyard, with an adjacent small building, probably an outhouse (House 3). House 4 lies some 120 m away from the other buildings (Myhre 1980: 277, fig. 144).

Quern finds are limited to House 1 (fig. 9), a structure measuring 41 x 7-8 m (interior measurements 39 x 5-7 m). Almost half of the house was a byre equipped with a stone paving, while the other half was probably divided into two living quarters (Myhre 1980: 278, fig. 145).

The finds consist *inter alia* of three rotary querns (a fragment of an upper stone, a lower stone and an upper stone rough-out, cat. 27-29), two fragments of saddle querns and one grinding slab. The upper stone fragment (cat. 27) was in the SW corner of the house and the lower stone (cat. 29) was a part of the stone paving in the byre. As none of the other stones are inscribed with find numbers, their position is hard to ascertain, but the largest fragment of saddle quern (S5051 m) was at the bottom of a pit. Cat. 28 (if correctly identified in the find list) was found in the floor next to a second pit, where it could have served as a base for a post.

The central living quarters had a main hearth with an adjacent “podium” made of slabs. This feature, used for drying grain, is called *tussa* in the local dialect, and is known in other contemporary houses (cf. for example site 3.8, Birkeland, House 2).

The irregular layout of the postholes and hearths indicates that the house had more than one phase. Other finds, including sherds of a bucket-shaped pot with entrelac decoration and one single sherd with bead stamps (a feature that does not occur until the mid 5th century), date the main occupation phase to the Migration Period. A

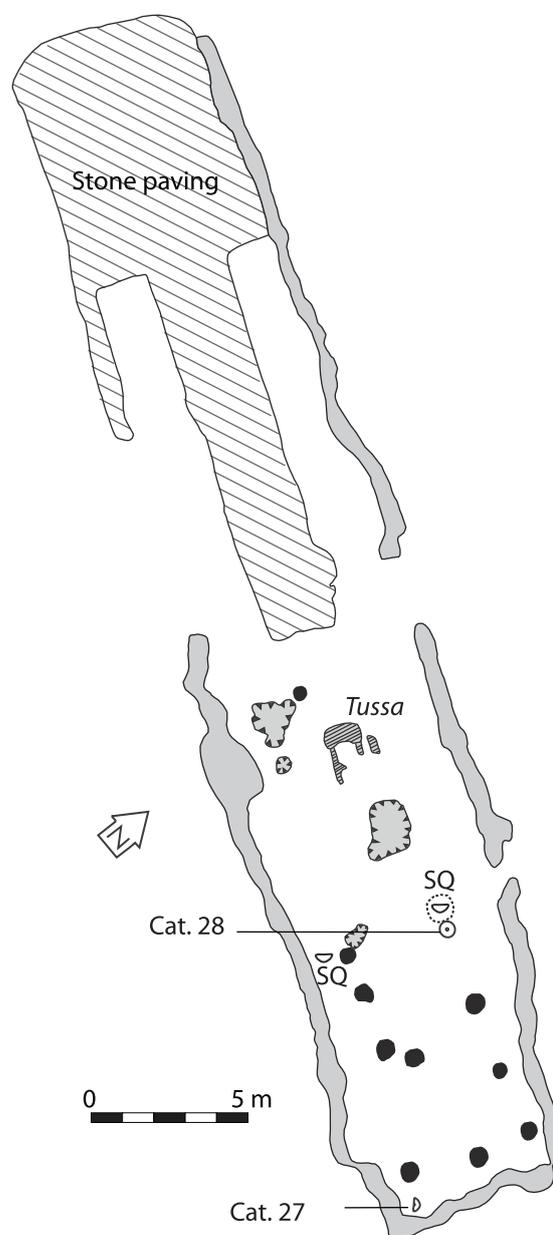


Fig. 9: House 1 of Auglend, Store Svela (after Petersen 1933 and Myhre 1980).

recent ¹⁴C-analysis of food residue from a potsherd yielded 1460± 30 BP, 550-650 calAD, thus prolonging the occupation into the Merovingian Period.

Both cat. 28 and 29 were used as integral parts of the construction of the latest, Merovingian phase of the house, and should be dated to the Migration Period. The house and farm were abandoned after a fire. The presence of Late Bronze Age potsherds (Petersen 1933: Pl. X, top left) indicates an even earlier undetected settlement at the site and certainly accounts for the saddle quern fragments found in the house.

3.6 Storrsheia, Store Svela, farm no. 32 and Vikeså, farm no. 33, Bjerkreim k. Cat. 30-31 (Petersen 1933: 38-54, Pl. XXX, fig. 1)

Storrsheia is a large farm complex that is now divided into two sectors by the E39 road. The site has five longhouses and a large number of burial cairns and clearance cairns. The five houses make up three smaller units, each with a walled cattle-track leading from the byre out to the pastures (Myhre 1980: 282, fig. 148). The site was excavated by Jan Petersen in 1929 and 1930.

Querns and quern fragments were found in Houses 1 and 2. The fragment from House 1, probably from a granite lower stone, associated with artefacts from the Migration Period, is very small and therefore omitted from this study. House 2 is 18.5 x 6.75 m, with interior measurements of 16.8 x 4 m (fig. 10). It originally stood in the Early Iron Age according to bucket-shaped pottery and doughnut-shaped clay loom weights, and was resettled in the Viking period based on soapstone vessel sherds and slate whetstones.

The querns (cat. 30-31) were in the vicinity of the main fireplace, a feature built with stone slabs. Since Petersen states that the upper stone fragment was laying partly on top of the lower stone, it is possible that this is a rare example of a whole handmill found *in situ*. Petersen also mentions a third smaller fragment of an upper stone in his catalogue. This statement is inaccurate because all the upper stone fragments belong to the same quern.

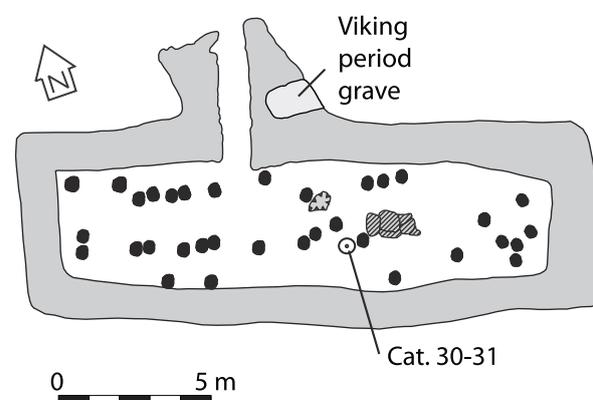


Fig. 10: House 2 of Storrsheia (after Petersen 1933 and Myhre 1980).

3.7 Liknes, Eigeland, farm no. 41, Bjerkreim k. Cat. 32-33 (Petersen 1933: 55-56, Pl. XXXIII, fig. 1)

The site of Liknes, excavated over five days in 1929 by Jan Petersen, was a farm with a single house measuring 23 x 9 m (fig. 11) and the remains of a burial cairn. The finds include two quern fragments (cat. 32-33), potsherds, bucket-shaped potsherds, and a whetstone. Some of the objects can be attributed to the Migration Period.

There is clear evidence that the house was destroyed by fire which left a thick charcoal layer, 6 m long and 1 m wide in the northeastern area, and burnt birch bark, remains of a turf roof, along a part of the northern wall. One scorched quern fragment (cat. 32) was on top of the large charcoal layer.

The general dating of the finds does not concur with the layout of the house as recorded by Petersen. Most of the western part of the house was covered by a floor paved with rounded stones. The report provides no information on whether there was charcoal or birch bark on top of the stone paving. This area contained no objects, suggesting that it was a byre. The only hearth was immediately beside the stone-paved floor which is not the typical position for a hearth in the Migration Period. Assuming the existence of a partition wall between the byre and the living quarters, the hearth's position would be by the wall, a most unlikely place considering the danger of fire. Moreover, in the Migration Period hearths are always placed in the middle of the space made up by two pairs of roof-carrying posts.

This house therefore must have experienced several phases of occupation and was probably deserted at the end of the Migration Period. It is possible that it was then resettled in the Viking or Medieval Period, as is the case of other sites, such as Birkeland, Hønnland and Lyngaland. However, there are no finds from these later periods to support this notion.

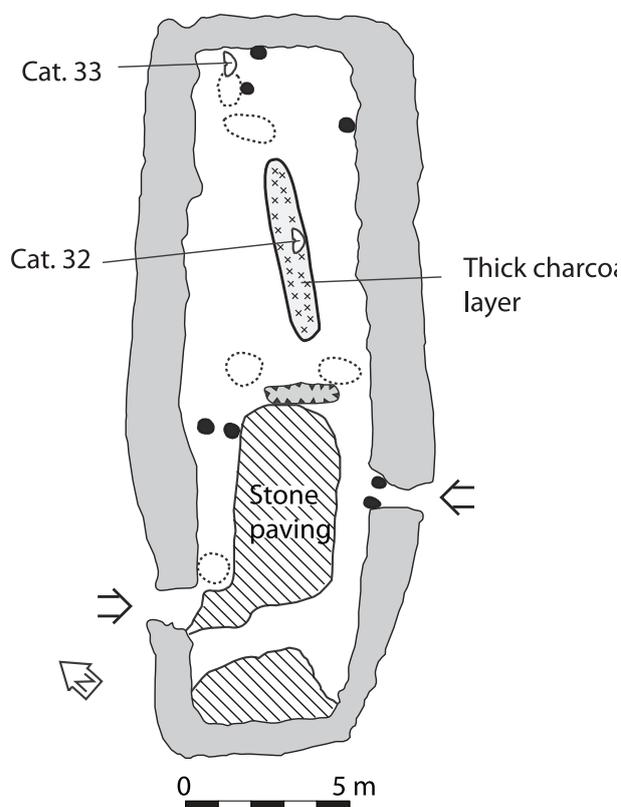


Fig. 11: The house of Liknes (after Petersen 1933).

3.8 Birkeland, Eige store, farm no. 52, Eigersund k. Cat. 34-42 (Petersen 1933: 5-16)

The site of Birkeland, excavated by Petersen in three seasons (1926, 1927 and 1931) is a farm complex comprising five buildings and eight burial cairns, although now only five burial cairns and the remains of one house are preserved. The farm was apparently divided into two units, each with a stone-walled cattle-track departing from the byre (Myhre 1980: 269, fig. 136). Quern fragments were found in three of the buildings: House 1 (cat. 37-39), House 2 (cat. 40-42) and House 4 (cat. 34-36).

One of the two farm units (House 1) had only one house (fig. 12). It was 28 x 8.5 m with interior measurements of 3.5 x 5 m (Petersen 1933: Pl. XX) and was divided into two or three rooms: a byre with a stone-paved aisle, a room with a large, rectangular hearth and possibly a second room without a hearth. The finds were mainly potsherds, notably bucket-shaped pots, suggesting an occupation in the late 5th century (Petersen 1933: Pl. I, fig. 1-2). In addition to the fragments of three querns mentioned above, Petersen also uncovered a very large lower stone resting nearly along the longitudinal axis of the house. It was reported to be 75 cm in diameter and 34 cm thick. The stone, probably the largest rotary handmill lower stone known in southwestern Norway, was hewn from an erratic block and can be seen (arrow in the photograph) between the two large boulders in the floor level (fig. 13). Unfortunately, this quern was never transported to the museum.

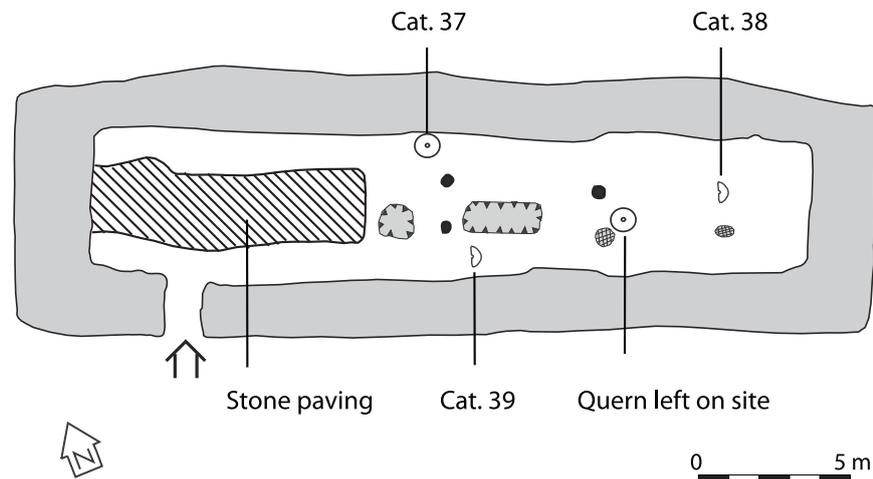


Fig. 12: House 1 of Birkeland (after Petersen 1933 and Myhre 1980).



Fig. 13: View of House 1 of Birkeland. Photograph dating to the excavation of 1926 by Jan Petersen.

House 2 belonged to the second farm unit (fig. 14). It was 28.5 x 8-9 m with the interior measurements of 27 x 5-7 m (Petersen 1933: Pl. XXI, fig. 1) and divided into two or three rooms similar to House 1. The room in the middle had a central hearth on stones, with an adjacent *tussa* (drying slab) (Petersen 1933, Pl. XXVII, fig. 2), similar to that of Augland (cf. p.14).

A thick layer of burnt birch bark in the northeastern corner indicates that the house was destroyed by fire. The finds were mainly sherds of pottery and bucket-shaped pots, and a small cache of glass beads near the northern wall in the byre (Petersen 1933: Pl. I, fig. 4-7). Petersen remarked that the beads were at a higher level (33 cm above the bottom of the excavated area) and suggested they were placed there after the house had collapsed. The beads themselves are

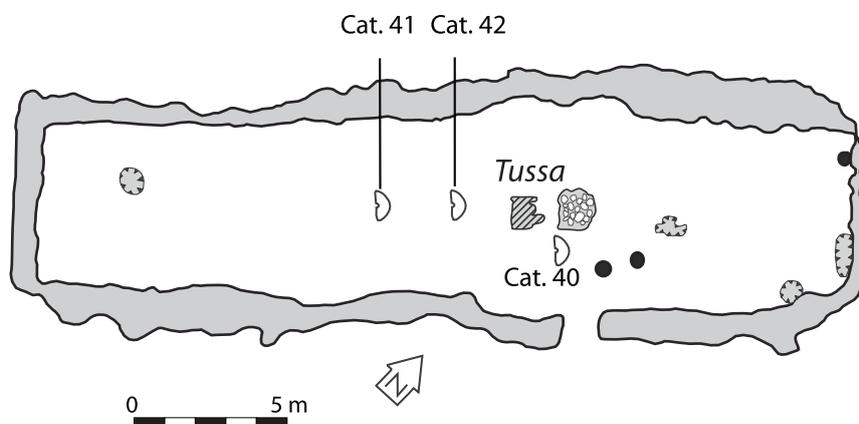


Fig. 14: House 2 of Birkeland (after Petersen 1933).

hard to date since their form is common both in the Early and Late Iron Age. One sherd of bucket-shaped pottery decorated with small bead stamps (not illustrated in the 1933 publication) indicates a Late Migration Period date (c. 450-550).

House 4 stood about 25 m south of House 2. It was 26 x 6.75 m, including a small lean-to or shed in the eastern end (interior measurements: 4 x 3 m) (Petersen 1933: 340, Pl. XLII, fig. 2). The main space, 15 x 4 m, can tentatively be divided into two rooms, one with the main hearth built of stones and a floor partially covered with stone slabs, and a second without hearth but with a small cooking-pit (Myhre 1980: fig. 180).

The majority of the objects were in the second room. Unfortunately, the exact positions of the quern fragments (cat. 34-36) were not recorded. The report simply states that they were found in different places. Other finds include iron objects like a hoe and clinker nails, pieces of iron slag, fragments of phyllite griddles and two fragments of a soapstone vessel. The griddles and the soapstone vessel provide a positive Medieval Period dating, about 1100-1350 AD. A carbonised log 1 m long at the southern wall, and a black layer containing charcoal at the opposite wall, reveal that the house was abandoned after a fire.

3.9 Hønnland, Åmdal, farm no. 28, Eigersund k. Cat. 43 (Petersen 1933: 19-21, Pl. XXIV, fig. 2)

The site is a solitary house perched on a hilltop (fig. 15) excavated by Petersen over the course of three days in 1927. The house is 18 x 6-6.5 m, divided into two rooms (12 x 4-4.5 m and 3 x 3.5 m) and has two phases of occupation. The first is from the Migration Period and the second from the Late Medieval Period.

Two quern fragments were discovered. The first, dated to the Migration period, could not, unfortunately, be identified in the collection. The second fragment (cat. 43) was found in the large room together with two fragments of a three-legged bronze pot, fragments of phyllite griddles and an iron padlock (Petersen 1933: Pl. VI, fig. 8-10). The objects date to the Late Medieval Period, but the quern fragment was probably re-used as building material, and thus could have originated in the Migration Period occupation.

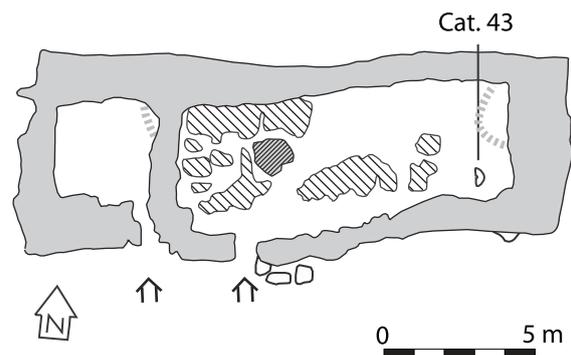


Fig. 15: The house of Hønnland (after Petersen 1933 and Myhre 1980).

3.10 Store Veddågåsen, Hogstad store, farm no. 93, Eigersund k. Cat. 44-45 (Petersen 1939: 36-40, Myhre 1980: 298, fig. 159, House 2)

The site, a single longhouse on a hilltop, was excavated by Jan Petersen and Harald Egenæs Lund in 1936. It has only one house, 31 m long, 9 m wide at its mid-section, 7 m at its west end and 7.5 m at its east end (fig. 16). It had at least two main rooms: living quarters with a hearth to the west and a byre to the east with a stone paving and a cattle track leading out from the entrance.

The first of two quern fragments is of an upper stone (cat. 44) found in the west end quite close to the southern wall. The second, a lower stone (cat. 45) was an integral part of the stone paving in the byre. Other finds were scarce and consisted of sherds of bucket-shaped pots, even fewer potsherds, a fragment of a whetstone and some lumps of iron slag. The bucket-shaped potsherds are not easy to date. The last phase of Late Roman Iron Age can, however, be excluded, suggesting an occupation in the Migration Period. The quern fragments indicate an earlier phase of occupation, especially the lower stone in the stone paving (cat. 45). The first (cat. 44) might have been a part of the stone wall, and ended up in the house when the walls collapsed. There is no reason to believe that the quern fragments were transported to the site to be used as building material as there is no shortage of suitable building stones around the site.

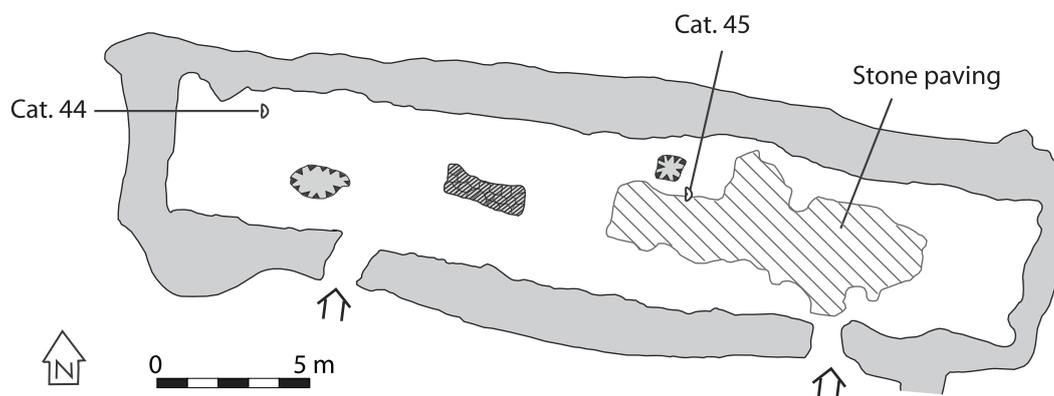


Fig. 16: The longhouse of Store Veddågåsen (after Myhre 1980).

3.11 Høgevollen, Hafsøy, farm no. 46, Eigersund k. Cat. 46-47 (Steen 1995)

Høgevollen is a settlement excavated in 1995 by Bo Steen. The site is interpreted as having two separate farm units. The first had two longhouses (Houses V and VI) and a small square building, while the second had one longhouse (House III) and a small square building. Two querns (cat. 46 and 47) were found in House V. A lower stone served as the foundation of a posthole. A fragmented upper stone was in a second posthole. Although the house has several phases, their stratigraphical relation is not secure. Two calibrated ¹⁴C-datings, 1645±65 and 1660±65, provide the ranges of 345 to 530 AD and 340 to 445 AD.

3.12 Obrestad, farm no. 11, Hå k. Cat. 49-52

This site was excavated by Jan Petersen and Harald Egenæs Lund in five in March 1934. Petersen described it as a destroyed building where the stone walls were either partly removed or torn down. According to the excavators “the whole site [was] so devastated that no proper plan was drawn.” Before the destruction, which obviously took place not long before the excavation began, the house was allegedly 60 m long. This length is hardly likely, and Petersen remarks: “This cannot with certainty be confirmed.” The southernmost 6-8 metres had already been removed, and only about 180 m² were excavated. In spite of the site’s poor preservation, some information can be gleaned from the finds.

The Early Iron Age settlement is represented by sherds of 4th century bucket-shaped pots, quartzite whetstones and some nondescript potsherds. A fair amount of carbonized birch bark, probably the remains of the roof, is also attributed to this phase. The quern finds at the excavation consists of one whole piece and five fragments (cat. 48-52). Unfortunately, one of the fragments could not be identified in the collection. The quern and the fragments are without doubt related to the Early Iron Age settlement phase(s). There are also finds from a Late Migration Period female grave: a small brooch, a button belonging to a bronze clasp, a soap-stone spindle whorl and some sherds of exquisite bucket-shaped pottery.

3.13 Hanabergshagen, Auda-Motland, farm no. 18, Hå k. Cat. 53-56

This site comprises a one-unit farm with two buildings (cf. fig. 36, chapter 5). The first is a longhouse with outer measurements of 27 x 8.25 m and the second a smaller building on the east side measuring 10.5 x 4.5 m. This second feature shared the long wall with the larger house.

The site was excavated by Jan Petersen and Odmund Møllerop in 1950, 1951 and 1953. The larger house had two entrances. One opened to a cattle-track, an indication that the building was divided into living quarters in the southern end and byre in the northern end. The smaller building had no hearth and its function is unclear. Although this was not a traditional way to build, the excavators were confident the two buildings were contemporary.

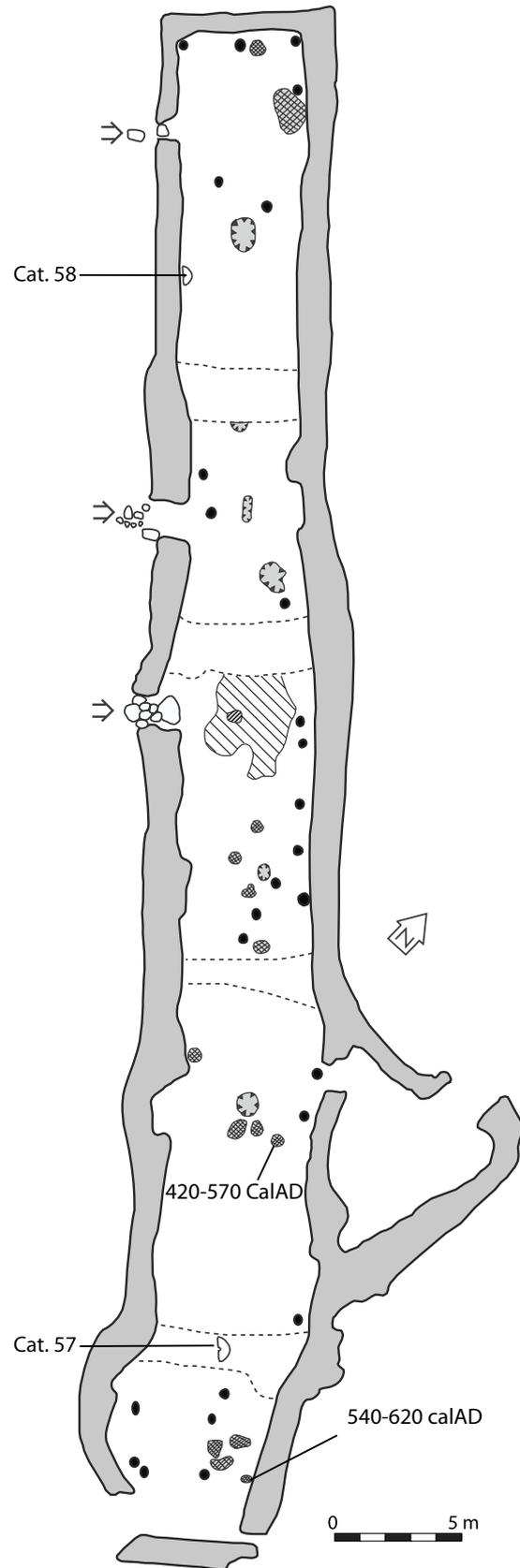
The site yielded four quern fragments (cat. 53-56), all in secondary positions. Cat. 53 and 55 were unearthed outside the larger building. Although cat. 54 was found inside the building, its exact position can no longer be ascertained. The few other finds consist of an iron knife fragment, a few sherds of pottery that cannot be dated more closely than to the Early Iron Age, a few sherds of bucket-shaped pottery without decoration, a fragment of a quartzite whetstone, carbonized birch bark and c. 1 kg of lumps of burnt clay. Finds in the smaller building consisted of only one potsherd, some iron slag and a quern fragment (cat. 56). The site was dated to the later Roman Iron Age and the Migration period, c. 300-550 AD by the excavators. However, a recent ¹⁴C-analysis of a small birch post in the small building gave 1430+/-30BP, 580-660 calAD, i.e. the early Merovingian Period. This seems to imply that the settlement lasted longer than previously thought, or that the smaller building is a later addition.

3.14 Lyngaland, Sælland, farm no. 43, Time k. Cat. 57-58 (Petersen 1936: 37-58, Pl. XLI- XLVII, LIX)

Lyngaland is a farm site with two nearly parallel longhouses, a pen, a cattle-track and a stone fence, encircling an infield of about 15 hectares. The infield is dotted with about 90 burial and clearance cairns. The smaller house is 30 x 5.5 m with interior measurements of 28.5 m. The width, however, varies from 4.6 m in one end to 3 m in the other end. No quern stones were found in this house. The second house (fig. 17) is 62.5 m long and 7-8 m wide, and is divided by stone walls into five rooms. Two of these were excavated in 1927 and the other three in 1933. This house has a complicated history with many phases. The main settlement phase dates to the Migration Period. Yet, some of the pottery, as well as a broken saddle quern, suggest an even older phase or phases. The site was abandoned in the Late Migration Period/Early Merovingian Period; a recent ¹⁴C-analysis from a small hearth in the south end of the building yielded 1500 +/- 30 BP, 540-620 calAD. The presence of phyllite griddles indicate that it was resettled in the Medieval Period when the interior separation walls were built. The building was again deserted after a fire, as witnessed by carbonised birch bark and several carbonised logs.

Two quern fragments were uncovered in secondary positions. Cat. 57 was found on the wall that separated two of the rooms. Cat. 58 was on the floor in the northernmost room, where it probably served as the base of a post. This secondary use must be ascribed to the Medieval Period. The date of the querns themselves cannot be determined with certainty. It is, nonetheless, likely that they are linked to the initial Early Iron Age phases and that they were recycled as building material during the later resettlement.

Fig. 17: Longhouse 1 of Lyngaland (after Petersen 1936 and Myhre 1980). To fit the drawing into the page the scale is slightly smaller than that of the other house drawings.



3.15 Hanaland, Re, farm no. 3, Time k.

Cat. 59-60 (Petersen 1936: 81-86, Pl. XXX, Pl. L, fig. 9-11, Pl. LI)

The Hanaland site is a Medieval farm excavated in only four days in 1935 by Jan Petersen. It has two parallel houses oriented NW-SE (fig. 18). House 1 is 20 x 7-8 m while House 2 is 11.25 x 6 m. Both have very wide stone walls (up to 3 m), and each is divided into a large and a small room. House 1 has entrances in either end of the southwestern long wall. The larger room (12 x 3.6-3 m) featured a rectangular stone paving in the eastern end (previously disturbed during unauthorised digging, see below). A first hearth was set immediately to the east of the entrance and a second, with a rectangular shape, was immediately to the west of the entrance. This second hearth passed under the western end wall and thus belongs to an earlier phase of occupation. The small room (4 x 3.4 m) is interpreted as a lean-to and had no hearth. The smaller building (House 2) had a paved entrance in the north long wall which led into a room (5.75 x 3 m) that seemed to have been divided into two sections. Although there was no hearth in this room, a thick slab right inside the entrance showed signs of fire. The other room is also lean-to, as wide as the opening (1.25 m) and 3.5 m long.

Three querns were found at the site. Cat. 59, an almost complete lower stone, was an integral part of the stone paving in the entrance of House 2 (Petersen 1936: Pl. XXX). Cat. 60, a fragment of a lower stone, was in the middle of the small room in House 1. The third quern was laying in the grass in the large room in House 1. It was obviously brought to the surface during unauthorised digging a few years prior to the excavation in 1935, when the diggers struck the stone paving in House 1. Unfortunately this quern could not be identified in the collection.

There were few finds in the house. Several potsherds date to the Early Iron Age (Petersen 1936: Pl. L, fig. 9-10). Fragments of phyllite griddles and a fragment of a soap-stone lamp date to the Medieval Period. A closer dating is provided by a sherd of green-glazed pottery of English origin, belonging to the Scarborough ceramic group (type II) which was produced from about 1215/1220 to 1350 AD (R. Dunlop, pers. comm., Petersen 1936: Pl. L, fig. 11). This would indicate that this farm, as is the case of so many others, was deserted around 1350.

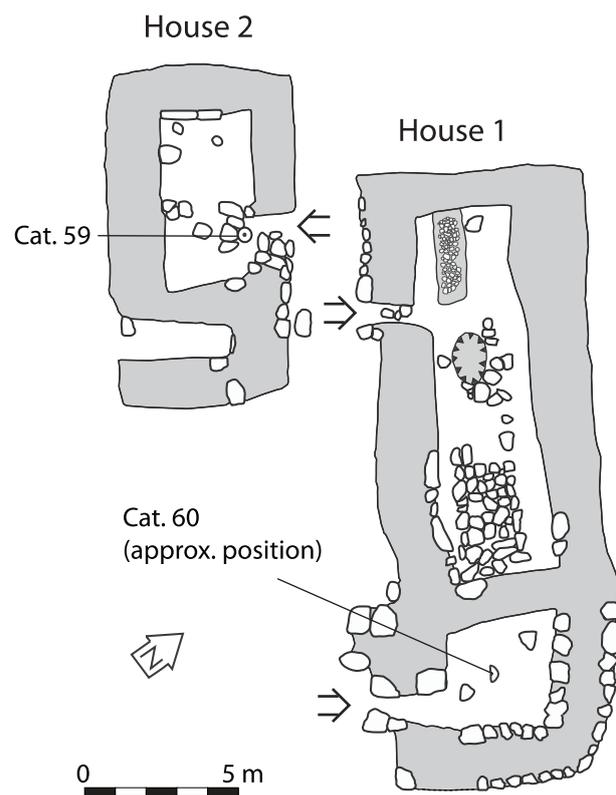


Fig. 18: Houses 2 and 1 of Hanaland (after Petersen 1936).

3.16 Fosse, farm no. 59, Time k. Cat 61-62. (Lund 1940: 35-40)

In April 1939, at the Fosse farm in the Time municipality, Harald Egenæs Lund excavated no less than five burial cairns and the remains of a building. The building (fig. 19) measured 20 x 8 m (interior measurements: 18.5 x 5 m). Prior to the excavation the interior was completely filled with stones that had caved in from the stone walls. The stone walls were approximately 1 m wide and neatly constructed both along the outside and the inside. The building had two entrances. The first, located at the southern part of the west wall, was 1 m wide with a slab paving both inside and outside. The second was at the northern part of the east wall and was 0.85 m wide and preceded outside by a slab paving. Although Lund interpreted the building as a one big room, it was probably divided into byre and living quarters, with the byre in the NW end, making up about a third of the area, and the living quarters in the SE end with the central hearth.

Few artefacts were recovered at the site. These consist of four sherds of an undecorated pot, two fragmented quartzite whetstones, a rounded unworked quartzite stone used as a strike-a-light, a white beach pebble and two querns (cat. 61-62). The upper stone (cat. 61), was found approximately 2 m north of the central hearth on a small constructed “podium” (Lund 1940:

37, fig.1), near the postulated wall separating the living quarters and byre. The other quern (cat. 62), half of a lower stone, was placed just to the east of the central hearth. These finds represent the last phase of the building. An earlier phase of occupation is revealed by the hearth covered by the western wall.

The absence of pottery compelled Lund to consider the house as Merovingian. “There are reasons to believe that the building in any case was inhabited in the latter part of the Migration Period and in the Merovingian Period” (Lund 1940: 39). He does not mention the specific reasons for this notion, but it is probable that he also took into account the fact that typical Viking Period

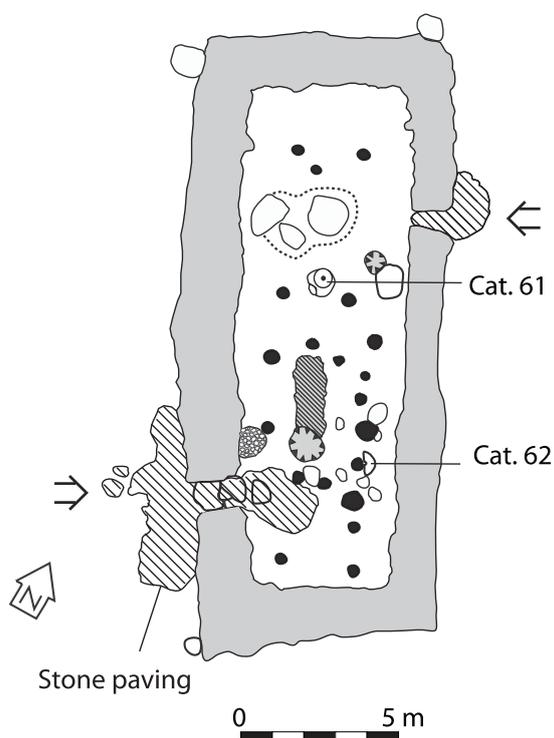


Fig. 19: The house of Fosse (after Lund 1940).

²Lund noted in the site report stored in the archives that the excavation of the house actually began in late November 1938 with the removal of the grass turf and work in the northern half of the house. All the finds were made at this time. The dig, nevertheless, was forced to halt after heavy rainfall flooded the house. Although work was resumed in April 1939, there is no information on finds made that spring.

objects, such as slate whetstones or sherds of soapstone vessels were not found, while quartzite objects considered typical for the Migration period were present. A recent ¹⁴C-analysis of charcoal from the central, rectangular hearth belonging to the last phase of the house proved him right, as it yielded 1500+/-30 BP, 540-620 calAD.

3.17 Tjetland, farm no. 24, Gjesdal k.

Cat. 63 (Petersen 1933: 68-70, Pl. XVIII, fig. 2-7, LIII)

The site is a solitary longhouse (fig. 20) excavated in 1931 by Peder Heskestad (a teacher who assisted Jan Petersen during many of his settlement excavations). The outer stone wall is 27 x 8.5 m while the interior measurements are 23.5 x 5.5 m. The house was divided into two rooms (byre and living quarters). The living quarters had no less than six hearths. Three of these sat very close to a wall – a clear indication of several phases of occupation.

The earlier phases, however, are not perceptible through the artefacts collected during the excavation (sherds of bucket-shaped pots, sherds of simple, undecorated ware, a unique fishing line sinker of fired clay, and some fragments of quartzite whetstones).

A lower quern stone (cat. 63) appeared immediately under the grass turf in the living quarters, less than a metre from the northern wall, indicating it was used as building material and fell into the building when the walls collapsed. The last occupation phase cannot be dated more precisely than to the Migration Period and the dating of the preceding phases is not possible to judge from the material at hand.

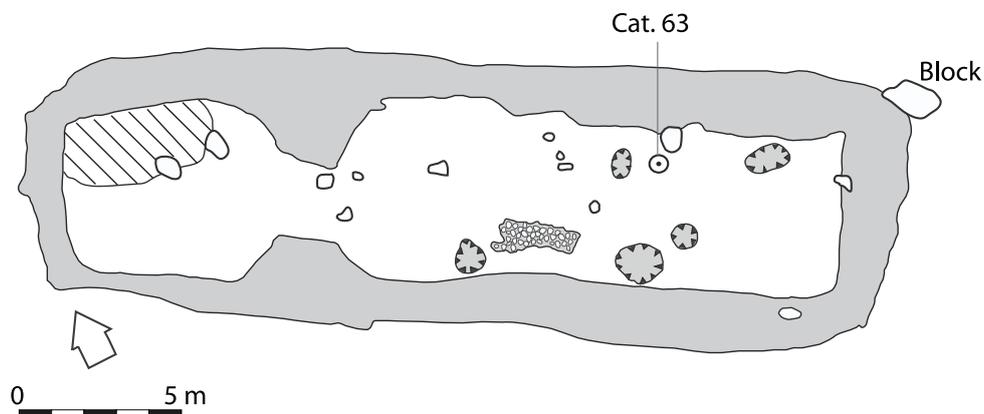


Fig. 20: The longhouse of Tjetland (after Petersen 1933).

3.18 Skeie, Ravndal, farm no. 16, Gjesdal k. Cat. 64 (Petersen 1933: 70-76, Pl. XXXVI, fig. 2)

This site, situated on the eastern bank of the Ravndalsåna River, comprises three buildings and seven cairns.

The first is a longhouse (33 x 8 m) with living quarters and a partially stone-paved byre (Petersen's House 2) (fig. 21). The second is smaller (21.4 x 8 m) with a workshop that functioned in part as a smithy with a furnace. The other half is interpreted as a byre or a storage room (House 1). The third building is very small, no more than 6.9 x 5.75 m (Myhre 1980: 288, fig. 153).

The quern fragment (cat. 64) was found in the room interpreted as living quarters in House 2. A saddle quern fragment was also found in the NE corner. It was probably used as building material in the stone wall, and fell into the house when the walls caved in. (It also held find no. 1 in the find list, which strongly indicates it was found early in the excavation and at a high level).

Petersen dated House 2 to the Migration Period. However, there are only two sherds of undecorated bucket-shaped pottery in the house and the rest of the ceramic is a coarse ware, probably belonging to the Early Roman Iron Age.

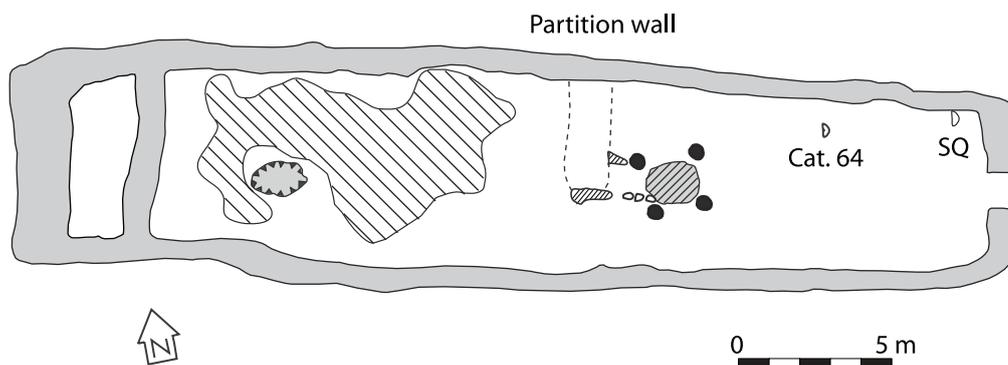


Fig. 21: Longhouse 2 of Skeie (after Petersen 1933 and Myhre 1980).

3.19 Espeland, farm no. 26, Sandnes k. Cat. 65-66 (Espedal 1966)

The site comprises three buildings and two burial cairns (Myhre 1980: 310, fig. 168). One of the buildings was not excavated and its northern half was destroyed during cultivation. The second building was discovered under an early 5th century burial cairn, indicating it belongs to the Roman Period. The third building was excavated in 1966 by Odd Espedal. This feature (called House 25) was at least 42 m long and 7-8 m wide (fig. 22). Its southern end was destroyed by a modern gravel pit. Since there were five hearths, two of which were set very close to a wall, it must have had several phases of occupation.

Three querns were discovered. The first, a lower stone with partially perforated eye (that could not be identified in the collection), served as the base of a post. The second, cat. 65, was outside the building, about a metre north of the entrance. The third, cat. 66, was found in a position that indicates it served as building material of the outer stone wall.

Unusually well-preserved carbonised logs, birch bark, and a thick layer of charcoal covering most of the interior cultural layer show that the house was razed by fire. The finds, primarily sherds of bucket-shaped pots, date the final phase of the building to the mid 5th- mid 6th century. There are two ¹⁴C-datings, one of the wooden building material (1540±70, 430-600 calAD) and one of the hearth that was interpreted as the central hearth (although it lies in line with the entrance) (1690±70, 250-430 calAD). Since the querns were integrated into the construction of the building, they must antedate the last phase, and thus are older than 450 AD.

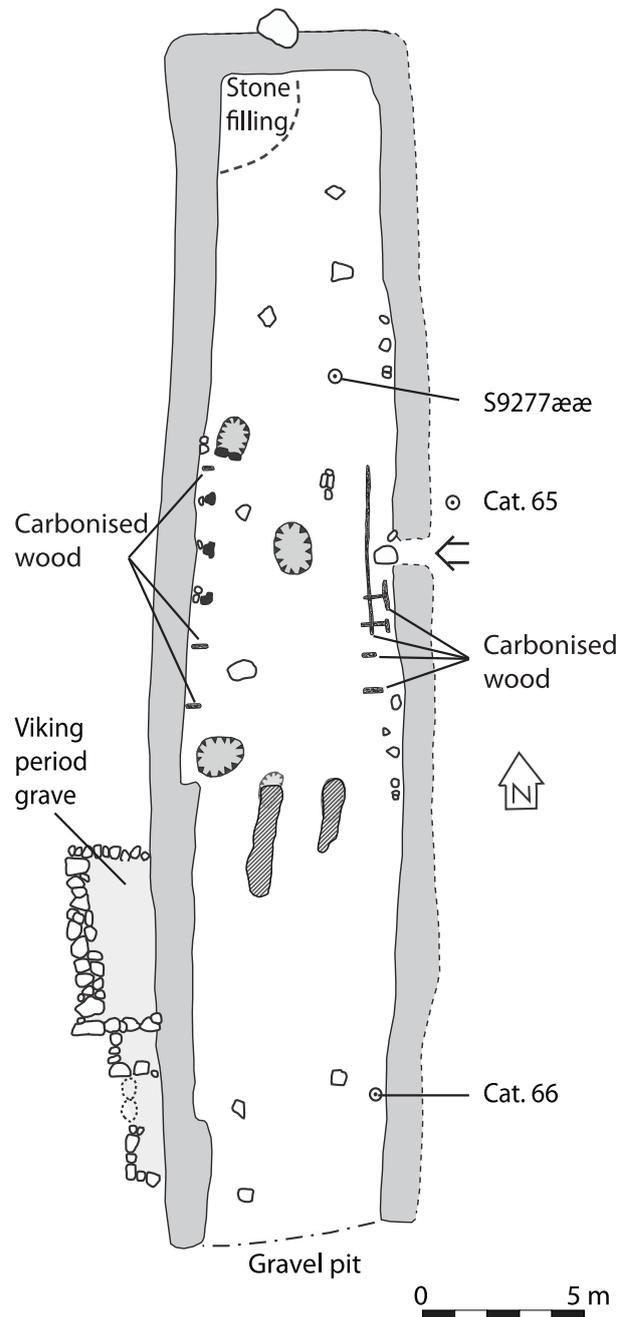
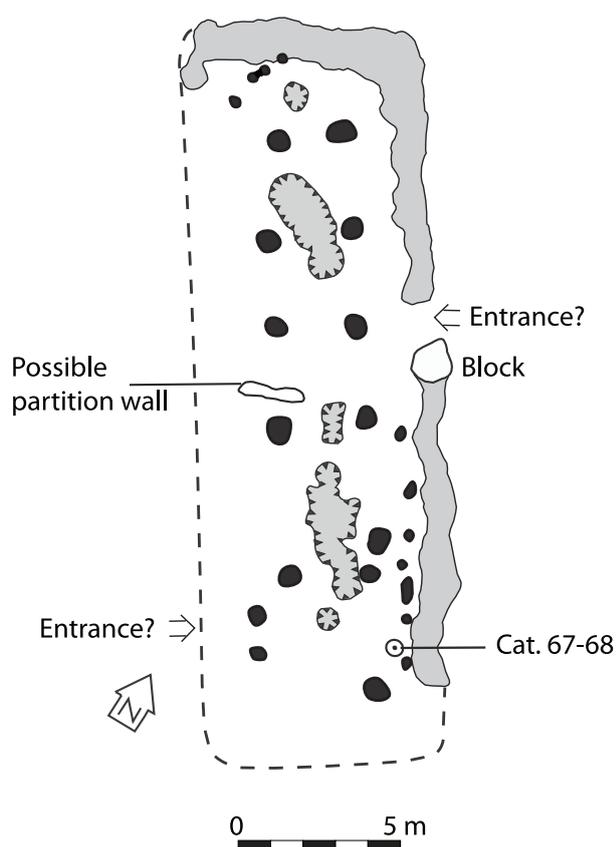


Fig. 22: Longhouse 25 of Espeland (after Myhre 1980).

3.20 Sørbo, farm no. 45, Sandnes k. Cat. 67-68 (Dugstad 2011)

This site was excavated in 2009 and comprises two longhouses, a burial cairn, clearance cairns, a road, a cattle track and a partially preserved stone fence encircling the infield area.

Building 1 was the byre with the cattle track leading from its east wall. Its outer stone walls measured 13 x 6-6.5 m while its interior measurements were 10.5 x 4.3 m. Building 2 served as living quarters and measured 22 x 5 m (fig. 23). Only one long wall and one gable wall of stone were preserved. The other two were removed, probably recovered as building material for modern stone fences. The roof was carried by six trestles and the floor revealed eleven postholes. Six hearths were found along the longitudinal axis (although the two smallest of them probably have no relation to the building). One of them had five consecutive phases, visible as partly overlapping oval or rounded pits.



A complete handmill (cat. 67-68; fig. 24-25) was found *in situ* by the eastern wall (between trestles 1 and 2). This location is presumable its place of rest when not in use. Its working position was probably closer to the hearth to benefit from the warmth and the light. It is very unlikely that it would have been used in its original find position, since the miller would have had to kneel, with the millers' back to the fire to be able to drive the upper stone.

The other finds, mainly sherds of bucket-shaped pots, place the house in the Late Migration Period (c. 500-550), a span that is corroborated by the ¹⁴C-analyses, 1559+/-30, 430-550 calAD (dating material: oat grains) and 1530+/- 30, 430-580 calAD (dating material: charcoal, *alnus*).

Fig. 23: Building 2 of Sørbo (after Dugstad 2011)

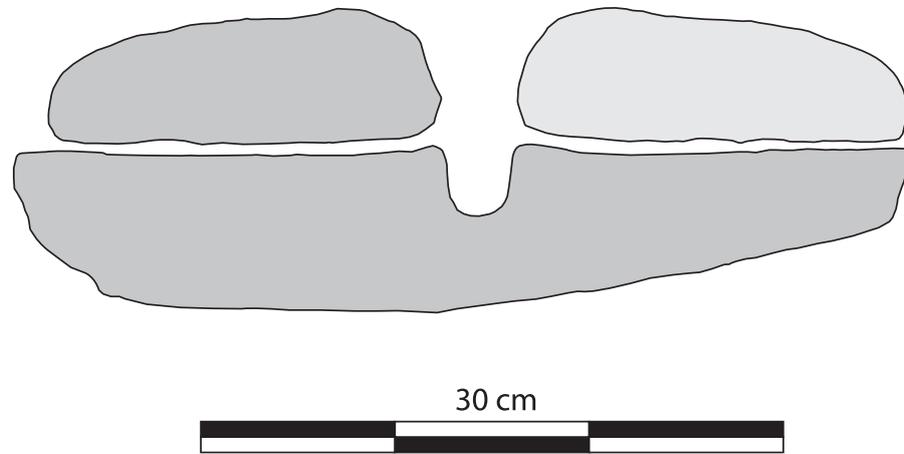


Fig. 24: Querns (cat. 67-68) found in situ in Building 2 of Sørbo. These querns, to date (2011), make up the only secure complete rotary handmill known in Rogaland.



Fig.25: Building 2 of Sørbo with querns (cat. 67-68) in situ. The large boulder behind the handmill is displaced from the eastern wall into the house. Photo by Sigrid Alræk Dugstad (AM).

3.21 Forsandmoen, Forsand, farm no. 41, Forsand k. Cat. 69-73

Forsandmoen is a sand and gravel plain, formed by a glacial river during the melting of the ice cap of the last Ice Age. This site, with a large number of buildings (fig. 26), alluded to previously in the historical background (chapter 2), had one whole rotary quern and four rotary quern fragments (cat. 69-73) from eight different buildings located primarily in the southwestern part of the village. The buildings are 14C-dated by charcoal samples of short-lived deciduous trees (betula and /or alnus) from the central hearth. The site is yet to be published. We therefore owe all the following information to the generosity of the excavator Trond Løken.

Cat. 69 (S13006.1) was in Building X (10), used as a base for a posthole. This building was 27 m long and 7.2 m wide and had three or four phases. The posthole with the quern fragment belongs to the first phase (a) of the building that is dated to 1760 \pm 70 BP, 130-390 calAD. Other finds comprise a potsherd with nail impressions and a sherd of a bucket-shaped pot with a fraction of the most common decorative element, a ribbon of parallel furrows made with a comb. These artefacts belong, however, to a later phase of the building, after about 300 AD. The use of the quern as a quern antedates the building, i.e. the 2nd century.

Cat. 70 (S13012.5) was in a posthole in Building XVI (16), a workshop belonging to Longhouse XI. The building has two phases. Phase A is much better preserved than phase B, that contains the quern fragment. The chronological relation of the phases cannot be established, but both include bucket-shaped pottery. Phase A dates to 1710 \pm 70 BP, 240-420 calAD. The quern fragment cannot be dated more precisely than to this time span.

Cat. 71 (S13134.1) was in a posthole in Building CLXI (161), a poorly preserved workshop at least 10 m long and about 4.5-5 m wide, belonging to one of the large longhouses 156-158 (see below).

Cat. 72 (S13149.6, in two fragments) comes from Building CLXXX (180), which proved to be two different constructions (180a and 180b). The buildings were positioned on top of each other following similar lengthwise (but slightly offset) orientation. Building 180a was 21.4 m long and 6.4 m wide while Building 180b was 30.8 m long and 6.5 m wide. The quern fragments are attributed to Building 180b. One fragment was in the top of a posthole while the other one was pushed down in a depression in the floor and subsoil only 0.3 m away from the posthole of the first fragment. The depression is interpreted as the result of the wear from cattle moving in and out of the byre.

Building 180a, from an older stratigraphical phase dates to 1720 \pm 65 BP, 240-410 calAD, whereas the stratigraphically younger Building 180b is dated to 1825 \pm 70 BP, 80-320 calAD. The finds, all from postholes belonging to Building 180b, consists of sherds an early type of bucket-shaped pottery attributed to the early 4th century. Based only on the finds, the quern fragment can then be dated to the 3rd century.

Cat. 73 also consists of two pieces (13130.1 and 13131.1). One heavily scorched fragment was set at the bottom of a posthole in Building CLVII (157), presumably the youngest of three consecutive phases of a longhouse (Building 156-158). The other fragment was found in a door posthole belonging to Building 158. The quern then must be older than these buildings. The

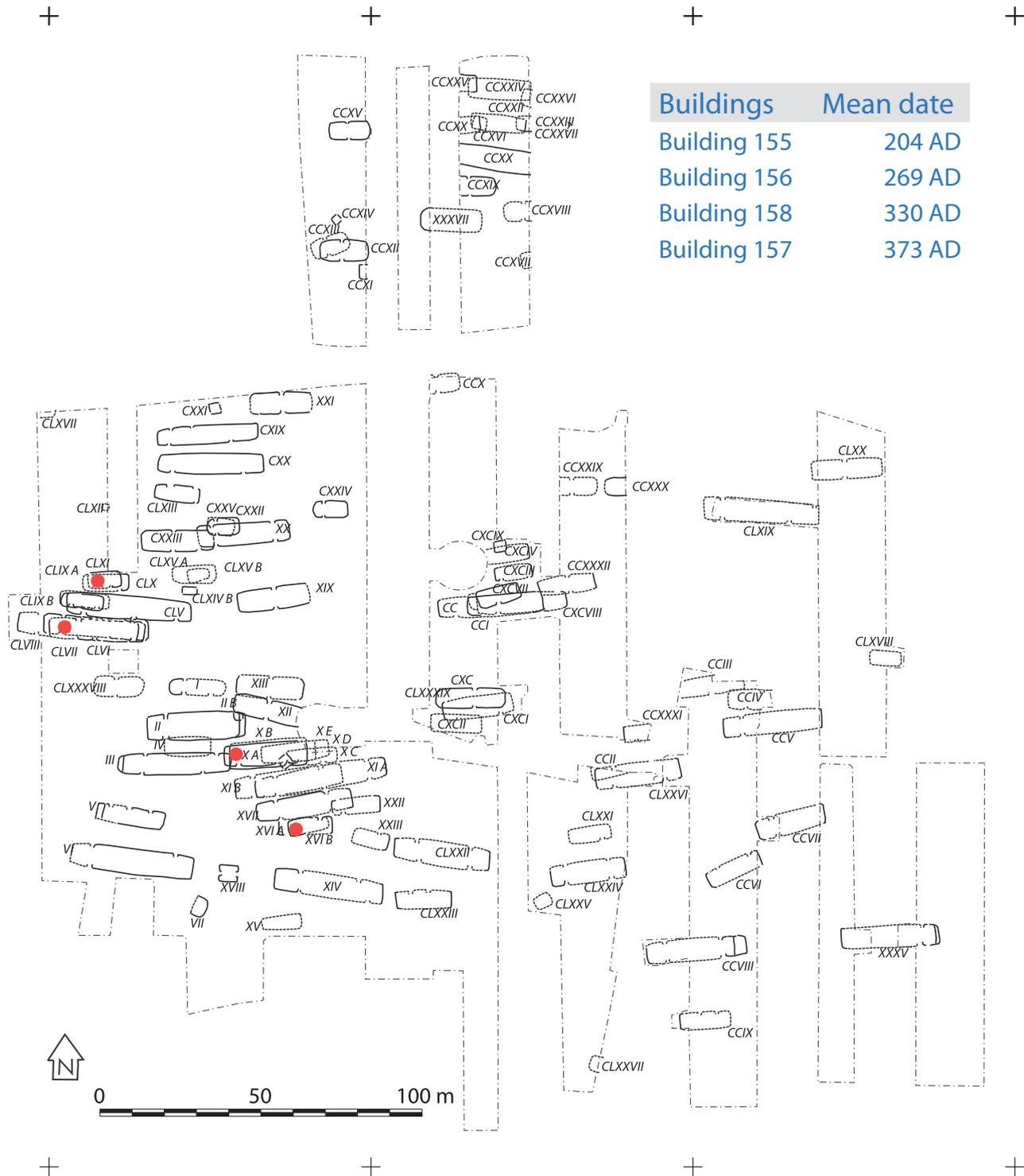


Fig. 26: Map of the SW part of the settlement of Forsandmoen. Buildings with quern finds are marked with red circles. Building CLXXX (180) is situated approx. 700 m SE of Building XXXV in a small cluster of buildings. Inset table of the mean dates of Buildings 155, 156, 158 and 157. Original map by the Forsand project, vectorised by T.J. Anderson.

following calibrated dates (OxCal 3.9, 68.2%) come from the buildings: Building 156: 1760 \pm 70 BP, 130-390 calAD. Building 158: 1705 \pm 80 BP, 240-430 calAD. Building 157: 1670 \pm 75 BP, 250-530 calAD (fig. 27). The users of this quern were thus the inhabitants of either Building 156 or Building 155. Building 156 is the most probable candidate since Building 155 was destroyed by a strong blaze that would have scorched the whole stone, not just half of it. Building 155 must be a precursor to Building 156-158 since they are far too close to have stood at the same time. Furthermore, a workshop (Building 159) belonging to one of the Buildings 156-158 lies in the western part of Building 155. Building 155 is dated to 1820 \pm 80 BP, 80-330 calAD, which give a *t.p.q.*, whereas Building 158 provides the *t.a.q.*, indicating the quern dates to the mid 3rd century.

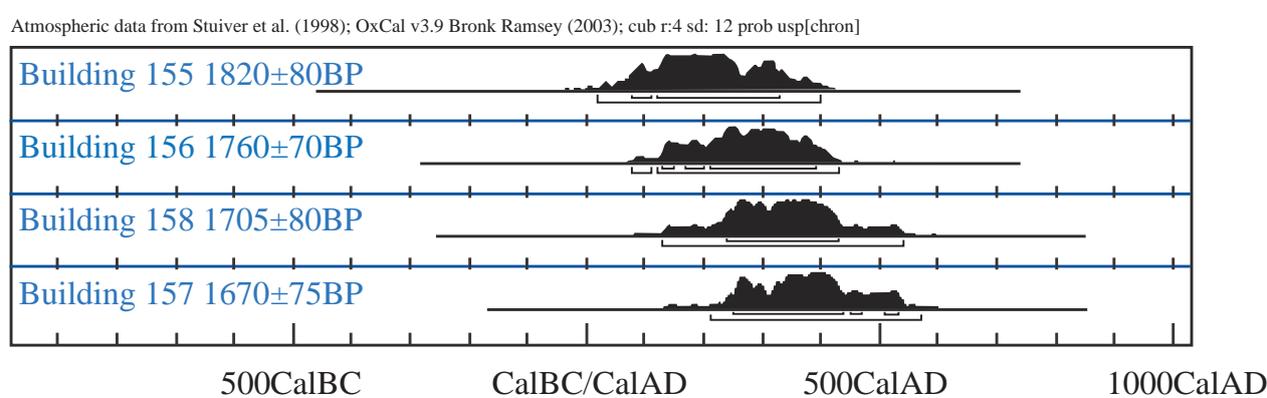


Fig. 27: Plot of the calibration of the radiocarbon dates of hearths from Buildings 155, 156, 158 and 157 of the site of Forsandmoen.

3.22 Håvestøl, Vetrhus, farm no. 57, Suldal k. Cat. 74-75 (Stenvik 1978)

Håvestøl, situated 600 m above sea level, was still in use as an summer dairy farm until the 1940s. The site, excavated in 1976 by Lars Stenvik, consisted of two small buildings approximately 5 m apart, visible at that time only as low elevations in the terrain. The eastern building measured about 6 x 4.5 m, while the western one measured 4.5 x 4.5 m. The excavation did not provide information on the construction of the houses; there were neither postholes nor foundation walls (Stenvik 1978: 267).

Both houses had a cultural layer rich in charcoal and scorched fist-sized stones. This layer yielded finds including clay pipes, horse shoes and schist whetstones, objects that indicate an occupation from the 18th century. In the western building, however, there was an earlier cultural layer sealed off by a 7-8 cm thick layer of gravel. Besides two fragments of garnet mica schist querns (cat. 74 and 75) little else was found in this layer. A ¹⁴C-dating provides a medieval date (540 \pm 80 BP, calAD 1300-1440; Næss & Juhl 1992: 34). Pollen analyses reveal that barley was grown at this site, and there were traces of fossil fields, which implies that the site had been a “proper” farm during the Late Medieval Period, and that the seasonal use as a summer farm occurred much later (Lillehammer 1971). The name Håvestøl is recorded in written sources for the first time in 1602 when the farm was described as “deserted”.

3.23 Nordre Hidle, farm no. 55, Finnøy k.

Cat. 76

Cat. 76 is a stray find discovered on what was probably a deserted farmstead at Nordre Hidle. Finds from the same spot comprise line sinkers, a handled soapstone vessel, a soap-stone loom weight and a lamp or crucible made from a discarded soap-stone loom-weight. All of these artefacts point to the Viking Period or Early Medieval Period. The morphology and fittings of the quern also are in line with this dating.

3.24 Øygarden, Utstein kloster, farm no. 54, Rennesøy k.

Cat. 77 (Petersen 1944)

This site was excavated by Jan Petersen in 1943. It consisted of one large building, interpreted as a byre, and a smaller house just 10 m away, with the interior measurements 6.6 x 3.5 m (Myhre 1980: 335, fig. 192). The building differed from the usual Iron Age layout, as one of the gables lacked the outer stone wall.

An upper stone (cat. 77) was found in the entrance, in what is obviously a secondary position. Other finds consist of soap-stone objects such as a fragmented vessel, loom weights and net sinkers, a bronze pot with angular handles, whetstones and a single sherd of imported Raeren pottery that dates to after 1500-1550 AD.



Fig. 28: The house of Øygarden after excavation, seen from the south. The horizontal slab at the back wall was interpreted as a bed or a bench. The pit in the floor is a hearth. Note the treeless landscape; the whole coastal area of Rogaland was almost totally devoid of trees from the Early Iron Age until a few decades ago. Photo by Jan Petersen 1943.

3.25 Hodnafjell, farm no. 50, Rennesøy k. Cat. 78-80

The site is a single house and was excavated by Jan Petersen in 1944. The house measured 20.5 m in length and a maximum width of 8.8 m. Its layout differed from standard houses in that it was not rectangular but triangular with the long walls meeting in a point toward the north (fig. 29).

The entrance was placed at the south in the straight gable wall and had two steps leading down to a paved area before the door. The building was probably divided into three rooms: an entrance with a partially stone-paved floor, a main central room, and what was probably a byre in the triangular end. There were four hearths in the main room. The largest and second largest hearths were placed on the longitudinal axis of the room, while two smaller hearths were to either side of the axis. One of these was very close to the eastern long wall. The position of these smaller two hearths indicates that the house had one or several earlier phases.

The querns, all in secondary position, comprise a whole upper stone, a fragmented upper stone and a fragmented lower stone (cat. 78-80). Cat. 79 and 80 were obviously used as building material in the southwestern stone wall. Cat. 78 was found 20 cm above the floor level in the entrance room, where it possibly served as building material. Finds of bucket-shaped pottery date the house to the Migration Period. The querns therefore date to a time before about 400 AD.

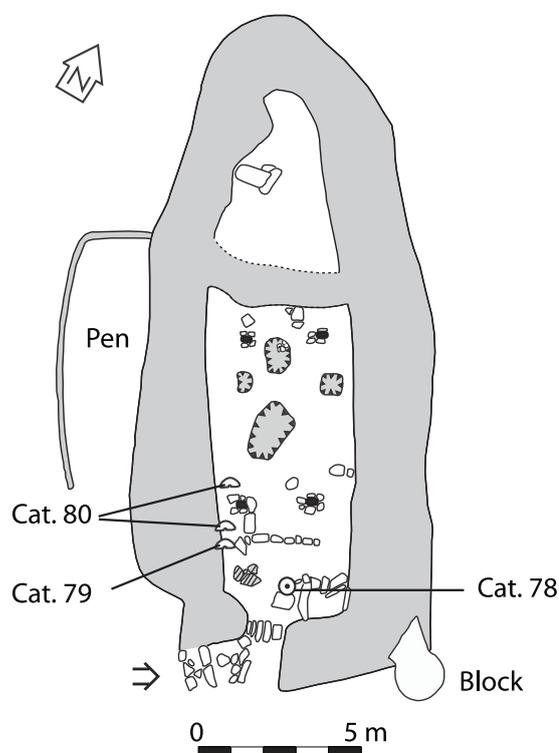


Fig. 29: The house of Hodnafjell (after Myhre 1980).

3.26 Grønevoll, Vaula, farm no. 47, Rennesøy k.

Cat. 81-84 (Petersen 1954: 19, fig. 19, Myhre 1980: 303, fig. 163)

The site was made up of two farm units, each with two buildings. Querns were found only in House 1, a large longhouse with exterior measures of 34 x 7 m (fig. 30). The building was excavated in sections in 1948, 1949, 1950 and 1953 by Jan Petersen and Odmund Møllerop.

The building was divided into at least three rooms, with the northeasternmost end separated by a well-built stone wall. In spite of the absence of a hearth, this room is tentatively interpreted by Myhre as a smithy due to the presence of a large quantity of iron slag. Myhre is also of the opinion that this room is a later addition to the house (Myhre 1980: 305). The main room had a large hearth on slabs, according to the interpretation by the excavators, in the NE end covering a second hearth

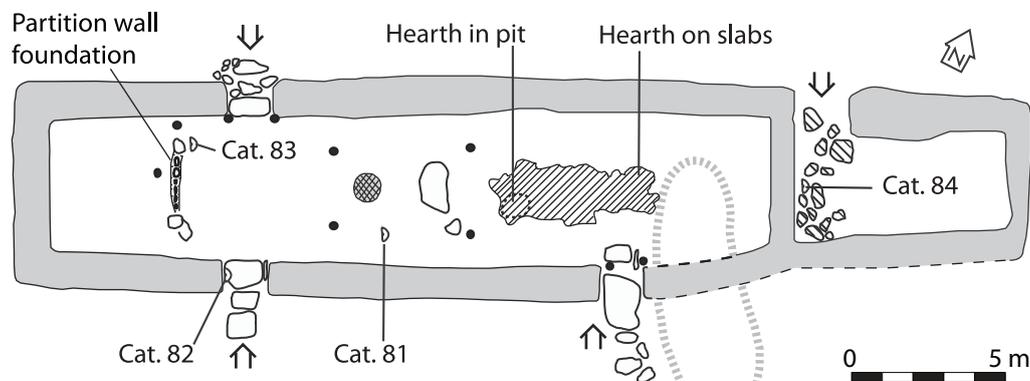


Fig. 30: House 1 of Grønevoll (after Myhre 1980).

in a pit. This second hearth clearly indicates that the house had an earlier phase. A row of stones located towards the southwestern end was interpreted as the foundation of a partition wall. Ten soap-stone loom weights were found in the southern end, indicating that a warp-weighted loom once stood here.

Four querns stones, all in secondary position (cat. 81-84), were found in the longhouse. A fragment of an upper stone was included in the stone paving in the “smithy” (cat. 84). Half a lower stone (cat. 81) was between the two identified trestles in the house, about 1 m from the eastern wall. Half an upper stone (cat. 83) was close to the partition wall in the south and half an upper stone (cat. 82) was in the SE entrance, where it probably ended up when the stone wall collapsed. The original catalogue erroneously lists a rectangular slab, 40 x 35 cm and 4 cm thick, with a small hole in the middle, as a fifth quern (S7405 z). Stones of this type are known to have served to protect the bellows during iron smelting and forging, and might be related to a primitive furnace discovered between the two houses.

Bucket-shaped potsherds and four *Buckelurne* sherds suggests the house dates to the late 5th and early 6th century, placing the house in the Migration period. The querns, however, due to their secondary positions, antedate the house.

3.27 Raunes, farm no. 102, Vindafjord k. Cat. 85

This quern find, the only case in Rogaland that does not derive from a settlement, was excavated in 1982 by Trond Løken in a boat-grave burial from the Viking period. The individual, probably a man, was laid to rest in a small boat 5 m long and 1.3 m wide that was inserted in the periphery of an older cairn containing a cremation from the Late Roman Iron Age or Migration period. The individual was equipped with an arrow head, sickle, whetstones and two knives. The quern (cat. 85), half a lower stone, was placed in the middle of the boat. The excavator suggested that the stone might have functioned as a ritual anchor, making the boat safe in the grave.

4. The Rotary Quern

Generalities

The hand-operated rotary quern or mill (fig. 31) was an indispensable device of early societies for grinding grains for gruel and bread. Its operation was also an essential part of the daily domestic routines. Mounted and operated by a single person, it is composed of two low, circular stones (an upper stone placed on a lower stone) measuring roughly between 35 and 45 cm in diameter. Compared to the earlier saddle quern, driven with a to-and-fro motion, and subject to continuous halts to feed and readjust the position of the grains, the sustained revolving motion of the rotary quern allowed an uninterrupted feed of grains, that through centrifugal force progressed between the grinding surfaces of the stones from the centre to the periphery, and exited the edges in the form of flour. The change from the to-and-fro motion to the rotary motion therefore significantly increased the yield of flour while decreasing the amount of time and labour. The rotary quern, therefore, amounts to a crucial step forward both in the history of milling - and as a precursor of the water-powered mill - the evolution of mechanics in general. In Norway, this apparatus was introduced in the first centuries after Christ during the Roman Iron Age.

The general morphology of rotary querns throughout Europe shows much variety. Based on their shape and cross-section, Rogaland querns can be divided into two major types. Hemispherical or dome-shaped stones suggest local exploitations splitting small rounded boulders collected on the surface. Erratic blocks are common features in Rogaland and so it is not surprising that the majority of the querns stored in the depository of the Museum of Archaeology (AM) are of this type. Stones with a cylindrical (or slightly trunco-conical) section, a minority among Rogaland mills, reveal an origin in extractive quarries where they were hewn directly from bedrock and produced and distributed on a large scale. In Norway, the most prominent quarries of this type of handmill are found in the municipality of Hyllestad in the county of Sogn og Fjordane, where garnet mica schist outcrops were exploited on a vast scale (Grenne *et al.* 2008; Heldal & Meyer 2011).

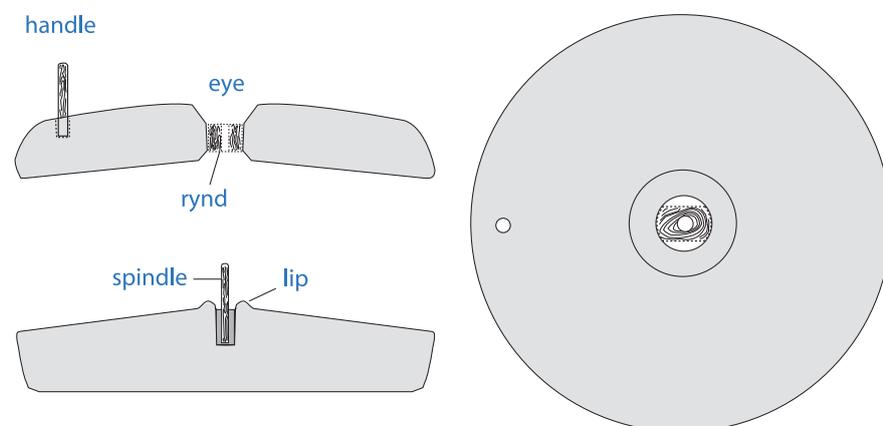


Fig. 31: Schematic representation of the rotary handmill (quern).

The upper stone, sometimes referred to as the “runner,” “rider” or *catillus* in Latin, has a downward-facing grinding surface and a funnel-shaped central perforation (eye) through which the grains are fed. The lower stone, which remains immobile, is known also as the “nether stone” or *meta* in Latin. It has an upward-facing grinding surface and usually a rough flattened base. Its centre is either partly perforated (i.e. “blind”) or totally perforated. This hole was designed to receive a vertical wooden or iron spindle. The two stones were assembled by means of the spindle projecting from the centre of the lower stone through the eye of the upper stone.

Driving fittings

Throughout Europe there is a large diversity in the fittings related to the assemblage and the means of driving rotary querns. The stones in the AM collection, as would be expected, conform to certain regional trends. Upper stones show evidence of two main types of handle fittings for the transmission of the driving force. The first is that of a vertical or inclined socket bored toward the outer edge of the upper surface of the upper stone (fig. 32a) intended for a handle, probably of wood (e.g. cat. 1, 11, 15, 19, 32, 49, 72, and 84). At times there is evidence of two handle sockets (cat. 3 and 76). In these cases the second socket is most likely a repair and not an indication of the simultaneous use of two handles.

A second major type of handle fitting is ironically inferred from the absence of any visible fitting on upper stones that nevertheless display clear signs of grinding wear. It is thus deduced that these stones were driven by means of vertical handles attached (by means of a loop?) to a strap or belt, probably of leather, securely fastened around the girth of the upper stone (fig. 32b). This type of feature leaves little or no trace on the stone and was recurrent at least in early, premedieval, milling mechanisms of southern Scandinavia (Bloch Jørgensen 1990, 2002). Over half of the upper stones of the Rogaland collection (cat. 9, 13, 16, 65, 67, 73, 78 and 85) abide by this type. The groove along the edge of cat. 37 might have been cut to lodge a strap. Iron belts, a fitting identified on occasion in France, Switzerland, and areas of the British Isles (Green 2011: 126, fig. 5h) that leave traces of corrosion around the girth, do not appear to have been adopted among Rogaland querns.

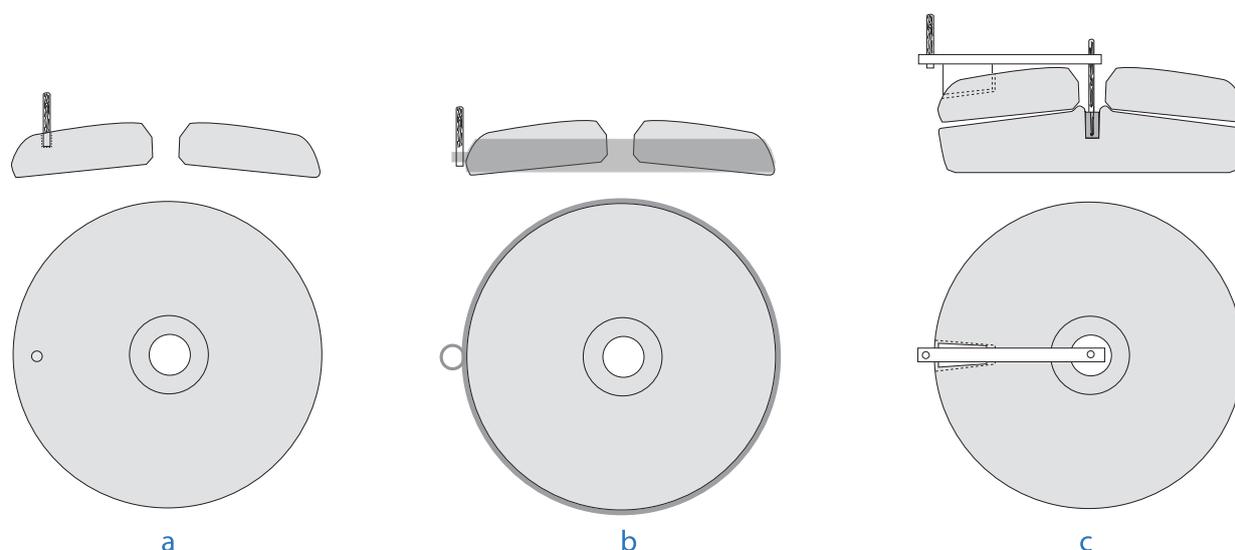


Fig. 32: Schematic representation of the rotary handmill driving fittings. a) vertical handle socket, b) “strap” type handle, c) radial slot handle.

A final type of handle fitting, the radial slot or cutting, is only present in a couple of cases (cat. 50 and 56) where it appears to have replaced a handle socket. This cutting suggests the presence of a horizontal crosspiece, inserted in the slot, stretching from the spindle across the radius of the stone, projecting beyond the edge of the upper stone, and ending with a vertical handle (fig. 32c). Although widespread elsewhere in Europe (e.g. Spain, France, Great Britain), this type of handle fitting is extremely rare in the AM collection and is not cited in the assemblages of Vorbasse and Nr. Snede (Bloch Jørgensen 1990).

Since the handle itself does not normally endure over time, its length is still an issue of speculation. It is generally assumed that the more primitive rotary handmills were equipped with short vertical or slightly inclined handles, just long enough to be grasped by the hand. A longer vertical rod, like the case proposed in two recent Scandinavian articles (Carelli & Kresten 1997: 111, fig. 2B; Bloch Jørgensen 2002: 192, fig. 6), possibly attached to the upper part of a wall or a beam of the ceiling, and benefiting from the force of torque, could have been adapted to certain Rogaland handmills. This long handle is illustrated in medieval manuscripts (Comet 1997: 80, fig. 3; Jodry 2011: 26, fig. 17) and known in Scandinavia in more recent times (Carelli & Kresten 1997: 112, fig. 4). Although the chronology of the different types of handle fittings in southern Scandinavia, as elsewhere, is still not resolved, it is plausible to assume that the long vertical rod was adopted in medieval times. There is still much work to be done on these technical aspects of transmission. For example, there is no evidence in the Rogaland collection of the more complex types of mechanisms documented by ethnographical work (that leave no trace in the archaeological record) such as the horizontal piston or connecting rod attached to the vertical handle that convert linear motion into rotary motion (Comet 1997: 80, fig. 1).

Rynd fittings

A second type of fitting that was widespread throughout Europe since at least Roman times was designed to ensure the assemblage and maintain the upper stone centred during rotation. This fitting, the rynd (cf. fig. 31), was a perforated box-like or bridge-like device of either wood or iron that was lodged in opposite cuttings adjacent to the eye on either on the top or the bottom of the upper stone. Among the Rogaland mills, however, rynd cuttings are extremely rare. Only one case (cat. 77), dating from a late context (16th century), clearly conforms to this type. It is thus evident that most of the early Rogaland rotary querns most likely were not fitted with rynds. Recent ethnographical studies, such as a project in Tunisia presented in the Bergen colloquium by N. Alonso from the University of Lleida, Spain, demonstrate that rotary querns can function satisfactorily without a rynd. The absence of this fitting, however, denotes that the upper stone will not remain snug and centred during rotation and that the space between the two stones, called the “light,” cannot be regulated to adjust the calibre of the flour, an aspect that will become fundamental in later watermill technology. This absence, however, does not exclude the prospect of other more crude fittings serving as “rynds” that did not require cuttings and leave no trace on the stone, such as a simple perforated block of wood inserted by pressure into the circular eye of the upper stone (Parton 2011: 38, fig. 27).

Dressing

Traditionally working surfaces of certain types of millstones were periodically dressed so as to “sharpen” their grinding surfaces. The dressing technique of the early handmills of Rogaland is limited for the most part to random pecking over the whole of the grinding surface (fig. 33a). This technique appears on over half of the Rogaland querns on both upper and lower stones and was probably even more widespread but has been erased by the intense weathering of the stone surfaces. This surface treatment suggests that the stones available in Rogaland were not abrasive enough and required pecking to function correctly. Pecking was most likely carried out with quartzite hammer-stones, an artefact known on settlements, and apparently not limited strictly to any specific period or stone type. An exception are the medieval garnet mica schists. These stones are naturally abrasive and did not require any particular type of dressing.

A more elaborate dressing technique is that of radiating linear furrows that not only provided the stone with more “bite”, but help guide the grains and flour toward the outside of the stone. These furrows, in certain cases, also helped prevent the stones from overheating. This technique (fig. 33b), limited to upper stones, is much less frequent than pecking in the AM collection. Only two querns bear single straight or curved furrows (cat. 18 and 37) and two display more complex star-shape pattern (cat. 8 and 10). Their number is too modest to deduce any chronological tendencies.

Fine concentric grooving, like the grooves or striations on vinyl records, a feature visible at times on certain querns (cat. 1, 2, 3, 34, 60, 74, 75 and 76), must not be confused with deliberate dressing. This feature is identified in metal-working contexts, such as Brandes-en-Oisans in France, and interpreted as wear resulting from grinding ore (Minvielle-Larousse & Bailly-Maître 2011). There is, however, no evidence that this type of work was carried out in Rogaland. These grooves are for the most part traces of wear produced by protruding crystals (such as garnet) that come into contact with the grinding surface of the opposite stone.

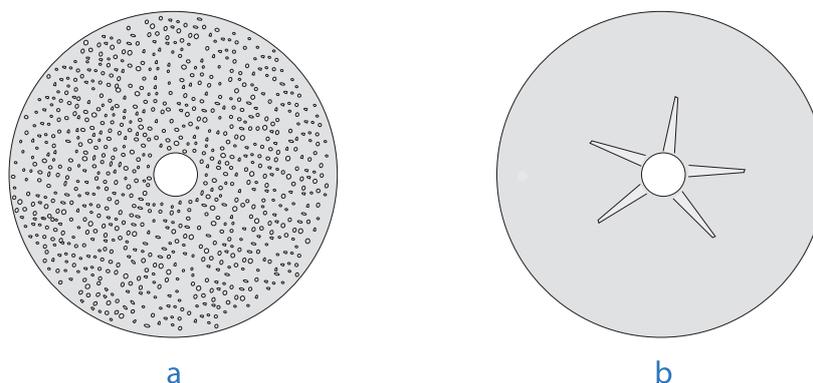


Fig. 33: Schematic representation of the two dressing techniques seen on Rogaland querns. a) random pecking of the grinding surface, b) radiating furrows.

Rotary handmill working position

A question that is still unsettled is the working position of rotary handmills, an activity that leaves little if no material remains on archaeological sites. It is generally accepted, based on ethnographical surveys, that the mechanism was placed on a flour “catcher,” a mat (of cloth or leather), and the miller sat with one or both legs outstretched with the quern placed between the thighs (Parton 2011: 39, fig. 31-32) (fig. 34). The point in time of the transition from grinding at floor level to grinding at a raised level on a table is still not established.

Grinding probably took place inside, near a hearth to take advantage of both light and warmth. The large lower stone left behind in House 1 at Birkeland (cf. fig. 12) is set along the longitudinal axis near a small hearth. This stone is so heavy that we can safely assume that this was its permanent position. Thick and heavy lower stones would probably have had a permanent working place, whereas thinner stones could be moved, such as presumably was the case of the complete hand mill from Sørbo (cat. 67-68). Lower stones with a permanent position suggest a permanent flour catcher. Since no traces of these “permanent” flour catchers have been identified, we must assume they were made of perishable material, such as wood or dried clay.



Fig. 34: Reconstruction of an ancient Norwegian milling scene. Drawing by T. J. Anderson and A. Pulido.

5. Rotary quern petrography

The main bedrock outcrops of Rogaland are Precambrian gneisses and granites (fig. 35). In the southeast, a large Precambrian complex of anorthosite and gabbro occurs, while phyllite and micaschist, locally garnetiferous, are found in the Stavanger area and northwards. Gneisses and granites are also contained in the Caledonian thrust nappes overlying the phyllites and micaschists.

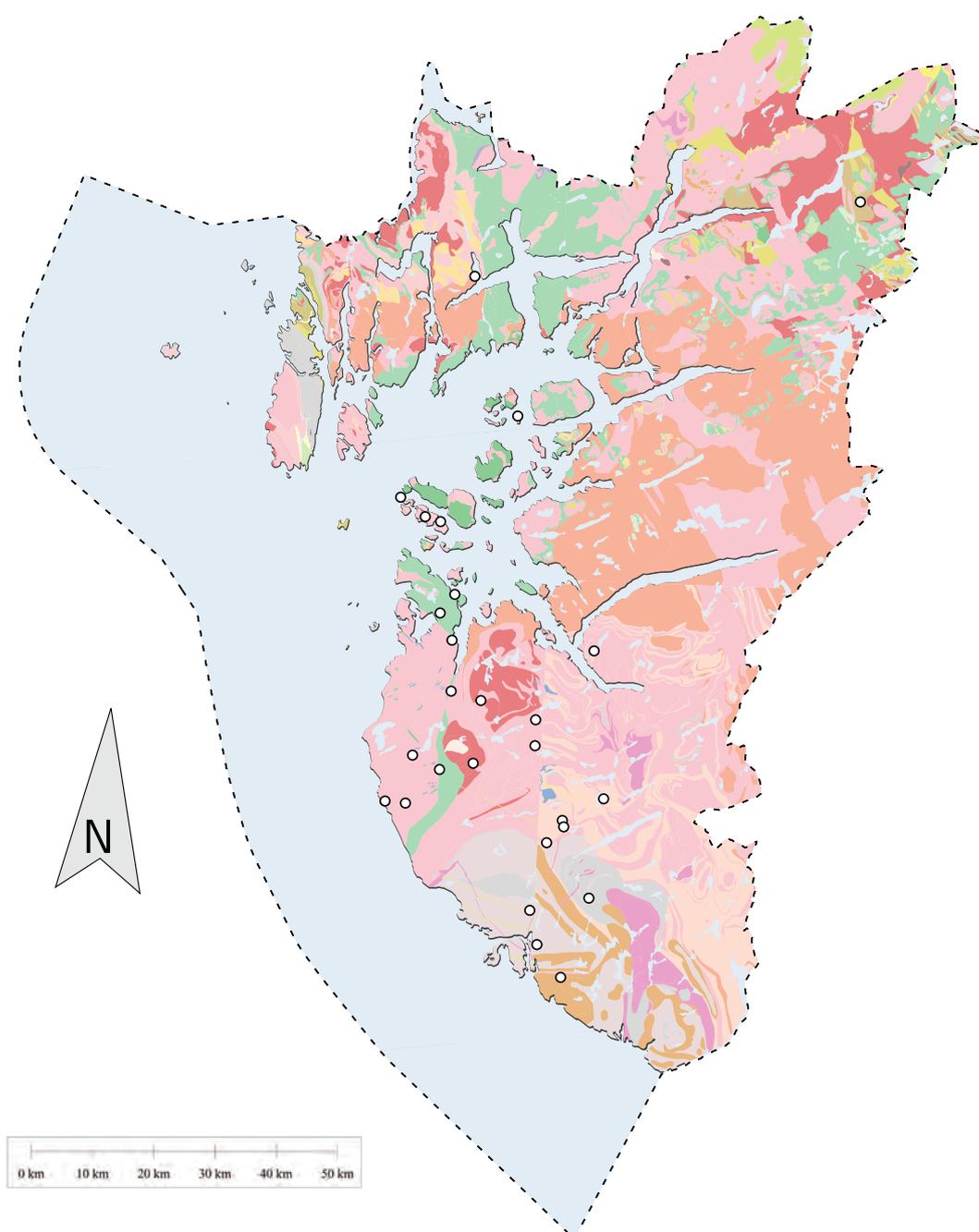


Fig. 35: Geological map of Rogaland. The sites referred to in this study are marked with white circles (cf. fig. 2). Map by NGU, adapted by Theo Gil (AM).

The lowland Jæren district along the western coastline (cf. fig. 1) is an area dominated by extensive Quaternary deposits, in particular moraine masses rich in erratic blocks. Jæren is one of the most fertile agricultural regions in Norway, and over time much energy has been invested in clearing the land of surface blocks to transform it into arable fields. The miles upon miles of handmade stone fences are silent witnesses to the toil of farm workers that preceded the mechanisation that started in earnest in the 1950s. In any case, there was certainly no lack of suitable surface blocks for ancient quern production (fig. 36).

A series of petrographic analyses of the querns from the prehistoric settlement of Ullandhaug were originally undertaken in the 1980s, by the late geologist J. M. Dahl of the Archaeological Museum in Stavanger. The results of her study were, unfortunately, only published in a popular, simplified form (Dahl 1986). A more elaborate, unpublished manuscript, cited in this present work, especially in the catalogue, is found in the Topographical archive of the AM. Dahl also undertook analyses of other Rogaland querns, but these were never published and preserved only as hand-written, unstructured notes. These analyses, however, were corroborated by the geologists in the Millstone Project, Tom Heldal, Gurli Meyer and Øystein J. Jansen and found to be largely precise. They show that Rogaland querns were hewn from a large variety of rocks (Table 1).

Apart from the medieval querns of garnet mica schist coming from the quarries of Hyllestad and Saltdal (Grenne *et al.* 2008), all quern stones identified in the AM collection are made of local rock types. In many cases they still preserve parts of their original cortex indicating that most of them were hewn from erratic blocks or boulders of suitable shape and size collected on the surface. These blocks, torn from Rogaland's bedrock, were rolled and rounded during their transport by glaciers during the Ice Age more than 12000 years ago.

 Sandstone	 Anorthosite
 Granite, granodiorite	 Charnockitic to anorthositic pluton, locally re-formed
 Monzonite, quartz monzonite	 Mylonite, phylonite
 Mangerite-syenite	 Amphibolite and mica schist
 Rhyolite, rhyodacite, dacite	 Greenstone, amphibolite
 Metabasalt	 Metasandstone, shale
 Volcanic rocks (unspecified)	 Quartzite
 Conglomerate, sedimentary breccia	 Mica gneiss, mica schist, metasandstone, amphibolite
 Mangerite to gabbro, gneiss and amphibolite	 Phyllite, schist
 Gabbro, amphibolite	 Marble
 Quartz diorite, tonalite, trondhjemite	 Shale, sandstone, limestone
 Breccia	 Dioritic to granitic gneiss, migmatite
 Dunite	 Augen gneiss, granite, foliated granite
 Eclogite	 Banded gneiss (amph., hbl.gneiss, mica gneiss), local migmatite



Fig. 36: Aerial photo taken from the west of the settlement of Hanabergshagen. The 1980 view shows the situation of the remains of the Early Iron Age buildings with the cattle track between the two parallel man-made stone fences (N-S) from the early 20th century. The cornfield to the upper left is surrounded by a more recent machine-made stone fence. Note the uncleared fields, littered with erratic blocks. The small red dots are cattle. Photo by Terje Tveit (AM).

In several instances, though, the querns seem to be hewn from slabs (cat. 25, 30, 31, 33, 35, 36, 37, 40, 42, 44, 61 and 65). Some of these querns are made of rock types that by natural processes can form slabs, such as the metamorphic gneisses, often mica gneiss (cat. 30, 31, 61 and 65).

It is more difficult to explain the “quarry” aspect of the three granite (cat. 33, 42 and 44) and two syenite querns (cat. 25 and 35), rocks that do not readily split into flat blocks by natural processes such as frost weathering. But the notion that querns were extracted directly from bedrock as early as the 5th century AD seems unlikely. Therefore the raw material put to use to fashion the majority of the rotary querns would appear, at least at this stage of the research, to be the outcome of natural processes. However, we cannot rule out the existence of true bedrock extraction exploitations since no systematic field surveys for prehistoric quern quarries have been undertaken outside of areas dominated by garnet mica schists.

The raw materials preferred by the quern makers were gneiss and mica gneiss, stones that were reasonably soft to work, but still hard enough to grind grain. These rocks also possess the advantage of splitting with relative ease. An accomplished quern maker surely had no trouble splitting a rounded block into halves, producing two quern rough-outs with even, flat surfaces that fit snugly together (such as cat. 67 and 68).

A smaller proportion of querns (14%) were made of granite. Although the total number of lower stones in the AM collection is proportionately lower than the number of upper stones, granite, at 25%, appears to have been more frequently chosen for lower stones. One granite example, cat. 51, is a large water-rolled boulder, fashioned by slicing off its top. The original shape of the boulder from which it was hewn can be clearly observed. This example weighs several hundred kilos and is by far the heaviest quern of the collection. Its thickness suggests that it potentially saw service for a very long time. It must have been quite a feat to roll this block over a distance of a few hundred metres from its source at a nearby beach to its place of use in the settlement.

*Table 1: Table of Rogaland querns by rock type and morphology. *The total sum of 60 upper and 24 lower stones is 84. The category of one (no 24), to attain the total of 85, could not be determined.*

Rock type	Number of stones (n)	Types Upper	n	Types Lower	n
Gneiss	20	I, IIa1, IIb, IIb1	13	1, 2	6
Mica gneiss	16	IIa, IIb, IIc	14	2a	2
Granite	12	IIa, IIb, IIc	6	1, 1a, 2	6
Garnet mica schist	11 (3 Hy, 4 Sa)	IIc1, III	8	3	3
Mica schist	5	IIb, IIc1	2	1, 2	3
Augengneiss	3	IIa, IIb	3		
Gabbro	3	IIa, IIb, ND	3		
Anorthosite	2	IIa, IIb	2		
Mica gneiss/schist	2	I, IIb	2		
Syenite	2	IIa	2		
Gneiss, granodioritic	2			1a, 2a	2
Granitic protomylonite	1	Roughout	1		
Granodioritic protomylonite	1	ND	1		
Gneiss, granitic	1			1a	1
Not determined*	4	ND, IIa	3	2	1
TOTAL	85		60		24

6. Rotary quern classification

Classification (fig. 37-40)

The classification of the Rogaland rotary handmills is largely based on the work of Bloch Jørgensen on the querns of the settlements of Vorbasse and Nr. Snede in Denmark (1990 and 2002). Bloch Jørgensen's work on early rotary querns is to date the only substantial research that has been carried out on this subject in Scandinavia.

Upper stones are divided into two main types: type I and II. Type I is thick and dome-shaped (in our terms hemispherical) with a relatively modest average diameter (c. 40 cm) and an average weight of 38 kg. Type II is thinner, generally flatter, with an average diameter of 45 cm and an average weight of 26 kg. Type II is further divided into three subtypes. Type IIa has a straight, or on occasion slightly curved, steep to perpendicular edge, and a marked transition to a flat or slightly convex upper surface. Type IIb has a curved or rounded slanting edge with a smooth transition to a convex upper surface (hence its epithet “doughnut”). Finally, type IIc has a short, rounded edge and a slightly marked transition to a slanting, slightly convex upper surface. Grinding surfaces are usually almost flat or slightly concave.

Although these divisions can be applied to the Rogaland querns (fig. 37), it has been necessary to add a subordinate category to each of type IIa-c (i.e. IIa1, IIb1 and IIc1) due to the presence of a handle socket, a feature that is absent from the Danish assemblages. For the Rogaland group we must also introduce a third type (type III) that pertains to upper stones originating in garnet mica schist quarries. These slightly larger rotary querns, hewn directly from bedrock, are very thin and have a regular circumference and an almost flat upper surface, with a marked passage between the upper surface and the edge. Their most remarkable feature is that it has both a vertical handle socket on the upper surface and rectangular rynd cuttings on the grinding surface. The number of type III querns among the Rogaland material is nonetheless too small and the stones too fragmented to allow further subdivision.

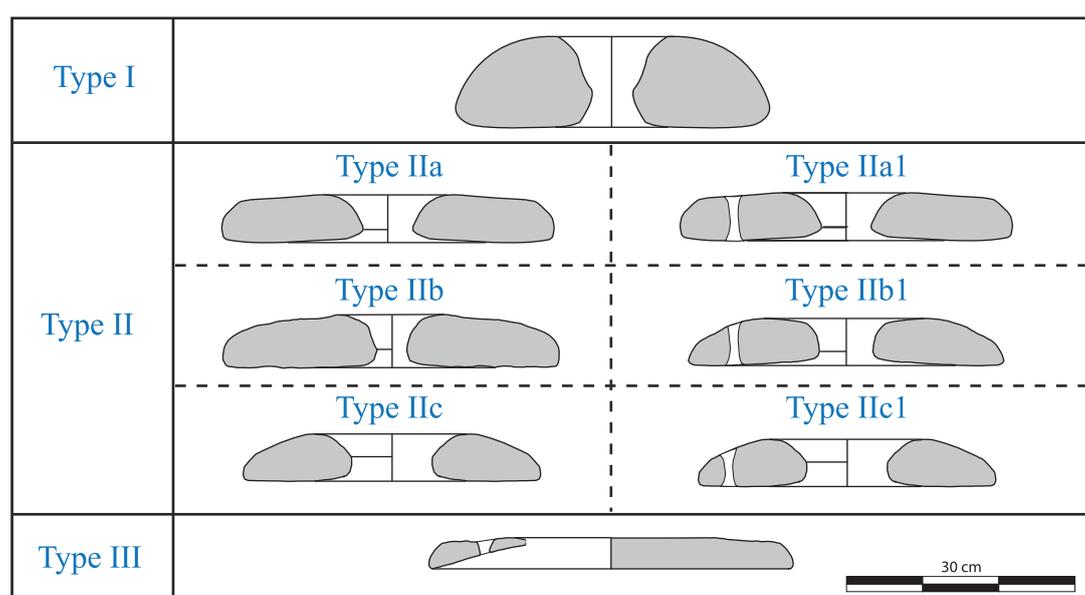


Fig. 37: Schema of the system of classification of the Rogaland upper stones.

Danish lower stones are divided by Bloch Jørgensen into only two types based not to their section, but on the shape of the grinding surface as seen from above. The first is the more conventional type with a circular grinding surface (originally type I and in this work is referred to as type 1). The grinding surface of the second type, on the contrary, has an oval shape (originally type II, in this work type 2). As evidenced from the traces of wear resulting from friction with the upper stone, the lower stone at times has a small lateral rim raised slightly above the grinding surface corresponding to the space beyond the diameter of the upper stone. Both types have flat to convex grinding surfaces and both have partially perforated (blind) eyes for the spindle. The bases of these lower stones are also very roughly knapped, if knapped at all, and most often reveal an origin as erratic blocks.

The Rogaland lower stones, however, present slightly more variety than those from Denmark (fig. 38). Although both of Bloch Jørgensen's types (circular and oval grinding surfaces) are present, the eyes of the Rogaland lower stones are most often totally perforated. We therefore propose to designate totally perforated lower stones with circular grinding surfaces as type 1a and, correspondingly, totally perforated lower stones with oval grinding surfaces as type 2a. A last type, labelled type 3 and numbering only three cases, corresponds to quarried garnet mica schist lower stones. This type has a convex grinding surface and is not divided into subtypes, since it invariably presents only circular-shaped grinding surfaces and totally perforated eyes.

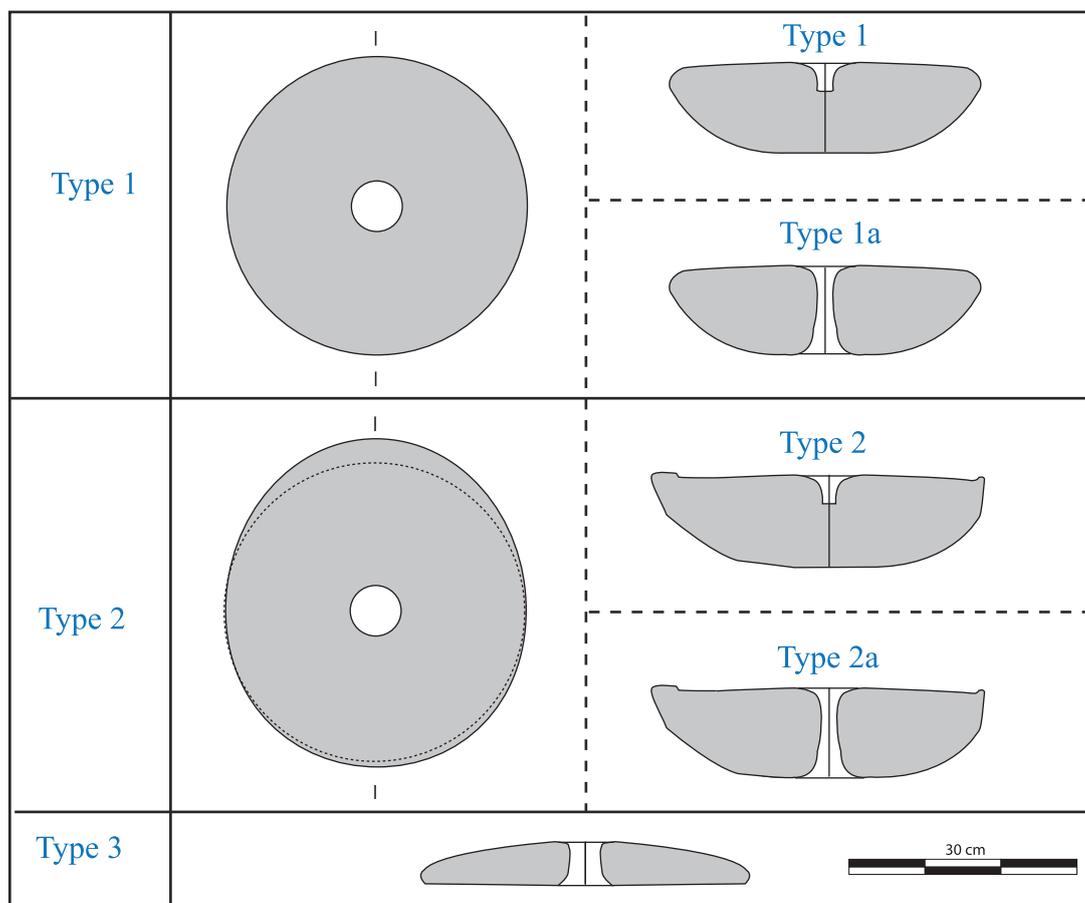
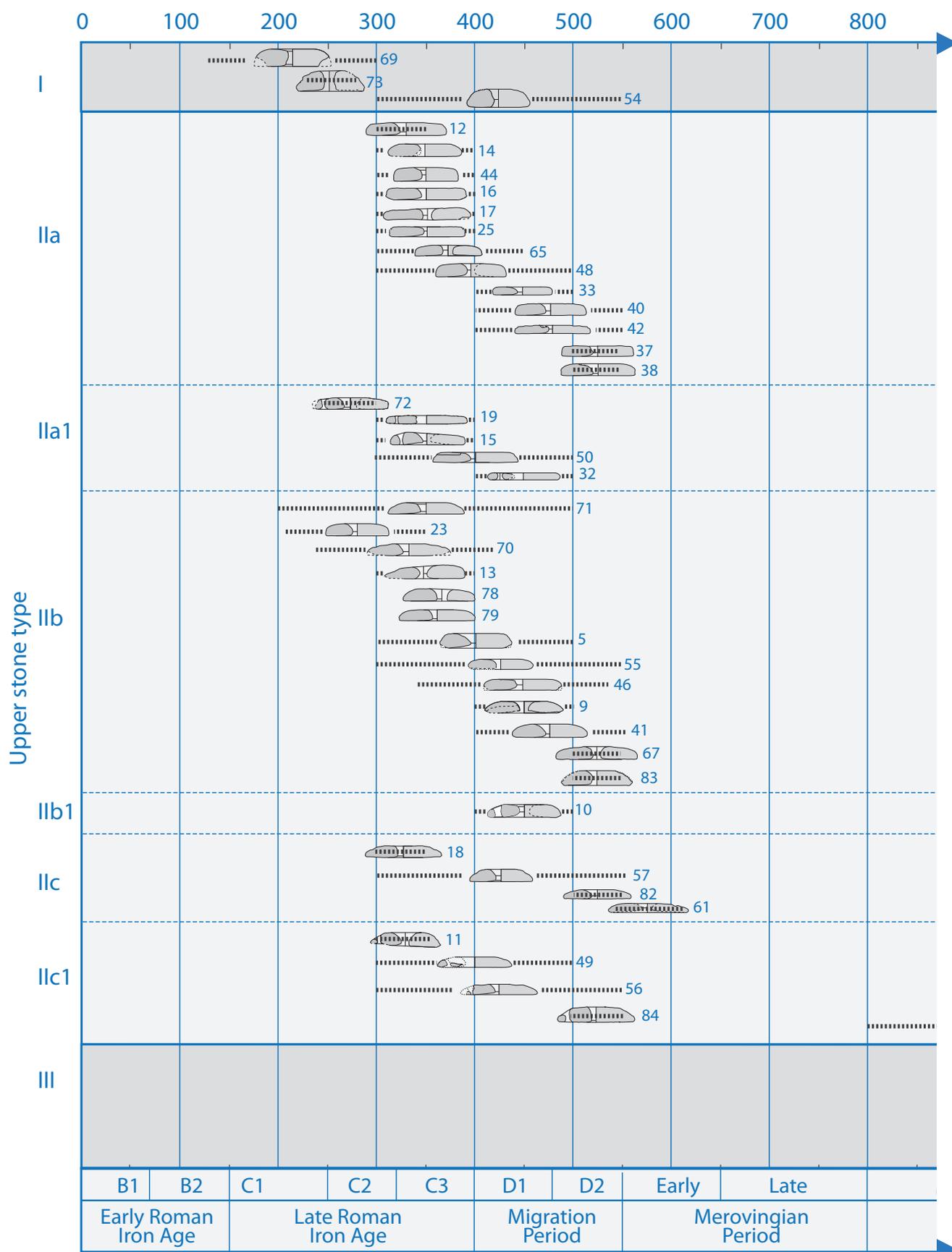


Fig. 38: Schema of the system of classification of the Rogaland lower stones.

The Norwegian Millstone Landscape



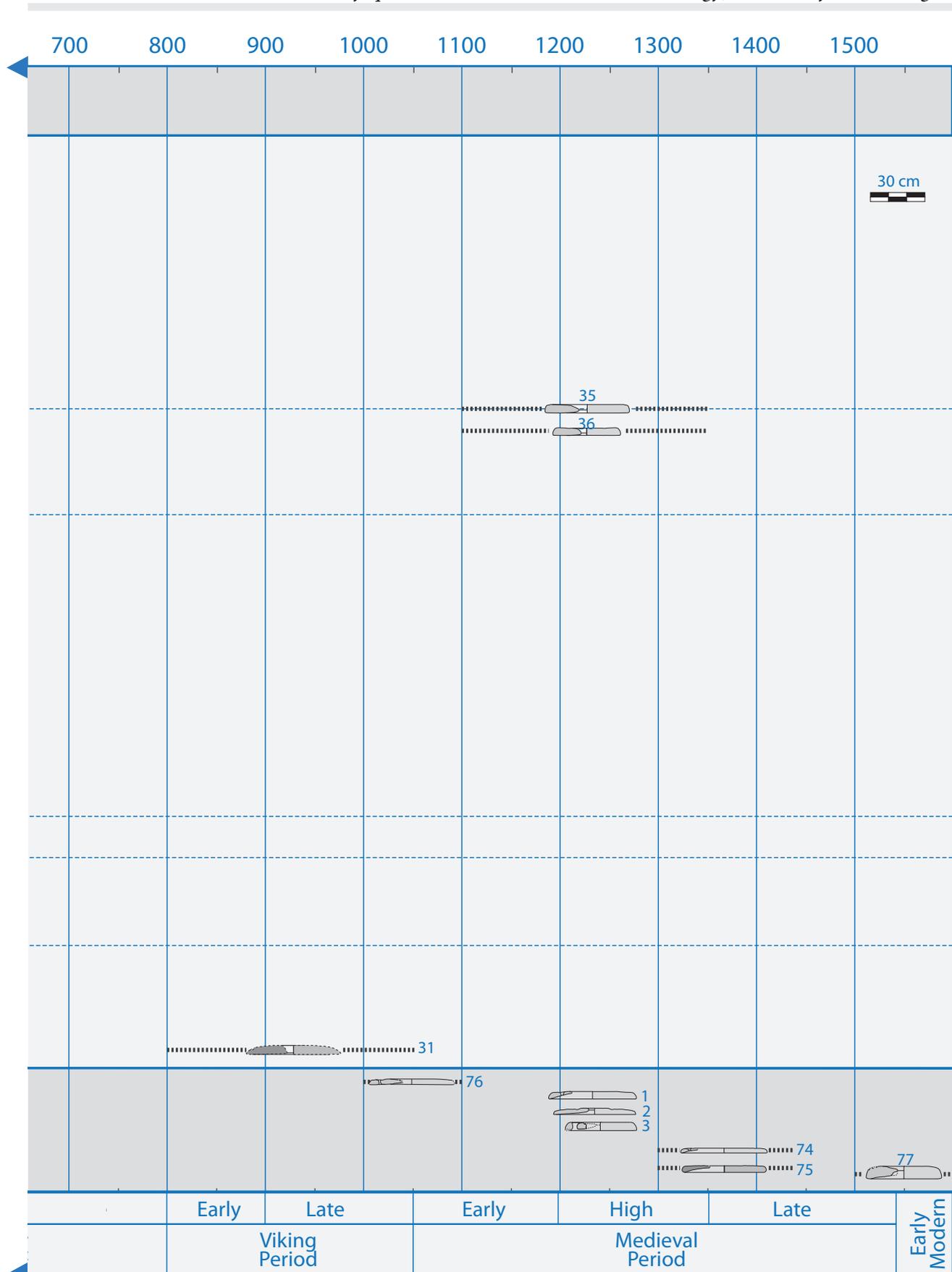
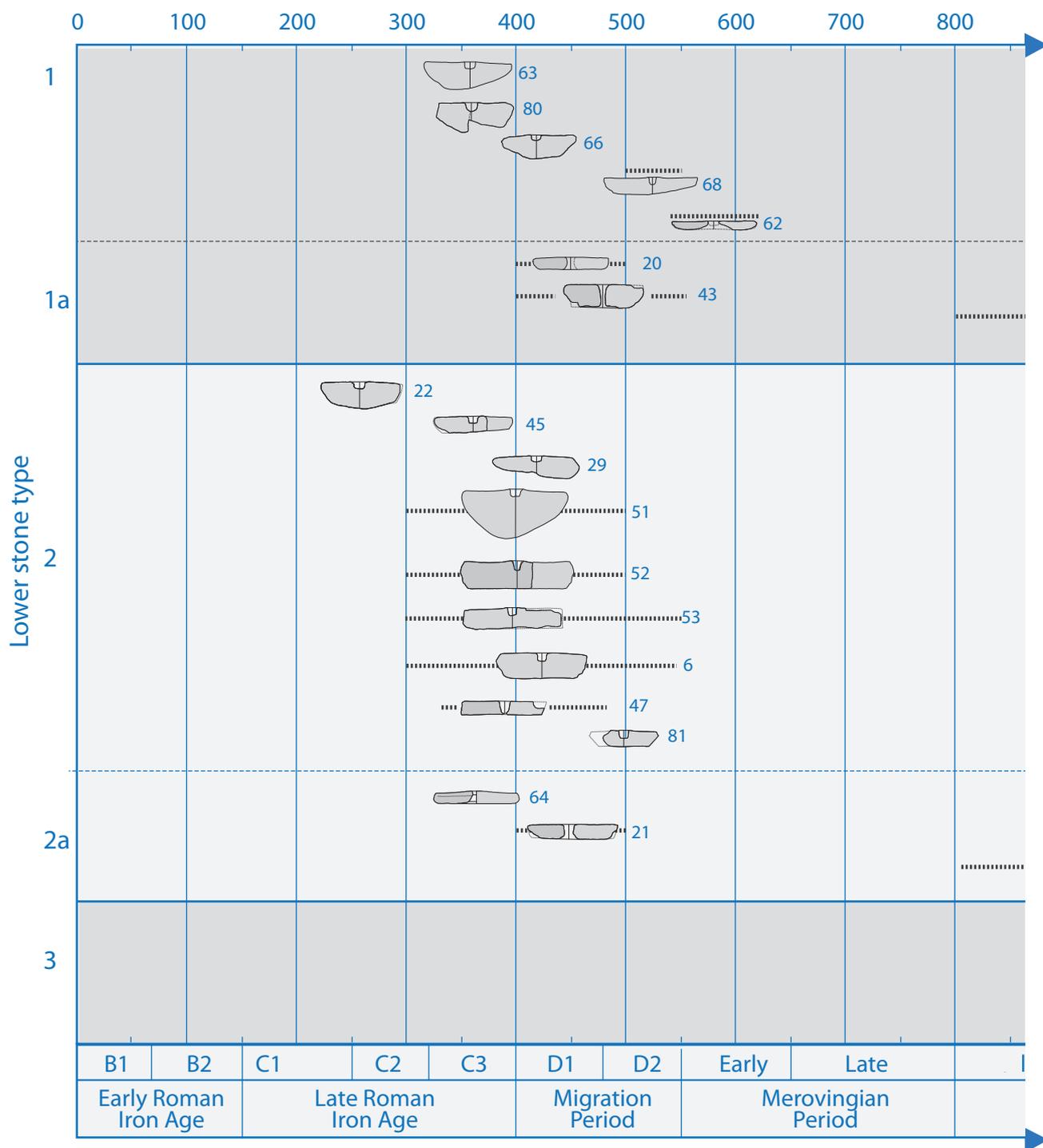


Fig. 39: Diachronic chart of the cross sections of the upper stones from Rogaland (AM, Stavanger) arranged by type and chronology. Illustration by T. J. Anderson.



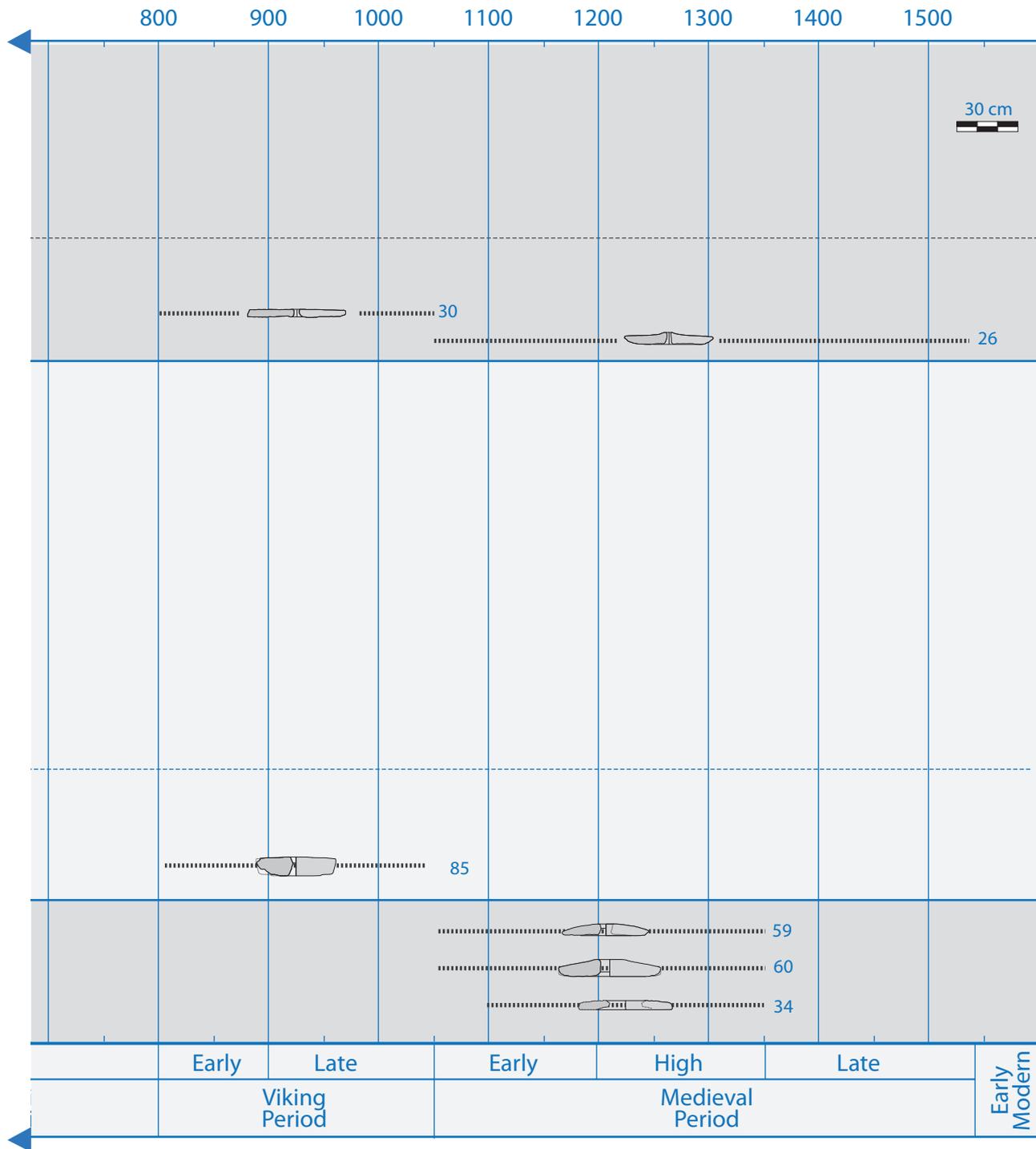


Fig. 40: Diachronic chart of the cross sections of the lower stones from Rogaland (AM, Stavanger) arranged by type and chronology. Illustration by T. J. Anderson.

Comparison between the Danish and Rogaland rotary querns (Table 2)

The upper stones of type I in Vorbasse vary in diameter ranging between 35 and 42 cm and thickness between 11 and 15 cm, with a thickness index (thickness in % of max. diameter) between 31.4 and 35.7 (Bloch Jørgensen 1990: 279). The diameter of stones from Nr. Snede range between 40 and 44 cm and a thickness between 13 and 16 cm, with a thickness index between 29.5 and 38 (Bloch Jørgensen 1990: 282). The stones from Rogaland ascribed to type I (cat. 54, 69 and 73) have a diameter ranging from 35 to 42 cm and a thickness between 9.6 and 11.5 cm, with a thickness index between 24 and 28. If we strictly apply Bloch Jørgensen's metrical criteria, then the "domed" type I would not exist among the Rogaland material. However, judging by the cross-section of the Rogaland stones, there is no doubt that the hemispherical type I is indeed present.

According to Bloch Jørgensen, type IIa is thicker than both types IIb and IIc, but not as thick as I. The diameter is the same as the IIb, but it is larger than I and IIc. Type IIb is as thick as IIc and IIc has a smaller average diameter than IIa and IIb, corresponding to the diameter of type I. Generally, the querns from Rogaland have a fairly large diameter range, with the smallest examples even smaller than the Danish types. They are also thinner than the Danish stones. (It can be noted that the type I querns in Vorbasse and Rogaland have the same diameter range, but the Rogaland ones are thinner, nowhere near the thickness index of the Vorbasse stones.) The reason for this difference of thickness is impossible to determine and is certainly not due to a shortage of available erratic blocs or a different level of technical advancement.

Table 2: Table of the ranges and averages of diameter, thickness and thickness index of the upper stones from the Danish assemblages of Vorbasse and Nr. Snede compared with the upper stones from Rogaland (highlighted).

Site and type	Number of stones	Range max. ø	Average max. ø	Range thickness	Average thickness	Range thickness index	Average thickness index
Vorbasse I	3	35-42	39.6	11-15	12.75	31.4-35.7	33.46
Nr Snede I	3	40-44	42	12-16	14.5	27.4-40	34.6
Rogaland I	3	35-42	39	9.6-11.5	10.3	24-27.38	26.46
Vorbasse IIa	14	42-52	46.8	6.5-11.5	9.4	13-24	19.8
Nr Snede IIa	6	38-50	45.3	5-14	9.2	13-27	21.7
Rogaland IIa	20	33-47	41.3	4-8.3	5.76	9.1-21.8	14.01
Vorbasse IIb	8	42-50	47.25	6-8.5	7.75	12-20.2	16.6
Nr Snede IIb	14	38-50	43.9	5-11	7.8	12.7-26.2	17.7
Rogaland IIb	14	38-46	42.32	4.4-7.3	6.5	11-17.8	15.9
Vorbasse IIc	2	38-46	42	5.9-7.3	7.7	19.7-21.1	20.4
Nr Snede IIc	2	36-42	39	5-10	8	16.7-19	17.85
Rogaland IIc	9	36-52	40.05	4.4-7.8	5.97	8.8-20	14.1

The classification of the Rogaland material is based solely on the cross-section of the querns and defies all metric definitions outlined by Bloch Jørgensen. However, when the relevant measures of the three assemblages are displayed in a scatter chart, no clear groups emerge, except for types I and II (fig. 41, 42 and 43). The subtypes IIa, IIb and IIc thus seem to be only relevant in the morphological sense. The results are identical regardless of whether the scatter charts are designed in function of the criteria of quern diameter and thickness (in cm), or diameter and thickness index.

The quern sub-types of Rogaland differ in size to an even lesser extent than the Danish querns. These morphological differences, however, provide information on the degree of work put into the fashioning of the stones and, to a certain extent, the original shape of the blocks used as raw material. The sub-type IIa indicates that the raw material was either a flat block or a slab, or that the quern maker worked the block extensively to achieve the flat upper surface. The type IIb, on the other hand, seems have been fashioned from rounded blocks, where little knapping was needed for the required shape. Type IIc also indicates extensive knapping of the original block. Although erratic blocks were abundant throughout the landscape, a considerable amount of time and energy was probably spent in finding blocks of the right size, shape and rock type.

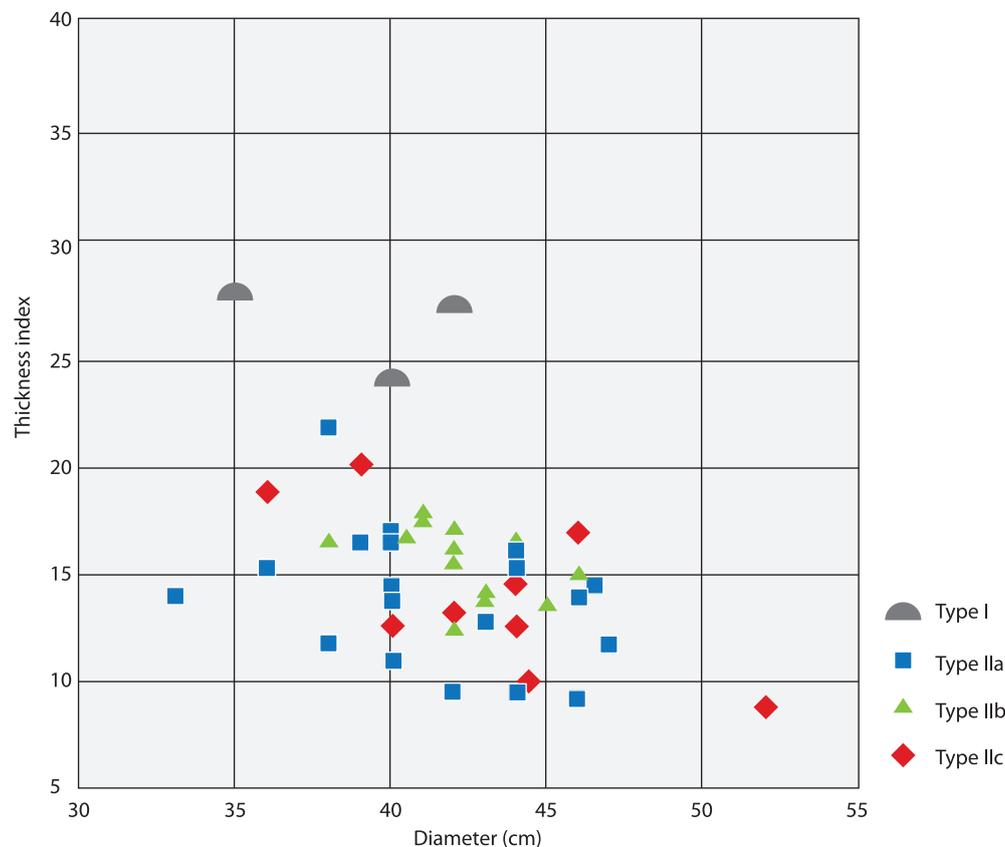


Fig. 41: Scatter chart of the Rogaland upper stones according to the criteria of type, thickness index (value), and diameter. (Type III is not included.)

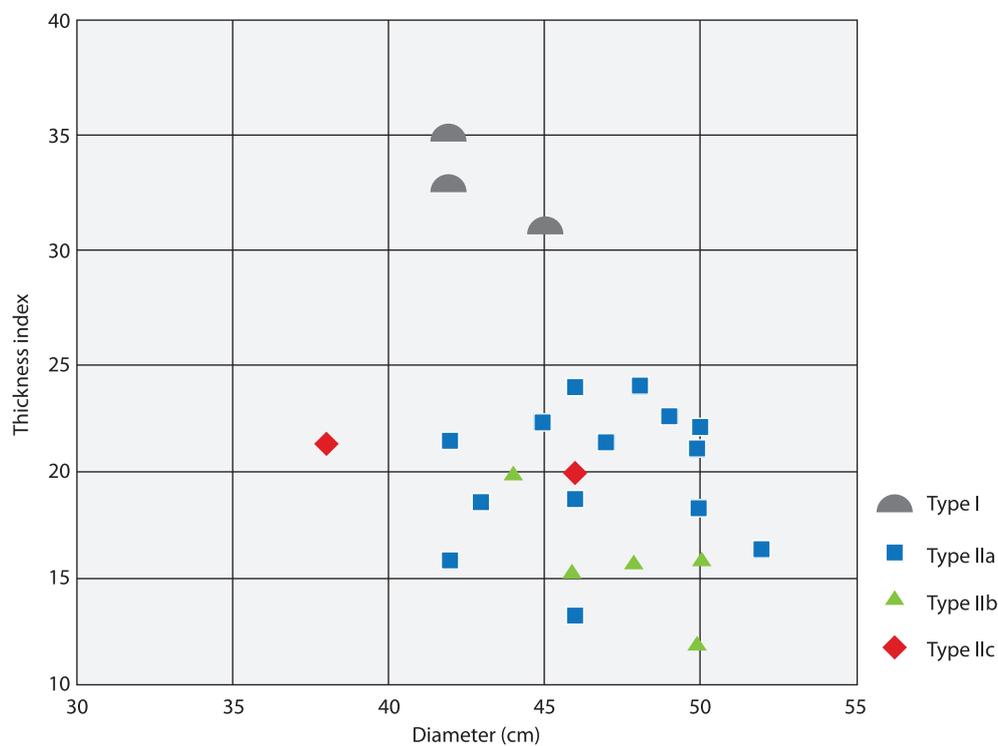


Fig. 42: Scatter chart of the Vorbasse (Denmark) upper stones according to the criteria of type, thickness index (value), and diameter.

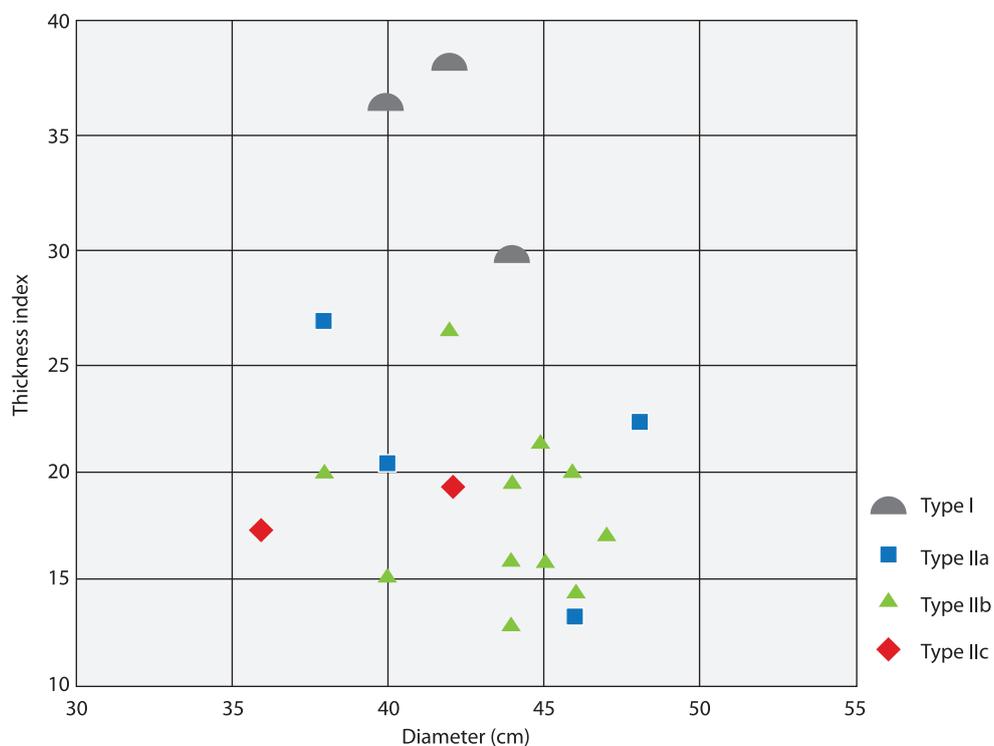


Fig. 43: Scatter chart of the Nr Snede (Denmark) upper stones according to the criteria of type, thickness index (value), and diameter.

7. Chronology

The rotary quern

Previous research based on the finds from Ullandhaug places the introduction of the rotary quern in Norway in the 4th century AD. An old find that could have corrected this notion has either been ignored or almost completely forgotten. In 1916, Jan Petersen published the cemetery of Store-Dal in Skjeberg (Petersen 1916). One of the graves, no. 47, was a richly furnished female grave from the Late Roman Iron Age, phase C3. The grave was covered by a cairn, and the top layer of stones contained no less than seven large fragments of rotary querns (that have since been misplaced). As these querns were fragments, and used as building material in the burial cairn, the introduction of the rotary quern must have taken place before c. 300 AD. Throughout our work on the catalogue of the rotary querns of Rogaland it has become evident that the rotary quern was introduced earlier than the finds from Ullandhaug would indicate. Although the number of querns from the site of Forsandmoen is modest (especially in comparison with Ullandhaug), this site is crucial to the understanding of the moment in time when the rotary quern was introduced. It is, however, necessary to keep in mind that the dates of the buildings of Forsandmoen are invariably *terminus ante quem* (*t.a.q.*), which means that whatever the date of the building, the querns are always older due to the fact that they are broken and re-used as building material in these constructions.

The ¹⁴C-datings presented in chapter 3 provide dates for the type I querns cat. 69 and 73. The quern fragment cat. 69 was found in a posthole belonging to the first phase of Building X, a feature with dating from 130-390 AD. Since the quern fragment was used in the construction of the building, the use of the quern for grinding antedates the building, and can be dated to the late 2nd or early 3rd century. The other type I quern (cat. 73) was found in relation with Buildings 156-158. One half of the quern was reused as base for a post in Building 157, dated to 250-530 AD. The other half was found in a posthole belonging to Building 158, dated to 240-430 AD. It is argued in chapter 3 that cat. 73 originally was associated with Building 156 and can be dated to the mid 3rd century. It would then seem that the introduction of the rotary quern in southwestern Norway can be placed in the late 2nd through the early 3rd century AD. The length of time that type I quern endured is not possible to establish with any degree of certainty. The reputedly youngest example of this type, cat. 54, comes from Hanabergshagen. This site, however, can only be roughly dated from 300 to 550 AD by means of its artefacts. Whether the ¹⁴C-dating of the small building (580-660 AD) can be associated to this particular quern fragment is doubtful.

The site of Forsandmoen has also yielded the oldest quern of a type IIa (cat. 72) in Building 180a. One of its two fragments was found in a posthole while the second was in a depression in the floor. The building in fact has two phases. The results of the stratigraphy and ¹⁴C-datings are somewhat contradictory in the case of this feature. The stratigraphically older Building 180a is dated by the radiocarbon method to 240-410 AD, whereas the stratigraphically younger Building 180b is dated to 80-320 AD. Sherds of 4th century bucket-shaped pots from the postholes of Building 180b also indicate that there is a conflict between the dating methods. Nevertheless, based on the bucket-shaped pottery finds, we can interpret that the quern saw service as part of a handmill in the 3rd century. Assuming that the quern belonged to the initial construction phase of the house, it must thus be older than the bucket-shaped pottery that was used in the house.

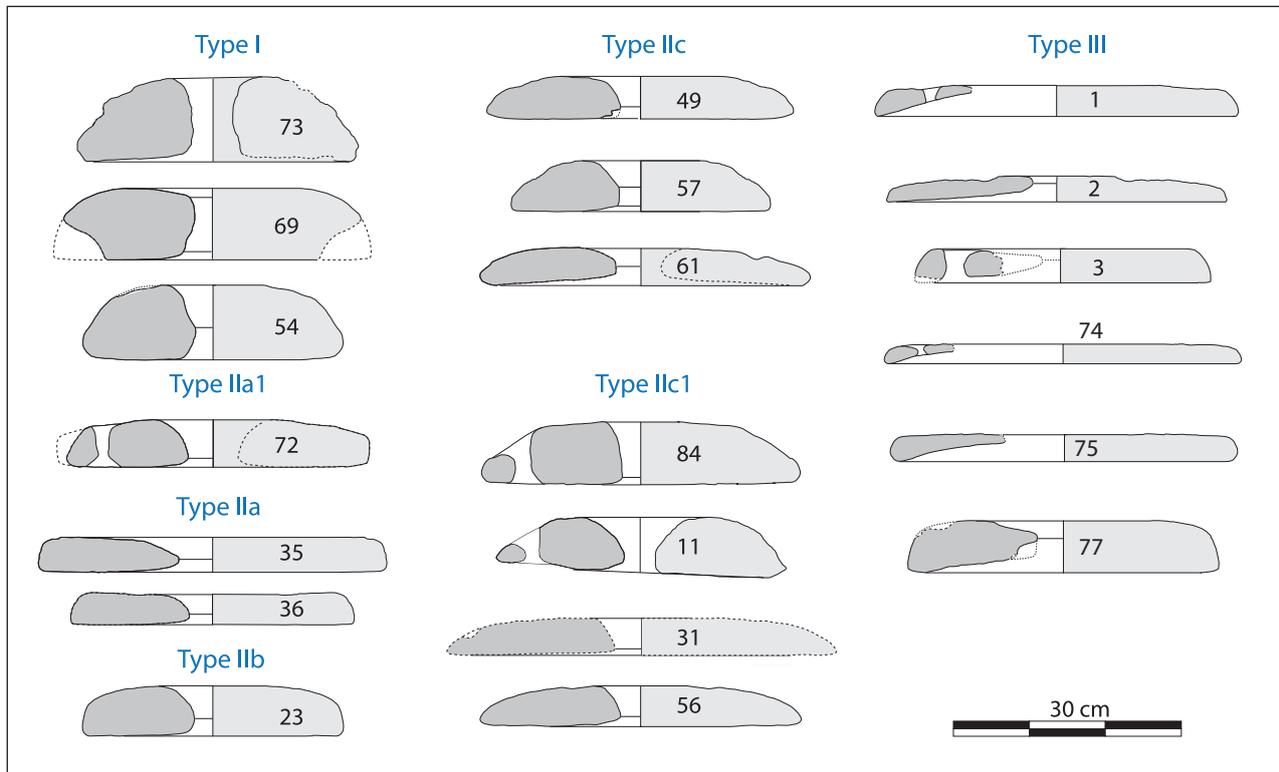


Fig. 44: Drawings of the cross sections of the upper stones cited in chapter 7.

Most of the type IIa querns date to the Early Iron Age. There are no cases that can be securely dated to the Late Iron Age, but then settlement sites from the Late Iron Age are very rare in the Rogaland area (cf. chapter 2). The youngest type IIa querns (cat. 35 and 36) were found in House 4 at Birkeland that dates to the Early and High Medieval Period. Whether this means that type IIa querns were still in use at that time is another matter, since they were broken and presumably re-used as building material (originating in the nearby remains of Migration Period buildings). So, in order to be very precise, we can state that type IIa quern fragments were available as building material as late as the Medieval Period, but we cannot with any certainty say that at that time they still served as grinding tools.

The oldest find of a type IIb quern comes from House 4/10 (cat. 23) at Gausel, and is dated by the excavator to 330-470 AD. The quern is a fragment found in a posthole. The interval it served for grinding, and not as building material, thus antedates the house, and can safely be set in the 3rd century. There are no type IIb quern finds in Late Iron Age or Medieval contexts, reinforcing the notion that this is an exclusively Early Iron Age type.

There are no ¹⁴C-datings that shed light on the earliest occurrence of type IIc. The seven querns (cat. 11, 31, 49, 56, 57, 61 and 84) of this type are related to both Early and Late Iron Age contexts; hence, the earliest possible date for the use of these querns antedates c. 300 AD (i.e. 3rd century), based on the conventional dating of phase 1 of House 1 at Ullandhaug. Whether this type saw service in the Medieval Period is open to question as there is only one find, a fragment in secondary position, known in Medieval context. Thus we have an identical “secondary” situation like that of the fragments of type IIa in that there is no evidence that they served for anything other than building material in the Medieval Period.

The small lot of querns of type III (cat. 1-3) from Skagen 3 in the heart of the city of Stavanger date exclusively to the Medieval Period. Their stratigraphical position corresponds to a pavement that is below, hence older, than the remains of a fire that is dated by texts to 1272 AD. The other querns of type III (cat. 74,75 and 77) are from even later contexts; the latest from the 16th century. With the material at hand, there is no hard evidence of a typological development of querns without handle sockets to querns with handle sockets. It is noteworthy that this fitting is not found on type I. The oldest stone with a handle socket, type IIa1 (cat. 72), is from the mid 3rd century, whereas type IIb1 (cat. 10) dates from the 5th century and the oldest type IIc1 (cat. 11) dates to the first half of the 4th century. But only 3 of the 11 complete upper stones belonging to type I and II have clearly-defined handle sockets, and of the 36 fragmented upper stones, only nine have handle sockets. So the overall proportion is very small. It does seem, however, that querns devoid of handle sockets did not persist into the Medieval Period, if we accept that the cat. 35 and 36 were recycled as building material.

There are no rotary querns in the AM collection that shed light on the question of the date of the introduction of rynds and their respective cuttings. To address this question we must first turn to the rotary hand quern from the celebrated Oseberg ship burial. This early 9th century quern has no rynd cuttings (Grieg 1928: 165, fig. 102). The numerous later mica schist Medieval querns stored in Norwegian museum collections do, however, clearly show rynd cuttings. So, some time in the lacuna of the Late Iron Age, the rynd and its respective cuttings were introduced in Norway.

The demise of the saddle quern

In the last decade it has generally been accepted that the earliest rotary querns are found in northeastern Iberia. Although it is well established that this new type was widespread about 450 BC, a few could even date to the end of the 6th or the beginning of the 5th century BC (Alonso 1999: 261-264). A recent article, based on radiocarbon datings, puts forward rotary querns in southern England that are as old as those in northeastern Iberia (Peacock & Cutler 2011: 77-80) implying that the technology could have sprung in different places at different times.

The introduction of rotary querns in southern Scandinavia is still blurry. Among the buildings dating to the first centuries BC at the Rogaland site of Forsandmoen there are only saddle querns - no rotary handmills. In Denmark, for example, the oldest rotary quern from Vorbasse is found together with pottery belonging to the Jutish ceramic group a, dated to c. 150-180 AD (Bloch Jørgensen 1990: 48) clearly indicating that the technology was introduced several centuries later, when the technology was well spread throughout the Roman Empire. Furthermore, it is logical to assume that the much more efficient technology of the rotary quern would have rendered obsolete and eclipsed the less efficient saddle quern.

The recent contention that Rogaland saddle querns and rotary querns were contemporary (Prøsch-Danielsen & Soltvedt 2011) is probably based on a misinterpretation of the archaeological material. The discovery of both types of querns on the same site cannot be considered as evidence that the two mill types saw service at the same time. On these sites saddle querns are always fragmented and in secondary position. Furthermore, they hail from contexts where there is always unequivocal evidence of earlier occupations, corroborated either in the form of radiocarbon datings (such as Ullandhaug), archaeological artefacts (such as Krågeland and Auglend) and/or features clearly linked to older settlement phases (such as Skeie). It is also worth citing (though *ex silentio* with all its flaws) that on “clean” sites with no evidence of prior occupations (such as Birkeland, Houses 1 and 2), there are no traces of saddle querns.

8. Conclusions

This study of early rotary querns assembled in the Museum of Archaeology sheds new light on this type of handmill in southwestern Norway. It has been demonstrated, contrary to common assumption, that the rotary quern was introduced in Rogaland in the late 2nd or early 3rd century AD. The introduction of this type of handmill coincides in part with a stage of agricultural development when the main crop shifted from naked barley to hulled barley and oats, a process that seems to have begun early in the 1st century AD (Prøsch-Danielsen & Soltvedt 2011: 153, fig. 15). There is probably no direct causality, since hulled barley also was cultivated in both the Bronze Age and Pre-Roman Period. The rotary quern, however, is a much more efficient grinding apparatus than a saddle quern, hence less time was need to grind the required amount of flour for daily consumption. Practical experiments have shown that it takes about 13 minutes (at the very slow rate of 14 revolutions per minute) to grind 1 kg of dried wheat into smaller grains of uneven size (Bloch Jørgensen 1991: 100). Hulled barley grains, where the grain and the awn is difficult to separate, no longer pose a problem, as the rotary quern easily could remove the awn in an initial, coarse grinding process. In the same experiment this process took 10 minutes at 19 rpm with one kg of barley. The husk was then easily removed by sifting.

The transition from saddle quern to rotary quern seems to have taken place quite rapidly and thoroughly. Within a generation or two the saddle quern, with its to-and-fro motion, was probably obsolete. It seems to have only lingered on in settlements mostly in a fragmented state and in secondary position as building material.

Three main types and several sub-types of rotary querns have been identified in this study, following the morphological classification established by Bloch Jørgensen (1990, 2002) for querns from two prehistoric sites in Denmark. It was possible to show a certain temporal difference between the types: type I appears to be the oldest, subtype IIa slightly younger, and type IIb restricted to the Late Roman and Migration Periods. Type IIc comes across as the only type that persists through to the Late Iron Age. The long-term general morphological trend is for the thickness of upper stones to decrease. However, there is no indication of a change of diameter. Larger models attributed to water-powered mills, a type of millstone absent in the AM collection, will not be introduced into this area of Norway until much later in the late 12th - early 13th century. The first written record mentioning a water mill is from 1209 (Ek 1964).

Although handles sockets are absent on the examples of type I, they are present on all the sub-types II. However, it is not possible to discern any chronological difference between querns fitted or not fitted with handle sockets.

A feature that never appears on the Early Iron Age querns of the AM collection are rynds. The few cases equipped with these fittings (on the grinding surface of upper stones) are intimately associated with garnet mica schists quarried in the Medieval Period. It therefore appears that this feature, essential for medieval handmills and water-powered mills, was not required for the early quern stones. We must therefore assume that even if the grains themselves played the role of “ball bearings” to keep the stones from touching each other, a certain amount of friction could not be avoided. The flour must have contained grit that would have had an adverse effect on the teeth of the population.

A large part of the querns, with the exception of the later garnet mica schist querns, are dressed by means of random pecking over the whole of the grinding surface. This appears to indicate that the stones were not naturally abrasive enough and required sharpening.

The raw material used for the Early Iron Age querns is that of local rocks, usually in the form of erratic, rounded boulders collected on the surface. A second less frequent option for the quern makers was that of fashioning querns from naturally formed slabs. These two forms of rock suggest two different methods of working the stone. A rounded boulder was split in two roughly equal parts. Exterior non-working surfaces (cortex) were usually pecked, although these mills could have functioned perfectly without this surface treatment. A slab, on the other hand, required a large investment of labour to fashion the stone, in particular if it had first to be cut from the slab in the same manner as if it was hewn from bedrock.

The vast maritime trade network of mica schist querns produced on a large scale in quarries around Hyllestad in the county of Sogn og Fjordane about 250 km to the north (as the crow flies) and in Saltdal, in the district of Salten, over 1000 km further north, is restricted, as expected from the results of studies of these areas (Grenne *et al.* 2008), to the Medieval period. These querns stand apart from the local material not only by their characteristic petrography, but by their morphology (Types III and 3). Hyllestad products are represented in the AM collection by cat. 2,3 and possibly 76 while the distant Saltdal imports are seen through cat. 1, 59, 60, and 77.

In the first few centuries after Christ throughout Central and Mediterranean Europe, hand operated querns of vesicular lava were produced on a massive scale in different volcanic districts of the Roman Empire and often traded over very long distances. It is worth noting that these lava products are absent in both Norwegian and Danish collections during Roman times. In the later Viking period lava querns, probably from quarries in the Eifel in Germany, arrived on settlements such as the Danish site of Vorbasse (Bloch Jørgensen 1990: 53). However, such finds are not known from Norway.

Concerning the more sophisticated means of driving mills, due to the absence of any relevant data, we cannot comment on the question of the introduction of long vertical levers or rods attached to walls or ceilings and placed on tables or workbenches such as those described by Carelli and Kresten (1997) and Comet (1997). This innovation unfortunately leaves little or no material evidence on archaeological sites.

Furthermore, of all the different mills that are driven by rotary movement, the AM collection possesses only hand-operated querns. We therefore cannot cast light on the question of the introduction of hydraulic power as a driving force for mills in southwestern Norway, except that, contrary to the case in Roman Central and Southern Europe at the turn of the first millennium, this intricate driving force appears to not yet to be adopted from what we can gather from the approximately 26 settlements presented in this work. In passing, let us also note that, as expected, the production of staurolite biotite schist handmills and water millstones from the remote Selbu region in Central Norway that dominated the Norwegian market the last few centuries since about 1600 is also not represented in the AM collection, except for one fragmented handmill stray find (not included in this catalogue).

9. Bibliography

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10. Table of radiocarbon datings

Lab.ref.	Site	Feature	Uncalibrated date BP	Calibrated date (2σ)	Calibrated date (1σ)	Material
T-677	3.2 Ullandhaug house 1	fire stratum	1840+/-90	AD-410 AD	70-320 AD	charcoal (unspecified)
T-678	3.2 Ullandhaug house 2	fire stratum	1540+/-70	380-660 AD	430-600 AD	charcoal (unspecified)
T-2250	3.2 Ullandhaug house 2	central hearth	1480+/-70	420-670 AD	470-660 AD	charcoal (unspecified)
T-679	3.2 Ullandhaug house 3	fire stratum	1630+/-80	240-610 AD	260-540 AD	charcoal (unspecified)
T-2251	3.2 Ullandhaug house 3	hearth 3	1570+/-70	340-640 AD	410-570 AD	charcoal (unspecified)
T-2252	3.2 Ullandhaug house 3	hearth 4	2020+/-80	350 BC- 250 AD	150 BC- 70 AD	charcoal (unspecified)
T-2253	3.2 Ullandhaug house 3	hearth 9	1800+/-70	70-400 AD	120- 330 AD	charcoal (unspecified)
TuA-2552	3.3 Gausel house 4/10	posthole 1481	1700+/-70	130-540 AD	250-430 AD	seed
Beta 364740	3.5 Auglend	S5051u, pot 2	1460+/-30	550-650 AD	580-640 AD	food residue
T-12523	3.11 Høgevollen	hearth 1A314	1645+/-60	240-560 AD	330-540 AD*	<i>betula/corylus/ sorbus</i>
T-12528	3.11 Høgevollen	hearth 1A313	1660+/-65	230-550 AD	250-530 AD	<i>betula</i>
Beta 364743	3.13 Hana-bergshagen	post (fnr.9)	1430+/-30	580-660 AD	540-600 AD	<i>betula</i>
Beta 364738	3.14 Lyngaland	hearth a	1500+/-30	540-620 AD	540-600 AD	<i>betula</i>
Beta 364739	3.14 Lyngaland	hearth v	1560+/-30	420-570 AD	430-540 AD	<i>corylus</i>
Beta 364741	3.16 Fosse	central hearth	1500+/-30	540-620 AD	540-600 AD	<i>alnus</i>
T-?	3.19 Espeland	fire stratum	1540+/-70	380-660 AD	430-600 AD	charcoal (unspecified)
T-?	3.19 Espeland	central hearth	1690+/-70	130-540 AD	250-430 AD	charcoal (unspecified)
Ua-40098	3.20 Sørbo	profile sample	1559+/-30	420-600 AD	430-540 AD	oat grain
Ua-40099	3.20 Sørbo	hearth 12448	1530+/-30	430-610 AD	430-600 AD	<i>alnus</i>
T-5903	3.21 Forsand Building 10a	hearth /10	1760+/-70	80-430 AD	130-390 AD	<i>betula/alnus</i>
T-9505	3.21 Forsand Building 180b	hearth /70	1825+/-70	50-390 AD	80-320 AD	<i>betula</i>
T-5905	3.21 Forsand Building 16a	hearth /21	1710+/-70	130-540 AD	240-420 AD	<i>betula</i>

Rotary querns in the Museum of Archaeology, University of Stavanger

Lab.ref.	Site	Feature	Uncalibrated date BP	Calibrated date (2σ)	Calibrated date (1σ)	Material
T-9509	3.21 Forsand Building 180a	hearth /72	1720+/-65	130-440 AD	240-410 AD	<i>betula/alnus</i>
T-8716	3.21 Forsand Building 155	hearth /31	1820+/-80	20-400 AD	80-390 AD	<i>betula/alnus</i>
T-8692	3.21 Forsand Building 156	hearth /24	1760+/-70	80-430 AD	130-390 AD	<i>betula/alnus</i>
T-8694	3.21 Forsand Building 158	hearth /30	1705+/-80	130-540 AD	240-430 AD	<i>betula/alnus</i>
T- 8714	3.21 Forsand Building 157	hearth /31	1670+/-75	210-570 AD	250-530 AD	<i>betula/alnus</i>
T-2421	3.22 Håvestøl	cultural layer	540+/-80	1280-1510 AD	1300-1440 AD	charcoal (unspecified)

Laboratories:

T (conventional) and TuA (AMS) - Laboratoriet for radiologisk datering, NTNU, Trondheim

Ua (AMS) – Ångströmlaboratoriet, Uppsala University

Beta (AMS) – Beta Analytic, Inc., Miami, Florida

Confidence:

Beta: 2 σ 98%, 1 σ 68%

All other dates are calibrated with OxCal 3.9: 2 σ 95.4% confidence, 1 σ 68.2% confidence

*64.2% confidence

11. Catalogue of the rotary querns

The following catalogue presents 85 rotary querns deposited in the Museum of Archaeology, Stavanger, Norway. It is a selection of the 142 rotary querns in the Museum that come from reasonably secure archaeological contexts. Prehistoric saddle querns, driven with a to-and-from motion, although mentioned at times in the text, are not included in this catalogue. The remaining 56 rotary quern (stray finds from unknown contexts) currently stored in the depository are also not included in this catalogue.

The catalogue is structured following a geographical order. The first 24 entries are from the urban municipality of Stavanger, while the rest are arranged from south to north (cf. fig. 2). Each entry to the catalogue is composed of a table of two columns of museological data (inv. number, provenance, site name) and descriptive data (no. of fragments, dimensions, petrography, classification).

This data is derived from a form that was designed in the framework of the Millstone Landscape Project (Hauken & Anderson 2014).

The fields are for the most part self-explanatory. The specific field “Index t % of max. diam.” corresponds to a value expressed in percentage resulting from the following formula (thickness in cm x 100 / diameter in cm). The field “rib” pertains to a convex circular feature (or features) on the upper surface of upper stones formed by a channel or channels. It is not a functional feature and should not be confused with the dressing technique of furrowing or the grooving resulting from natural wear.

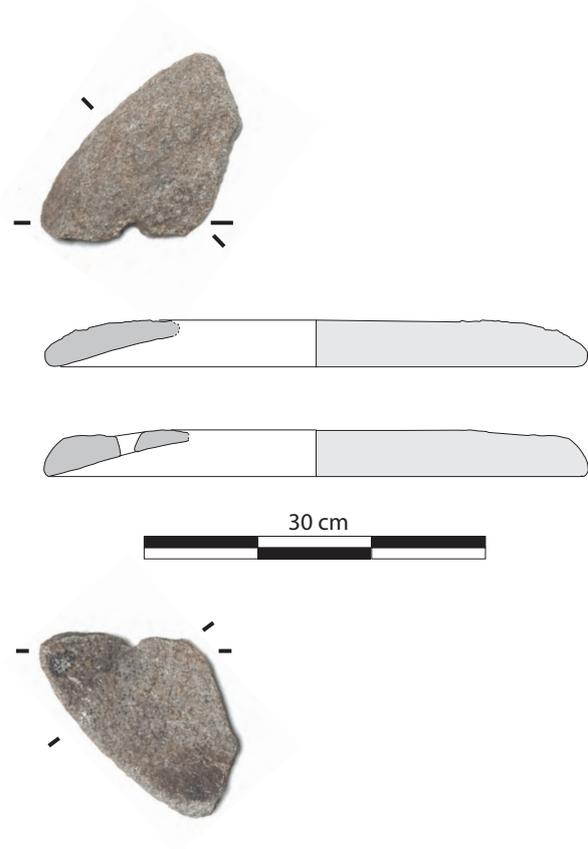
The entries also have drawings of the cross-sections and photographs of the upper and lower surfaces. Each entry is completed with brief information describing the quern, its context, its dating and the relevant bibliography.

Principal abbreviations used in the catalogue

AM	Museum of Archaeology, University of Stavanger
AmS	Former initials of the Museum of Archaeology, University of Stavanger
MP	Millstone Landscape Project represented by Gurli B. Meyer, Øystein J. Jansen and Tom Heldal.
AKM	Ann K. Meeks, Museum of Archaeology, University of Stavanger
JMD	Johanne Margrete Dahl (AmS)
Cat.	Catalogue number
Fnr.	Find number (original site number)
<i>T.a.q.</i>	<i>Terminus ante quem</i>

Cat. no. 1

Inv. number:	S9454 IX g 1
Provenance:	Bergjeland, farm no. 55, Stavanger k.
Site name:	Skagen 3
% preserved:	10
No. of fragments:	1
Max diameter (cm):	48
Total height (cm):	4.2
Thickness (cm):	2.7
Index t % of max. diam.:	5.6
Circumference:	Regular
Contour (edge):	Curved convergent
Grinding surface, shape:	Concave
Grinding surface:	Used
Category:	Upper stone
Upper surface:	Flat
Eye:	Not preserved
Handle socket:	Vertical
Number of handle sockets:	1
Handle socket, diameter (cm):	2.6
Rynd slots:	Not determinable
Rib:	Not determinable
Dressing:	No dressing
Grinding surf., height (cm):	Not determinable
Origin:	Quarry
Rock type:	Garnet mica schist, Saltdal (MP)
Quern type:	RQ-U III



Description: Very worn edge fragment with totally perforated handle socket. Concentric traces of wear on grinding surface. No eye preserved.

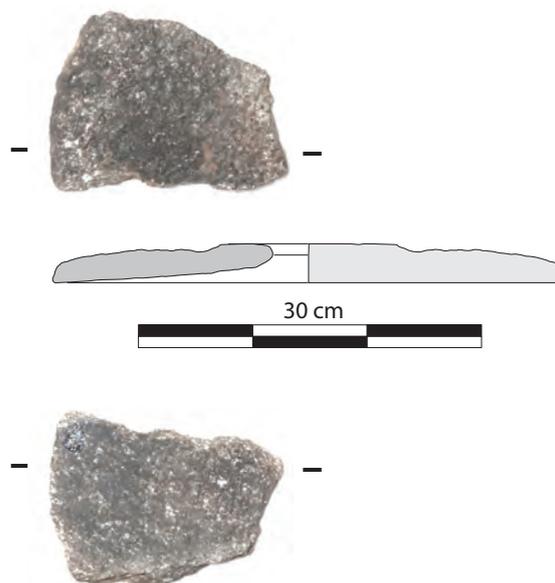
Context: Found in paved area (backyard or alley?) of a warehouse destroyed by fire. The warehouse probably belonged to a building facing the water front in the innermost area of the Vågen Bay.

Dating: High Medieval Period, *t.a.q.* 1272 AD.

Bibliography: Lillehammer 1969, 1970.

Cat. no. 2

Inv. number:	S9454 IX g 2
Provenance:	Bergjeland farm no. 55, Stavanger k.
Site name:	Skagen 3
% preserved:	20
No. of fragments:	1
Max diameter (cm):	45
Total height (cm):	3.3
Rim height (cm):	2
Thickness (cm):	2.3
Index t % of max. diam.:	5.1
Circumference:	Regular
Contour (edge):	Curved convergent
Grinding surface, shape:	Concave
Grinding surface:	Used
Category:	Upper stone
Upper surface:	Flat
Eye upper stone:	Not preserved
Handle socket:	Not determinable
Rynd slots:	Not determinable
Rib:	Rib
Dressing:	No dressing
Grinding surf., height (cm):	Not determinable
Origin:	Quarry
Rock type:	Garnet mica schist, Hyllestad (MP)
Quern type:	RQ-U III



Description: Sector fragment, no eye or handle socket preserved. Finger-wide concentric groove 14 cm from the edge of the upper surface forms a rib. Concentric grooves on grinding surface (from wear).

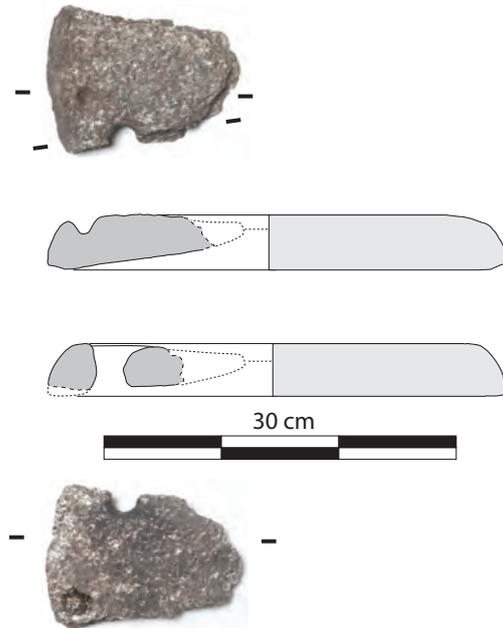
Context: Found in paved area (backyard or alley?) belonging to a warehouse destroyed by fire. The warehouse probably belonged to a building facing the water front in the innermost area of the Vågen Bay.

Dating: High Medieval Period, *t.a.q.* 1272 AD.

Bibliography: Lillehammer 1969, 1970.

Cat. no. 3

Inv. number:	S9454 IX g 3
Provenance:	Bergjeland farm no. 55, Stavanger k.
Site name:	Skagen 3
% preserved:	10
No. of fragments:	1
Max diameter (cm):	38
Total height (cm):	4.5
Rim height (cm):	4
Thickness (cm):	3.8
Index t % of max. diam.:	10
Circumference:	Regular
Contour (edge):	Straight convergent
Grinding surface, shape:	Convex
Grinding surface:	Used
Category:	Upper stone
Upper surface:	Flat
Eye upper stone:	Not preserved
Handle socket:	Vertical
Number of handle sockets:	1
Handle socket, diameter (cm):	2.6
Rynd slots:	Not determinable
Rib:	Not determinable
Grinding surf., height (cm):	Not determinable
Origin:	Quarry
Rock type:	Garnet mica schist, Hyllestad (MP)
Quern type:	RQ-U III



Description: Sector fragment, no eye preserved, largest radius 16.4 cm. Half of handle socket, totally perforated in one break. Shallow hollow 2 cm from the edge. Concentric grooves on grinding surface (from wear).

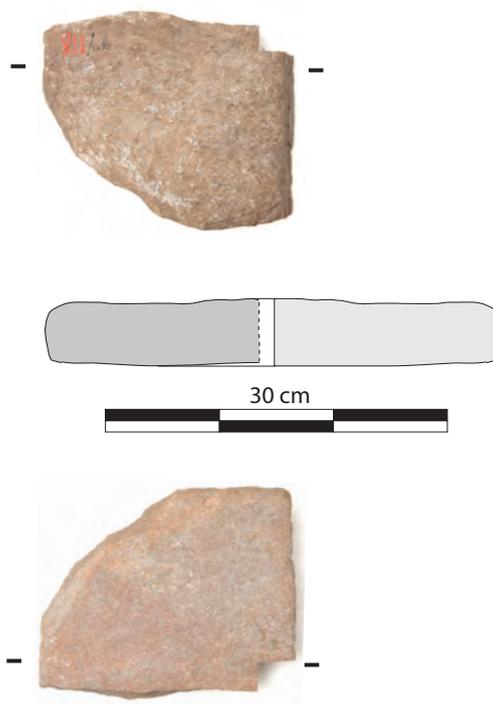
Context: Found in paved area (backyard or alley?), belonging to a warehouse destroyed by fire. The warehouse probably belonged to a building facing the water front in the innermost area of the Vågen Bay.

Dating: High Medieval Period, *t.a.q.* 1272 AD.

Bibliography: Lillehammer 1969, 1970.

Cat. no. 4

Inv. number:	S9643 fnr. 118
Provenance:	Ullandhaug, farm no. 24, Stavanger k.
Site name:	Ullandhaug House 1
% preserved:	<20
No. of fragments:	1
Max diameter (cm):	44
Min diameter (cm):	40
Total height (cm):	6
Circumference:	Irregular
Contour (edge):	Curved convergent
Category:	Rough-out
Origin:	Erratic block
Rock type:	Gneiss (MP: mylonitic, rich in biotite; strongly foliated)
Quern type:	RQ-R



Description: Sector fragment of oval rough-out, one face is rough and uneven, the other is smooth with a convex cross-section.

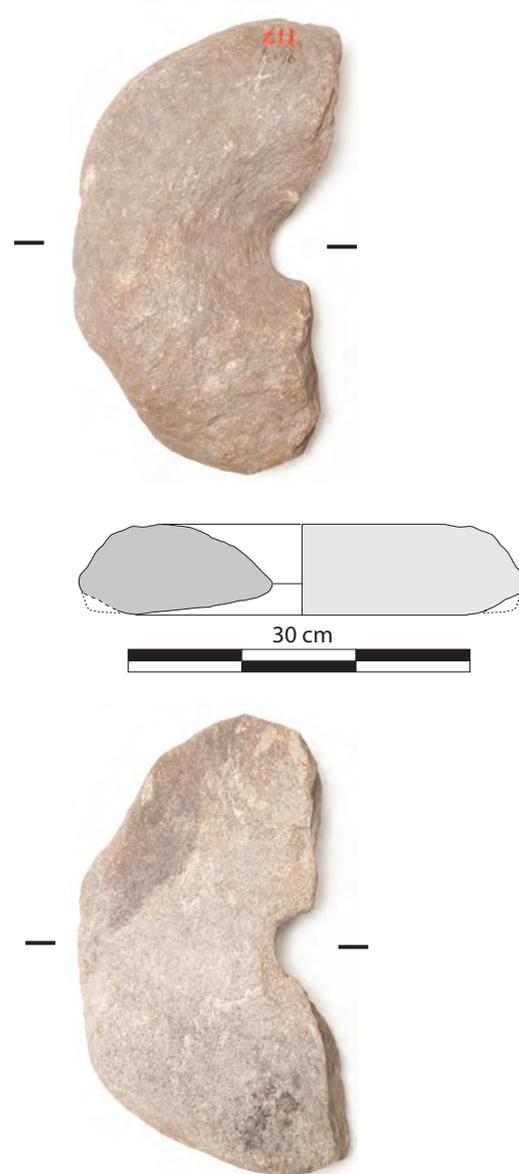
Context: Found at the NE entrance of House 1, i.e. in secondary position.

Dating: The NE entrance was in use only in the last phase of the house, c. 500-550 AD.

Bibliography: Myhre 1980: 42.

Cat. no. 5

Inv. number:	S9643 fnr. 117
Provenance:	Ullandhaug farm no. 24, Stavanger k.
Site name:	Ullandhaug House 1
% preserved:	50
No. of fragments:	1
Max diameter (cm):	41
Min diameter (cm):	40
Total height (cm):	8
Thickness (cm):	7.2
Index t % of max. diam.:	17.56
Circumference:	Irregular
Contour (edge):	Curved convergent
Grinding surface, shape:	Concave
Grinding surface:	Used
Category:	Upper stone
Upper surface:	Convex
Eye diameter, max (cm):	14.5
Eye diameter, min (cm):	5
Eye circumference:	Circular
Eye section:	Biconical
Handle socket:	No socket
Rynd slots:	No rynd slots
Rib:	No rib
Dressing:	No dressing
Grinding surf., height (cm):	1.5
Origin:	Erratic block
Rock type:	Quartz-rich biotite gneiss (MP)
Quern type:	RQ-U II b



Description: 50% of an upper stone with large hopper. Original grinding surface probably lost.

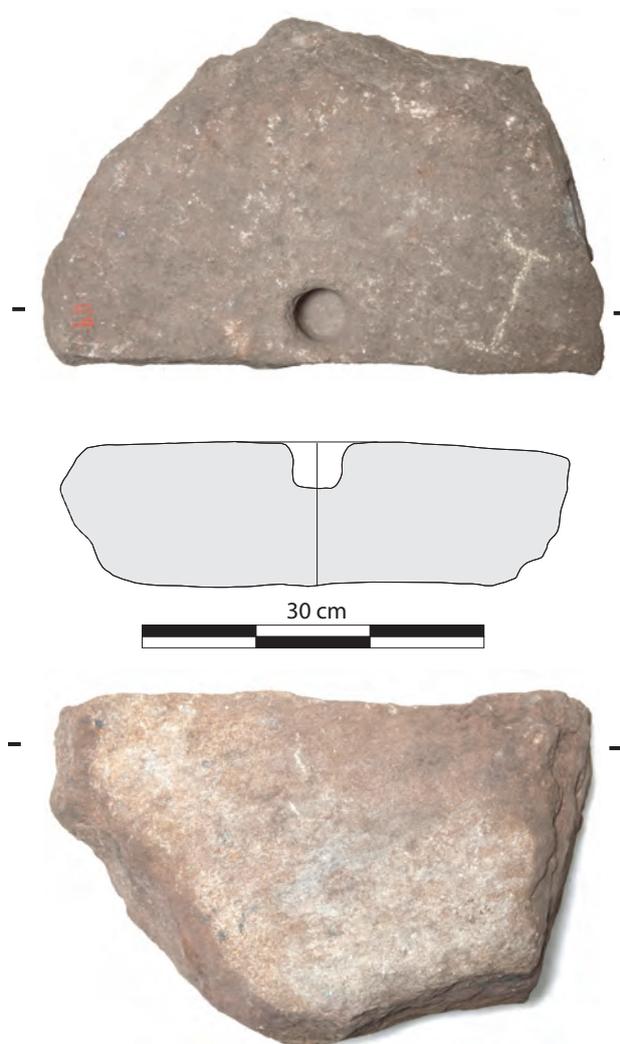
Context: Found in the western stone wall of House 1, i.e. in secondary position.

Dating: Antedating the last phase of the house, i.e. before c. 500 AD.

Bibliography: Myhre 1980: 42.

Cat. no. 6

Inv. number:	S9643 fnr. 119
Provenance:	Ullandhaug farm no. 24, Stavanger k.
Site name:	Ullandhaug House 1
% preserved:	60
No. of fragments:	1
Max diameter (cm):	46
Total height (cm):	12.7
Circumference:	Irregular
Contour (edge):	Straight convergent
Grinding surface, shape:	Convex
Grinding surface:	Used
Category:	Lower stone
Base:	Regular
Eye (in lower stone):	Partial perforation
Eye depth (cm):	3.8
Eye diameter, max (cm):	5.5
Eye diameter, min (cm):	3.8
Lip:	No lip
Dressing:	Pecking
Grinding surf., height (cm):	1
Origin:	Erratic block
Rock type:	Gneiss
Quern type:	RQ-L 2



Description: More than half of lower stone with complete eye, partially perforated. Irregular, oval circumference, largest preserved diameter 45 cm, estimated largest diameter 46 cm. Grinding surface has random pecking.

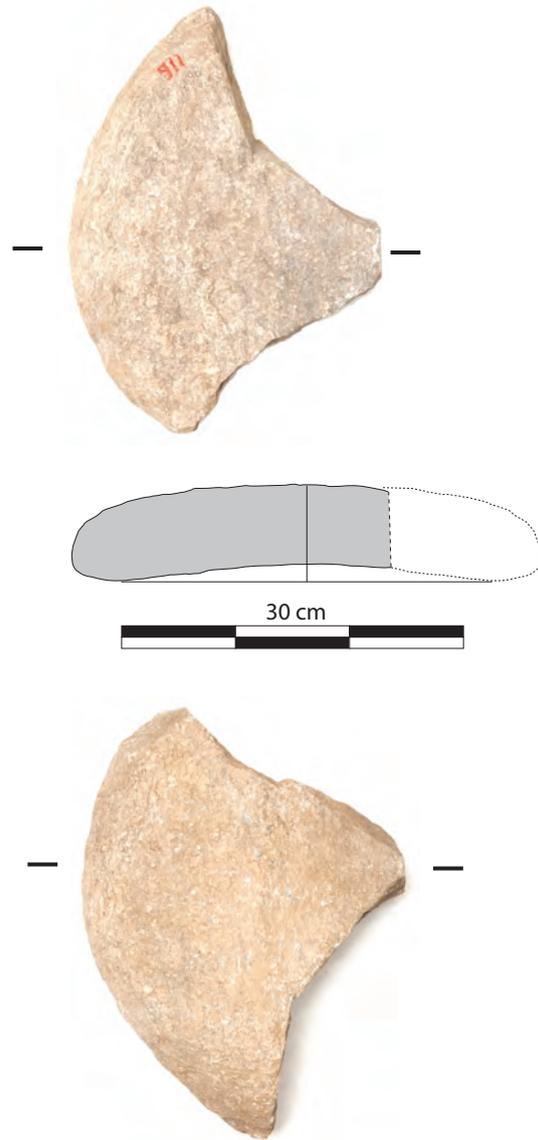
Context: Stray find east of House 1, but probably belonging to House 1, according to the excavator.

Dating: c. 300-550, if the quern belongs to the occupation of House 1.

Bibliography: Unpublished catalogue in the archive at the AM.

Cat. no. 7

Inv. number:	S9643 fnr. 116
Provenance:	Ullandhaug, farm no. 24, Stavanger k.
Site name:	Ullandhaug House 2
% preserved:	30
No. of fragments:	1
Max diameter (cm):	44
Min diameter (cm):	42
Total height (cm):	8.5
Circumference:	Regular
Contour (edge):	Rounded
Grinding surface:	Not used
Category:	Roughout
Upper surface:	Flat
Origin:	Erratic block
Rock type:	Granitic protomylonite (MP)
Quern type:	RQ-R



Description: Approx. 30% of roughout, with regular circumference and rounded edge, possibly for an upper stone. Future “grinding surface” concave.

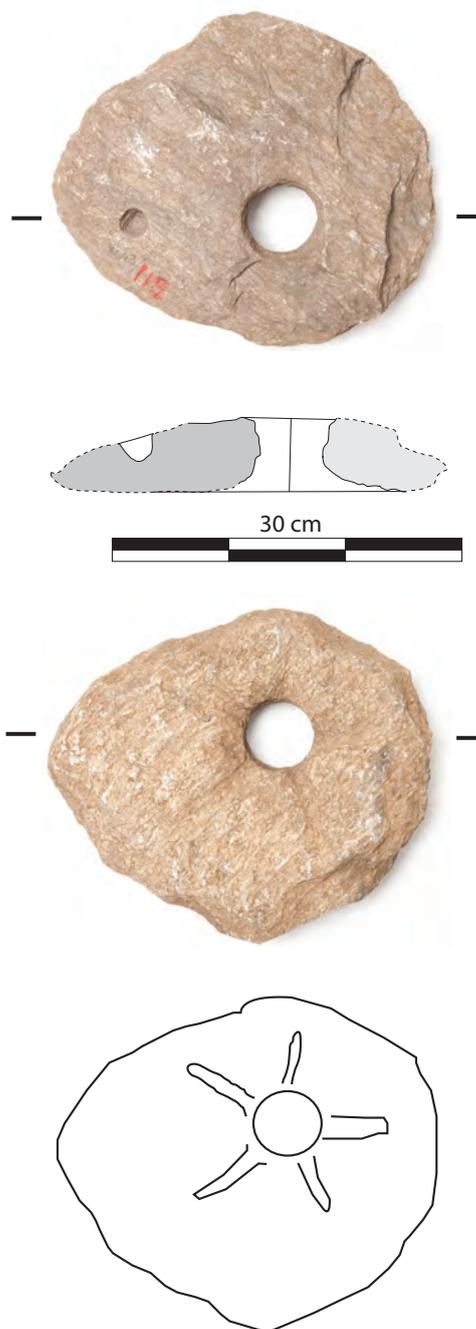
Context: Found in the cultural layer of House 2.

Dating: 5th-6th century AD.

Bibliography: Myhre 1980: 55.

Cat. no. 8

Inv. number:	S9643 fnr. 115
Provenance:	Ullandhaug, farm no. 24, Stavanger k.
Site name:	Ullandhaug House 2
% preserved:	40
No. of fragments:	1
Max diameter (cm):	>40
Total height (cm):	7.5
Thickness (cm):	6.1
Index t % of max. diam.:	>15.25
Circumference:	Not determinable
Contour (edge):	Not determinable
Grinding surface, shape:	Concave
Grinding surface:	Not used
Category:	Upper stone
Upper surface:	Not determinable
Eye diameter, max (cm):	6
Eye circumference:	Circular
Eye section:	Biconical
Handle socket:	Vertical
Number of handle sockets:	1
Handle socket, diam. (cm):	3
Handle socket, depth (cm):	2
Rynd slots:	No rynd slots
Rib:	Not determinable
Dressing:	5 radial furrows
Grinding surf., height (cm):	Not determinable
Origin:	Erratic block
Rock type:	Granodioritic protomylonite (MP)
Quern type:	RQ-U



Description: Fragment, c. 40% of upper stone, original edge or upper surface not preserved. Five furrows on grinding surface, l: max 11 cm, w: 2 cm, d: 1.2 cm. Grinding surface rugged and uneven, probably not used.

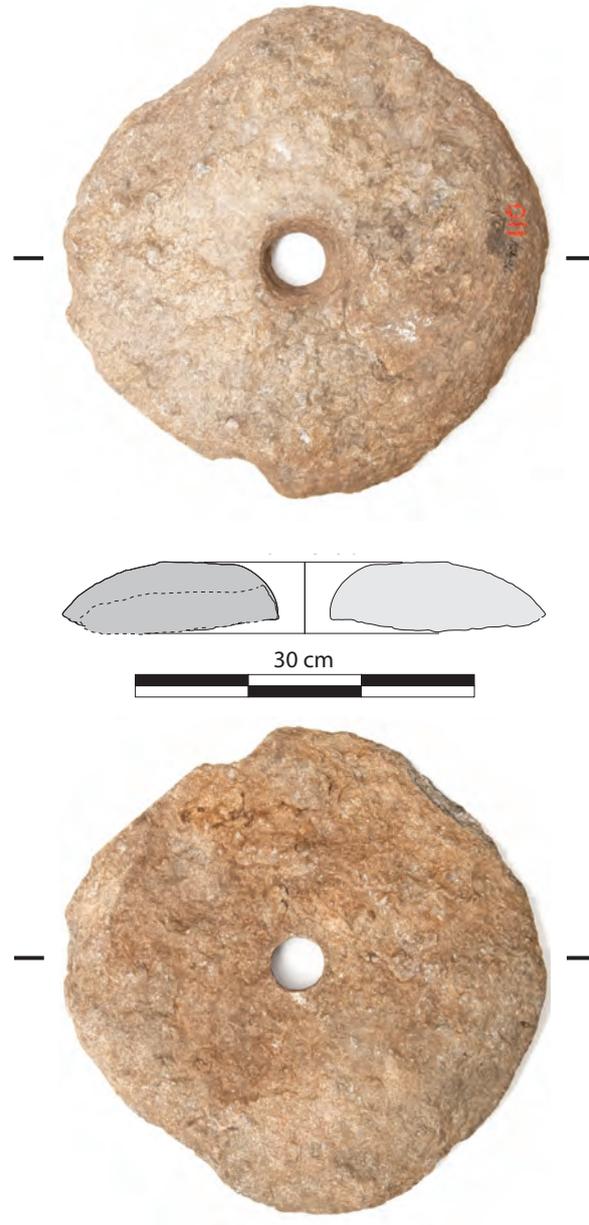
Context: Found in the cultural layer in House 2.

Dating: 5th-6th century AD.

Bibliography: Myhre 1980: 55, fig. 28.

Cat. no. 9

Inv. number:	S9643 fnr. 110
Provenance:	Ullandhaug, farm no. 24, Stavanger k.
Site name:	Ullandhaug House 3
% preserved:	100
No. of fragments:	1
Conservation treatment:	Grinding surface consolidated
Max diameter (cm):	43
Min diameter (cm):	42
Total height (cm):	6.7
Thickness (cm):	6
Index t % of max. diam.:	13.95
Circumference:	Irregular
Contour (edge):	Curved convergent
Grinding surface, shape:	Concave
Grinding surface:	Used
Category:	Upper stone
Upper surface:	Convex
Eye diameter, max (cm):	7.8
Eye diameter, min (cm):	4.6
Eye circumference:	Oval
Eye section:	Conical
Handle socket:	No socket
Rynd slots:	No rynd slots
Rib:	Not determinable
Dressing:	No dressing
Grinding surf., height (cm):	1.2
Origin:	Erratic block
Rock type:	Mylonitic gneiss (MP)
Quern type:	RQ-U IIb



Description: Badly damaged upper stone, now almost rectangular-shaped. Scorched, large parts of grinding surface flaked off, large parts of upper surface missing.

Context: Found in the stone paving together with cat. 10, approx. 2.5 m SW of Hearth 5 in House 3, phase 2.

Dating: 5th century AD.

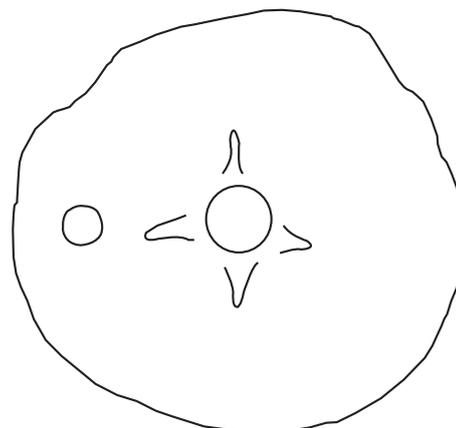
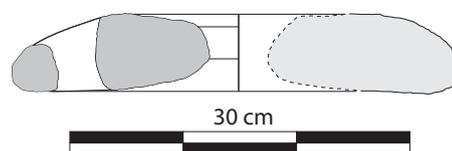
Bibliography: Myhre 1980: 75.

Cat. no. 10

Inv. number:	S9643 fnr. 111
Provenance:	Ullandhaug, farm no. 24, Stavanger k.
Site name:	Ullandhaug House 3
% preserved:	100
No. of fragments:	1
Max diameter (cm):	40.5
Min diameter (cm):	38
Total height (cm):	7
Thickness (cm):	6.8
Index t % of max. diam.:	16.7
Circumference:	Irregular
Contour (edge):	Curved convergent
Grinding surface, shape:	Concave
Grinding surface:	Used
Category:	Upper stone
Upper surface:	Convex
Eye diameter, max (cm):	9.3
Eye diameter, min (cm):	6
Eye circumference:	Oval
Eye section:	Conical
Handle socket:	Vertical
Number of handle sockets:	1
Handle socket, diam. (cm):	3.5
Handle socket, depth (cm):	Totally perforated
Rynd slots:	No rynd slots
Rib:	No rib
Dressing:	4 furrows
Grinding surf., height (cm):	1.7
Origin:	Erratic block
Rock type:	Mylonitic augen-gneiss (MP)
Quern type:	RQ-U IIb1

Description: Upper stone with very large handle socket, max. diam.: 4.3 cm. Grinding surface with four shallow furrows 5 cm long, radiating from the eye. Grinding surface with large quartz crystals, the skirt at the perimeter is polished by wear in 8 cm width, rough around the eye.

Context: Found in the stone paving together with cat. 9, approx. 2.5 m SW of Hearth 5 in House 3, phase 2.

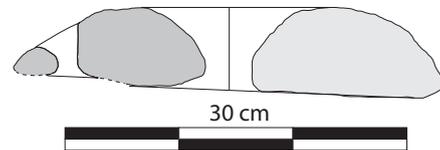


Dating: 5th century AD.

Bibliography: Myhre 1980: 75.

Cat. no. 11

Inv. number:	S9643 fnr. 396
Provenance:	Ullandhaug, farm no. 24, Stavanger k.
Site name:	Ullandhaug House 3
% preserved:	100
No. of fragments:	2
Max diameter (cm):	39
Min diameter (cm):	33
Total height (cm):	9
Thickness (cm):	7.8
Index t % of max. diam.:	20
Circumference:	Irregular
Contour (edge):	Curved convergent
Grinding surface, shape:	Concave
Grinding surface:	Used
Category:	Upper stone
Upper surface:	Convex
Eye diameter, max (cm):	14
Eye diameter, min (cm):	4.5
Eye circumference:	Oval
Eye section:	Conical
Handle socket:	Vertical
Number of handle sockets:	1
Handle socket, diam. (cm):	2
Rynd slots:	No rynd slots
Rib:	No rib
Dressing	No dressing
Grinding surf., height (cm):	0.8
Origin:	Erratic block
Rock type:	Mica schist with small garnets (MP)
Quern type:	RQ-U IIc1



Description: Upper stone in two fragments with totally perforated handle socket and possibly an adjacent start of a second handle socket. Very pronounced hopper. Rough grinding surface, eye worn.

Context: Found as an integral part of the stone paving in the byre of House 3, phase 1, i.e. in

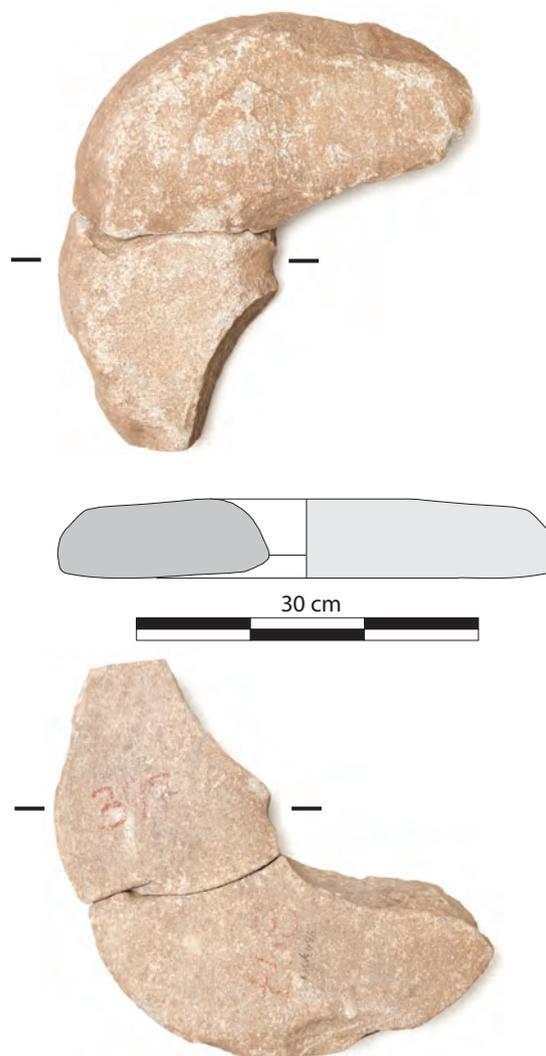
secondary position.

Dating: *T.a.q.* c. 350 AD.

Bibliography: Unpublished; find list by B. Myhre in the topographical archive at the AM.

Cat. no. 12

Inv. number:	S9643 fnr. 397
Provenance:	Ullandhaug, farm no. 24, Stavanger k.
Site name:	Ullandhaug House 3
% preserved:	60
No. of fragments:	2
Max diameter (cm):	46
Total height (cm):	7.3
Thickness (cm):	6.4
Index t % of max. diam.:	13.9
Circumference:	Regular
Contour (edge):	Straight convergent
Grinding surface, shape:	Concave
Grinding surface:	Used
Category:	Upper stone
Upper surface:	Flat
Eye diameter, max (cm):	Not determinable
Eye circumference:	Not determinable
Eye section:	Conical
Handle socket:	Not determinable
Rynd slots:	No rynd slots
Rib:	No rib
Dressing:	No dressing
Grinding surf., height (cm):	1.2
Origin:	Erratic block
Rock type:	Mica gneiss with small garnets (MP)
Quern type:	RQ-U IIa



Description: Two fragments of upper stone, approx. 60% conserved. Only a fraction of the eye is preserved, slight wear.

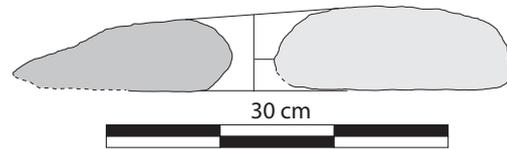
Context: Found in the NE corner in the byre of House 3, phase 1, probably serving as the base for a post. Secondary position.

Dating: *T.a.q.* c. 350 AD.

Bibliography: Unpublished; find list by B. Myhre in the topographical archive at the AM.

Cat. no. 13

Inv. number:	S9643 fnr. 398, 399
Provenance:	Ullandhaug, farm no. 24, Stavanger k.
Site name:	House 3
% preserved:	100
No. of fragments:	2
Max diameter (cm):	44
Min diameter (cm):	42
Total height (cm):	8
Thickness (cm):	7.2
Index t % of max. diam.:	16.36
Circumference:	Irregular
Contour (edge):	Curved convergent
Grinding surface, shape:	Concave
Grinding surface:	Used
Category:	Upper stone
Upper surface:	Convex
Eye diameter, max (cm):	8.5
Eye diameter, min (cm):	4.5
Eye circumference:	Circular
Eye section:	Biconical
Handle socket:	No socket
Rynd slots:	No rynd slots
Rib:	No rib
Dressing:	No dressing
Grinding surf., height (cm):	0.6
Origin:	Erratic block
Rock type:	Quartz-rich mica gneiss (MP)
Quern type:	RQ-U IIb



Description: Upper stone in two parts with a very irregular upper surface and an asymmetrical section. Poorly preserved, scorched.

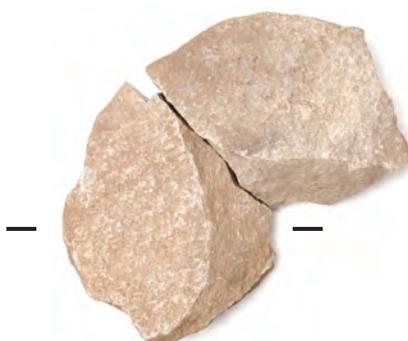
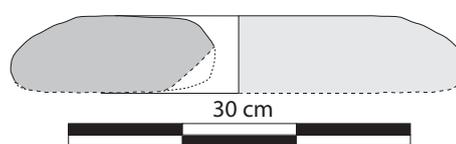
Context: Fnr. 398 was found in the SW wall that blocked Entrance 3 in House 3. Ascribed to phase 1, secondarily used as building material in phase 2. Fnr. 399 was found under the E-W profile near the western wall, probably used in the construction of the wall. Both fragments in secondary position.

Dating: 4th century AD.

Bibliography: Unpublished; find list by B. Myhre in the topographical archive at the AM.

Cat. no. 14

Inv. number:	S9643 fnr. 402
Provenance:	Ullandhaug, farm no. 24, Stavanger k.
Site name:	House 3
% preserved:	40
No. of fragments:	2
Max diameter (cm):	44
Total height (cm):	7.5
Thickness (cm):	7.1
Index t % of max. diam.:	16.13
Circumference:	Irregular
Contour (edge):	Curved convergent
Grinding surface, shape:	Concave
Grinding surface:	Used
Category:	Upper stone
Upper surface:	Flat
Eye diameter, max (cm):	10
Eye circumference:	Oval
Eye section:	Not determinable
Handle socket:	Not determinable
Rynd slots:	Not determinable
Rib:	Not determinable
Dressing:	Pecking
Grinding surf., height (cm):	Not determinable
Origin:	Erratic block
Rock type:	Mica gneiss, partly augengneiss (MP)
Quern type:	RQ-U IIa



Description: Two fragments, approx. 40% of an upper stone, badly damaged. Parts of both upper surface and grinding surface are missing. Grinding surface has random pecking.

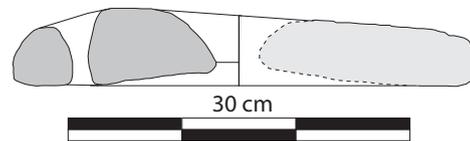
Context: Found in the collapsed western wall just north of Entrance 1 in House 3, phase 1. Secondary position.

Dating: 4th century AD.

Bibliography: Unpublished; find list by B. Myhre in the topographical archive at the AM.

Cat. no. 15

Inv. number:	S9643 fnr. 446
Provenance:	Ullandhaug, farm no. 24, Stavanger k.
Site name:	House 3
% preserved:	100
No. of fragments:	1
Max diameter (cm):	40
Min diameter (cm):	38.5
Total height (cm):	7
Thickness (cm):	6.6
Index t % of max. diam.:	16.5
Circumference:	Regular
Contour (edge):	Curved convergent
Grinding surface, shape:	Concave
Grinding surface:	Used
Category:	Upper stone
Upper surface:	Convex
Eye diameter, max (cm):	11
Eye diameter, min (cm):	4.9
Eye circumference:	Oval
Eye section:	Conical
Handle socket:	Vertical
Number of handle sockets:	1
Handle socket, diam. (cm):	4
Handle socket, depth (cm):	Totally perforated
Rynd slots:	No rynd slots
Rib:	No rib
Dressing:	Pecking
Grinding surf., height (cm):	1.4
Origin:	Erratic block
Rock type:	Quartz-rich mica gneiss (MP)
Quern type:	RQ-U IIa1



Description: Upper stone with an irregular upper surface, partly convex, partly flat. Eye oval-shaped, diameter at grinding surface 4.9-5.3 cm. Large hopper. Grinding surface rough, strongly concave around the eye, random pecking. Biconical handle socket.

Context: Found in the southernmost room in House 3, phase 1, possibly as a part of a stone

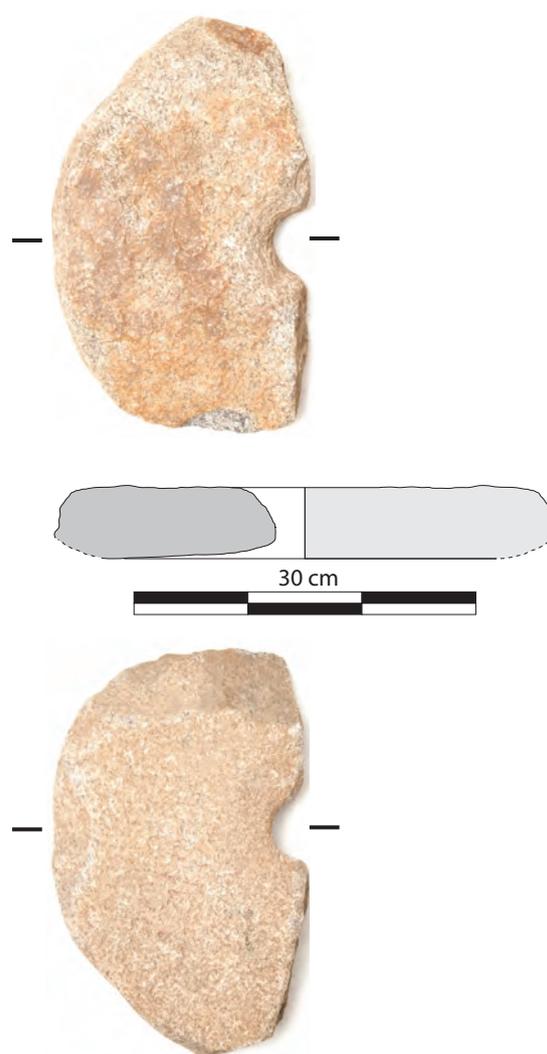
paving connected to Entrance 1. Secondary position.

Dating: 4th century AD.

Bibliography: Unpublished; find list by B. Myhre in the topographical archive at the AM.

Cat. no. 16

Inv. number:	S9643 fnr. 455
Provenance:	Ullandhaug, farm no. 24, Stavanger k.
Site name:	House 3
% preserved:	50
No. of fragments:	1
Max diameter (cm):	44
Min diameter (cm):	43
Total height (cm):	7
Rim height (cm):	6
Thickness (cm):	6.7
Index t % of max. diam.:	15.2
Circumference:	Irregular
Contour (edge):	Sinuous
Grinding surface, shape:	Concave
Grinding surface:	Not determinable
Category:	Upper stone
Upper surface:	Flat
Eye diameter, max (cm):	8
Eye diameter, min (cm):	5.5
Eye circumference:	Circular
Eye section:	Conical
Handle socket:	Not determinable
Rynd slots:	No rynd slots
Rib:	No rib
Dressing	Pecking
Grinding surf., height (cm):	0.6
Origin:	Erratic block
Rock type:	Mica gneiss (MP)
Quern type:	RQ-U IIa



Description: Half of an upper stone with flat upper surface and a sinuous edge. Large parts of the original upper surface are missing, grinding surface rough with random pecking.

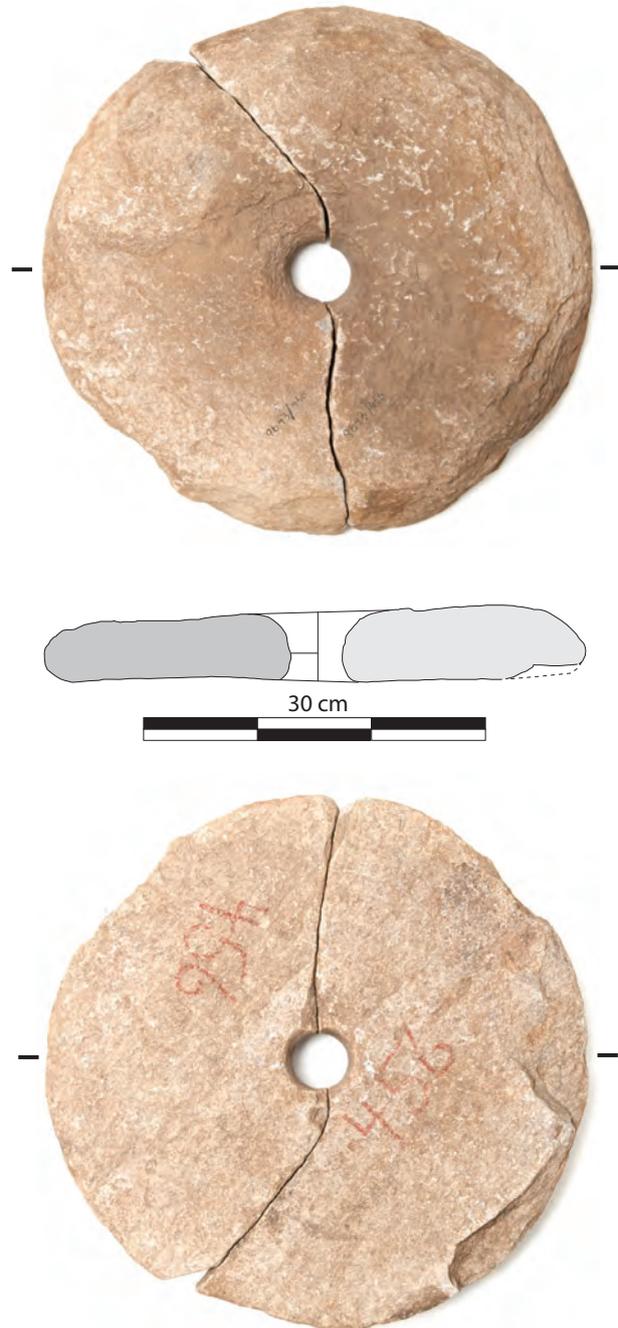
Context: Found outside House 3, as a part of the stone paving leading up to Entrance 1, thus belonging to phase 1. Secondary position.

Dating: 4th century AD.

Bibliography: Unpublished; find list by B. Myhre in the topographical archive at the AM.

Cat. no. 17

Inv. number:	S9643 fnr. 456
Provenance:	Ullandhaug, farm no. 24, Stavanger k.
Site name:	House 3
% preserved:	100
No. of fragments:	2
Max diameter (cm):	46.5
Total height (cm):	7
Thickness (cm):	6.7
Index t % of max. diam.:	14.4
Circumference:	Regular
Contour (edge):	Rounded
Grinding surface, shape:	Concave
Grinding surface:	Not determinable
Category:	Upper stone
Upper surface:	Flat
Eye diameter, max (cm):	9
Eye diameter, min (cm):	5
Eye circumference:	Oval
Eye section:	Biconical
Handle socket:	No socket
Rynd slots:	No rynd slots
Rib:	No rib
Dressing:	Pecking
Grinding surf., height (cm):	0.4
Origin:	Erratic block
Rock type:	Quartz-rich augengneiss (MP)
Quern type:	RQ-U IIa



Description: Upper stone in two parts. Damaged grinding surface, heavily worn with patches of random pecking, parts broken off at the edge, also some flaking.

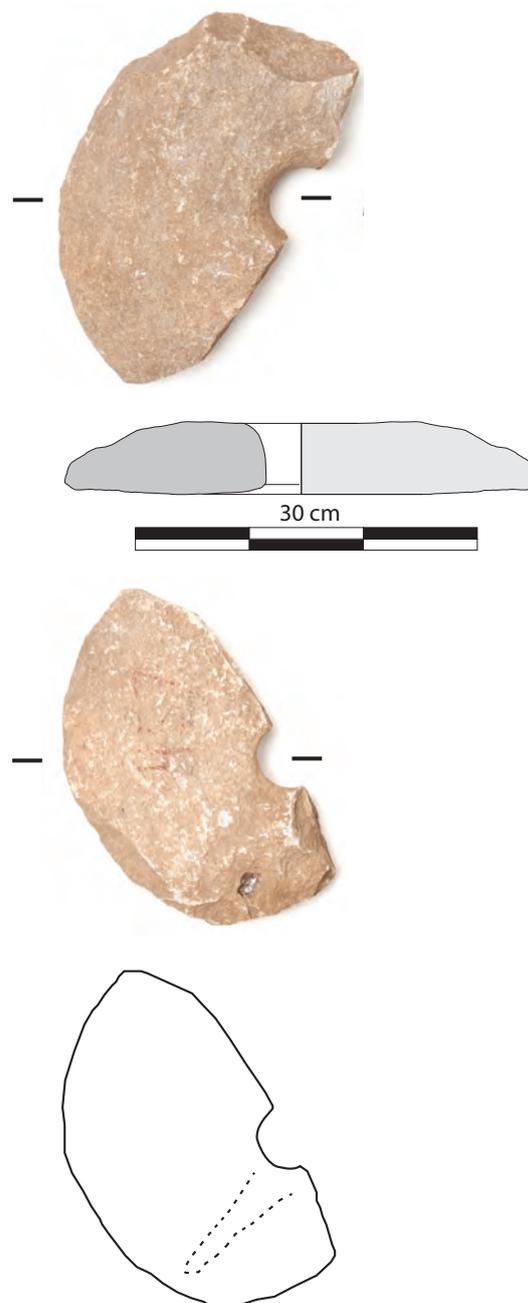
Context: Found on top of the channel connecting Hearth 7b and 7c in House 3, phase 1. Secondary position.

Dating: 4th century AD.

Bibliography: Myhre 1980: 198, fig. 102.

Cat. no. 18

Inv. number:	S9643 fnr. 457
Provenance:	Ullandhaug, farm no. 24, Stavanger k.
Site name:	House 3
% preserved:	<50
No. of fragments:	1
Max diameter (cm):	44
Min diameter (cm):	42
Total height (cm):	6.5
Thickness (cm):	6.4
Index t % of max. diam.:	14.5
Circumference:	Regular
Contour (edge):	Rounded
Grinding surface, shape:	Concave
Grinding surface:	Used
Category:	Upper stone
Upper surface:	Flat
Eye diameter, max (cm):	7.5
Eye diameter, min (cm):	5.7
Eye circumference:	Oval
Eye section:	Biconical
Handle socket:	Not determinable
Rynd slots:	No rynd slots
Rib:	No rib
Dressing:	Furrow, Pecking
Grinding surf., height (cm):	0.5
Origin:	Erratic block
Rock type:	Augengneiss (MP)
Quern type:	RQ-U IIc



Description: Half of upper stone, parts of the edge is missing. Possible cortex on upper surface. Grinding surface worn and uneven, with random pecking and one furrow approx. 2 cm wide and 0.5 cm deep, curving from the eye towards the perimeter.

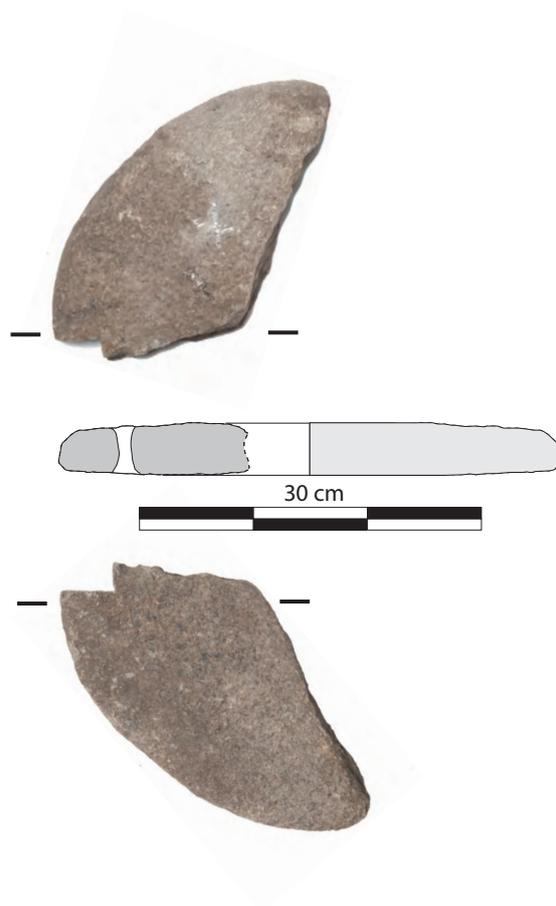
Context: Found on a slab at Entrance 1, House 3, phase 1. Secondary position, possibly originally from the outer stone wall when that collapsed.

Dating: *T.a.q.* 350 AD.

Bibliography: Unpublished; find list by B. Myhre in the topographical archive at the AM.

Cat. no. 19

Inv. number:	S9643 fnr. 460
Provenance:	Ullandhaug, farm no. 24, Stavanger k.
Site name:	House 3
% preserved:	25
No. of fragments:	1
Max diameter (cm):	44
Min diameter (cm):	42
Total height (cm):	5
Thickness (cm):	4.2
Index t % of max. diam.:	9.5
Circumference:	Regular
Contour (edge):	Curved convergent
Grinding surface, shape:	Concave
Grinding surface:	Used
Category:	Upper stone
Upper surface:	Flat
Eye diameter, max (cm):	Not determinable
Handle socket:	Vertical
Number of handle sockets:	1
Handle socket, diam. (cm):	2.1
Handle socket, depth (cm):	Totally perforated
Rynd slots:	Not determinable
Rib:	No rib
Dressing:	Pecking
Grinding surf., height (cm):	Not determinable
Origin:	Erratic block
Rock type:	Gneiss with mica and biotite (MP)
Quern type:	RQ-U IIa1



Description: Sector fragment, approx. 25% of upper stone, eye not preserved. Grinding surface rough, with random pecking and wear polish along the perimeter. Partly preserved handle socket, totally perforated, diam. at upper surface 2.1 cm, at grinding surface 1.9 cm.

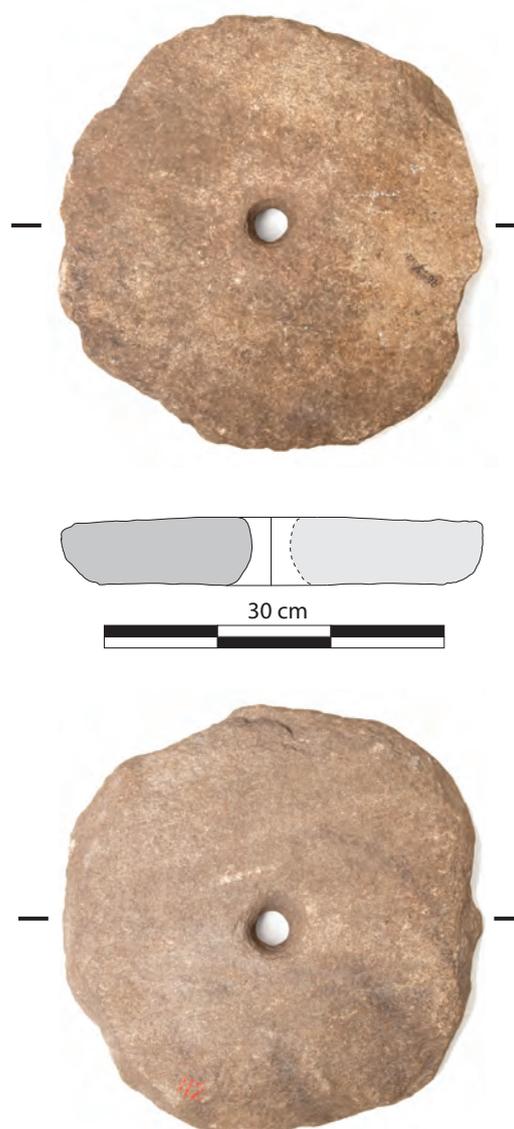
Context: Unknown position in House 3, probably belonging to phase 1.

Dating: 4th century AD.

Bibliography: Unpublished; find list by B. Myhre in the topographical archive at the AM.

Cat. no. 20

Inv. number:	S9643 fnr. 112
Provenance:	Ullandhaug, farm no. 24, Stavanger k.
Site name:	House 3
% preserved:	100
No. of fragments:	1
Max diameter (cm):	38
Total height (cm):	6
Circumference:	Irregular
Contour (edge):	Rounded
Grinding surface, shape:	Convex
Grinding surface:	Used
Category:	Lower stone
Base:	Regular
Eye:	Total perforation
Eye diameter, max (cm):	6
Eye diameter, min (cm):	2.8
Lip:	No lip
Dressing:	Pecking
Grinding surf., height (cm):	0.8
Origin:	Erratic block
Rock type:	Granodioritic gneiss (MP)
Quern type:	RQ-L 1a



Description: Lower stone with totally perforated eye with uneven wear traces, diameter at grinding surface 4.1-4.3 cm, at base 5.9-6.1 cm. Grinding surface with random pecking, unevenly worn smooth.

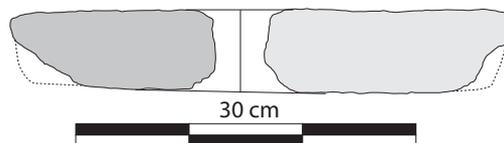
Context: Found in the stone paving in Room II, House 3, phase 2.

Dating: 5th century AD.

Bibliography: Myhre 1980: 75.

Cat. no. 21

Inv. number:	S9643 fnr. 114
Provenance:	Ullandhaug, farm no. 24, Stavanger k.
Site name:	House 3
% preserved:	80
No. of fragments:	2
Max diameter (cm):	48
Min diameter (cm):	46
Total height (cm):	8.5
Circumference:	Irregular
Contour (edge):	Curved convergent
Grinding surface, shape:	Planar
Grinding surface:	Used
Category:	Lower stone
Base:	Regular
Eye:	Total perforation
Eye diameter, max (cm):	6
Eye diameter, min (cm):	4
Lip:	No lip
Dressing:	Pecking
Grinding surf., height (cm):	0.8
Origin:	Erratic block
Rock type:	Granodioritic gneiss (MP)
Quern type:	RQ-L 2a



Description: Lower stone, roughly rectangular, broken in two pieces across the eye. Damaged at the edge and at the base. Grinding surface has random pecking.

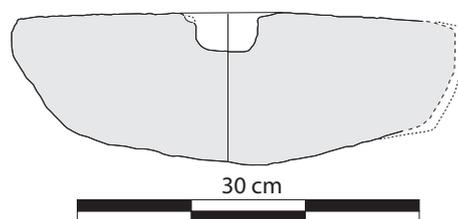
Context: Found as a part of the stone paving in Room II in House 3, phase 2. Secondary position.

Dating: 5th century AD.

Bibliography: Myhre 1980: 42.

Cat. no. 22

Inv. number:	S11759 h
Provenance:	Gausel farm no. 14, Stavanger k.
Site name:	House 4/10
% preserved:	100
No. of fragments:	1
Max diameter (cm):	39
Min diameter (cm):	34
Total height (cm):	14
Circumference:	Regular
Contour (edge):	Curved convergent
Grinding surface, shape:	Convex
Grinding surface:	Used
Category:	Lower stone
Base:	Regular
Eye:	Partial perforation
Eye depth (cm):	3.5
Eye diameter, max (cm):	5.5
Lip:	Lip
Dressing:	Pecking
Grinding surf., height (cm):	0.6
Origin:	Erratic block
Rock type:	Granite
Quern type:	RQ-L 2



Description: Lower stone with partially perforated eye and oval grinding surface, with a regular-shaped base. The grinding surface is used, with clear traces of dressing by pecking.

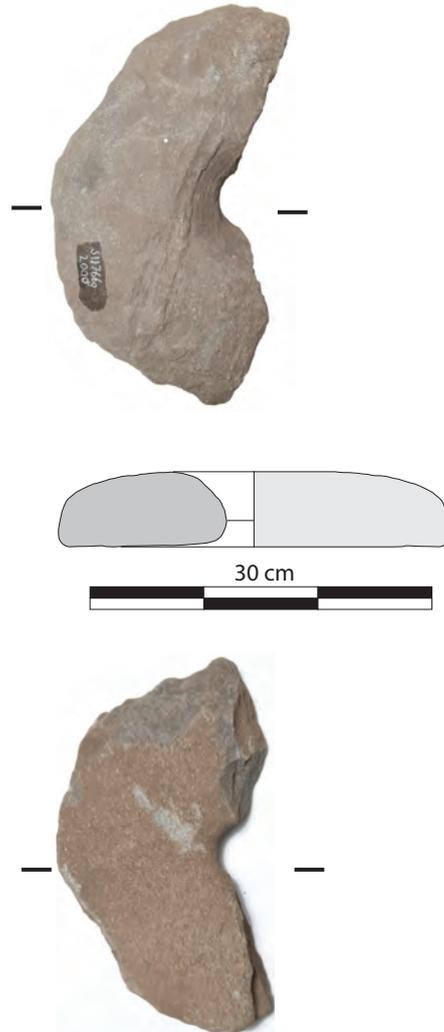
Context: Found in posthole 1424 in House 4/10, i.e. in secondary position.

Dating: The house has two phases, spanning 300-550 AD. Assuming that the posthole belongs to the first building phase, it yields a *t.a.q.* c. 300 AD.

Bibliography: Bårdseth 2002: 50, fig. 10, 11.

Cat. no. 23

Inv. number:	S11766 g fnr. 2000
Provenance:	Gausel farm no. 14, Stavanger k.
Site name:	House 10
% preserved:	50 %
No. of fragments:	1
Max diameter (cm):	38
Min diameter (cm):	35
Total height (cm):	7
Thickness (cm):	6.3
Index t % of max. diam.:	16.5
Circumference:	Irregular
Contour (edge):	Curved convergent
Grinding surface, shape:	Concave
Grinding surface:	Used
Category:	Upper stone
Upper surface:	Convex
Eye diameter, max (cm):	11.3
Eye diameter, min (cm):	5
Eye circumference:	Circular
Eye section:	Biconical
Handle socket:	Not determinable
Rynd slots:	Not determinable
Rib:	No rib
Dressing:	Pecking
Origin:	Erratic block
Rock type:	Mica schist (no garnets)
Quern type:	RQ-U IIb



Description: Approx. half of an upper stone. The grinding surface is rough with random pecking, and very worn around the eye. Parts of the grinding surface along the edge is missing.

Context: Found in posthole 1481 in House 4/10, i.e. secondary position.

Dating: ¹⁴C-dating from the posthole (TuA 2552) 1700+/- 70, 250-430 cal AD. Average dating of the house 330-470 AD (Børsheim & Soltvedt 2002: 136). *T.a.q.* c. 300 AD.

Bibliography: Bårdseth 2002: 126, fig. 32, 33.

Cat. no. 24

Inv. number:	S11766 g fnr. 2001
Provenance:	Gausel farm no. 14, Stavanger k.
Site name:	House 10
% preserved:	<10
No. of fragments:	1
Max diameter (cm):	Not determinable
Thickness (cm):	5.6
Circumference:	Not determinable
Contour (edge):	Not determinable
Grinding surface, shape:	Not determinable
Grinding surface:	Used
Category:	Upper stone?
Eye diameter, max (cm):	6
Eye circumference:	Oval
Eye section:	Biconical
Origin:	Erratic block
Rock type:	Very fine-grained quartz-rich gneiss
Quern type:	Not determinable



Description: Fragmented upper stone (?) of light greyish brown foliated rock, preserving a fraction of an oval eye. No other original edges are preserved. Only 4 x 4 cm of the grinding surface is preserved, the rest is broken off in tiers. The upper surface is largely intact. Max. length: 17.5 cm.

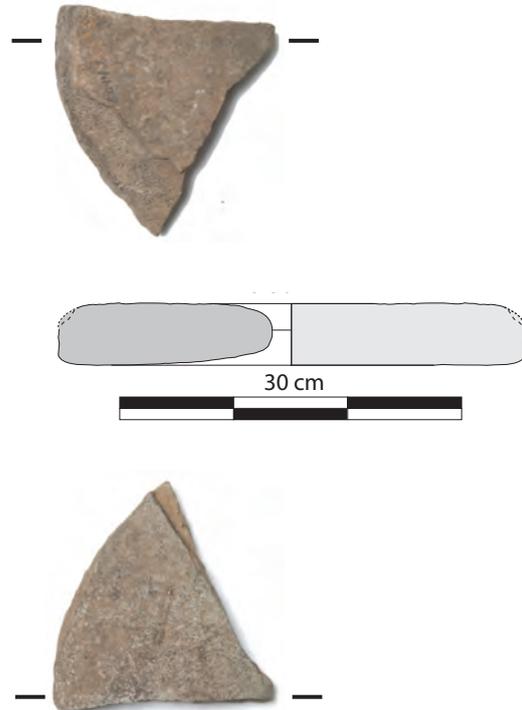
Context: Found together with cat. 23 in posthole 1481 in House 4/10, i.e. in secondary position.

Dating: ¹⁴C-dating from the posthole (TuA 2552) 1700+/- 70, 250-430 cal AD. Average dating of the house 330-470 AD (Børsheim & Soltvedt 2002: 136). *T.a.q.* c. 300 AD.

Bibliography: Bårdseth 2002: 126, fig. 32, 33.

Cat. no. 25

Inv. number:	S5044 1
Provenance:	Slettabø, farm no. 60, Bjerkreim k.
Site name:	Krågeland, House 1
% preserved:	20
No. of fragments:	1
Max diameter (cm):	43
Total height (cm):	5.6
Thickness (cm):	5.5
Index t % of max. diam.:	12.7
Circumference:	Regular
Contour (edge):	Vertical
Grinding surface, shape:	Concave
Grinding surface:	Used
Category:	Upper stone
Upper surface:	Flat
Eye diameter, min (cm):	4
Eye circumference:	Not determinable
Eye section:	Conical
Handle socket:	Not determinable
Rynd slots:	Not determinable
Rib:	No rib
Dressing:	Pecking
Grinding surf., height (cm):	Not determinable
Origin:	Not determinable
Rock type:	Syenite (AKM)
Quern type:	RQ-U IIa



Description: Sector of upper stone preserving only a small fraction of the eye. Grinding surface with random pecking, damaged at one break. Breaks l: 20, 18 and 1.5 cm.

Context: Found in House 1 at Krågeland, exact find spot not known.

Dating: Antedating the Migration Period, probably 4th century.

Bibliography: Petersen 1933: 23-31.

Cat. no. 26

Inv. number:	S5050 h
Provenance:	Slettabø, farm no. 60, Bjerkreim k.
Site name:	Krågeland, House 2
% preserved:	50
No. of fragments:	1
Max diameter (cm):	44
Total height (cm):	6
Circumference:	Regular
Contour (edge):	Curved convergent
Grinding surface, shape:	Convex
Grinding surface:	Used
Category:	Lower stone
Base:	Irregular
Eye:	Total perforation
Eye diameter, max (cm):	4
Eye diameter, min (cm):	2
Lip:	Lip
Dressing:	Pecking
Grinding surf., height (cm):	1.7
Origin:	Erratic block
Rock type:	Granite (AKM)
Quern type:	RQ-L 1a



Description: Half of lower stone with heavily worn grinding surface showing random pecking. Most prominent feature: large lip around the eye, volcano-like, flat at the top. Eye very small - for iron spindle?

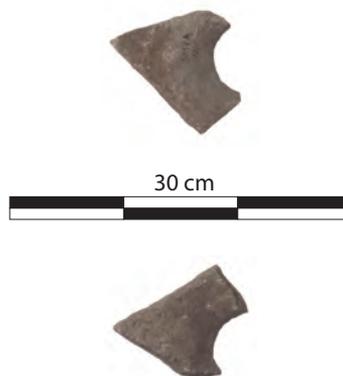
Context: Found approximately in the middle of House 2, between two postholes. Possibly in original position.

Dating: Probably Medieval Period.

Bibliography: Petersen 1933: 23-31.

Cat. no. 27

Inv. number:	S5051 k
Provenance:	Store Svela, farm no. 32, Bjerkreim k.
Site name:	Auglend House 1
% preserved:	<10
No. of fragments:	1
Max diameter (cm):	Not determinable
Circumference:	Not preserved
Contour (edge):	Not preserved
Grinding surface, shape:	Not determinable
Grinding surface:	Used
Category:	Upper stone
Upper surface:	Convex
Eye diameter, min (cm):	6
Eye circumference:	Circular
Eye section:	Biconical
Handle socket:	Not determinable
Rynd slots:	Not determinable
Rib:	No rib
Dressing:	Pecking
Grinding surf., height (cm):	Not determinable
Origin:	Not determinable
Rock type:	Fine-grained mica hornblende gneiss
Quern type:	RQ-U



Description: Small wedge-like fragment of upper stone, outer edge is not preserved, only a fraction of the eye is preserved. Grinding surface has faint traces of random pecking.

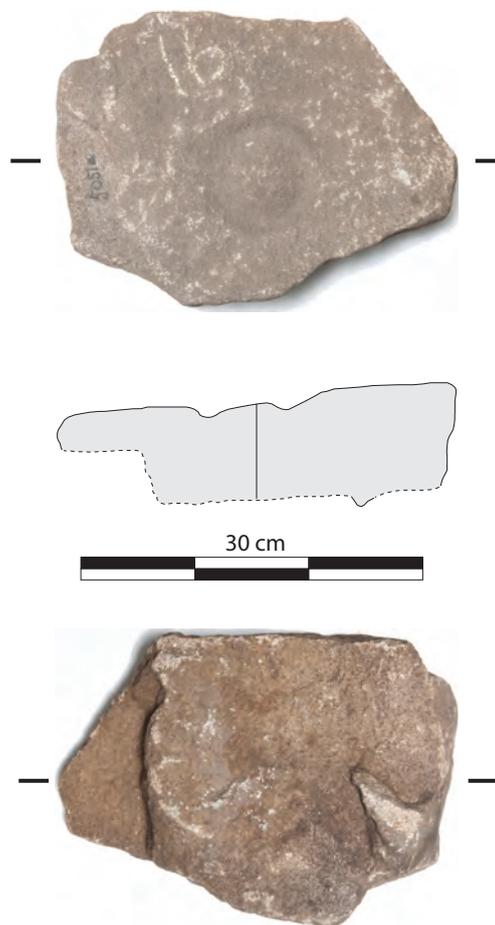
Context: Found in House 1 at the deserted farmstead of Auglend.

Dating: Migration Period, *t.a.q.* 550 AD.

Bibliography: Petersen 1933: 31-34, Pl. X, XI, fig. 1-4, Pl. XLVI.

Cat. no. 28

Inv. number:	S5051 o
Provenance:	Store Svela, farm no. 32, Bjerkreim k.
Site name:	Auglend, House 1
% preserved:	75
No. of fragments:	1
Max diameter (cm):	36
Min diameter (cm):	25.5
Total height (cm):	10.5
Circumference:	Irregular
Contour (edge):	Straight convergent
Grinding surface:	Not used
Category:	Rough-out, upper stone
Base:	Irregular
Eye:	Unfinished
Eye diameter, max (cm):	11
Lip:	No lip
Dressing:	No dressing
Grinding surf., height (cm):	Not determinable
Origin:	Erratic block
Rock type:	Gneiss
Quern type:	RQ-R



Description: Rough-out of an upper stone. Parts of the base and edge are missing. Eye begun but not finished, a circle c. 1 cm deep and 11 cm in diameter, the central portion is lower than the grinding surface.

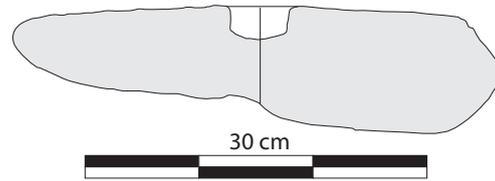
Context: Found in the floor, possible base for roof-carrying post in House 1 at the deserted farmstead of Auglend.

Dating: Migration Period, *t.a.q.* 550 AD.

Bibliography: Petersen 1933: 31-34, Pl. X, XI, fig. 1-4, Pl. XLVI.

Cat. no. 29

Inv. number:	S5051 t
Provenance:	Store Svela, farm no. 32, Bjerkreim k.
Site name:	Auglend House 1
% preserved:	100
No. of fragments:	1
Max diameter (cm):	42.5
Min diameter (cm):	33
Total height (cm):	12
Circumference:	Regular
Contour (edge):	Sinous
Grinding surface, shape:	Convex
Grinding surface:	Used
Category:	Lower stone
Base:	Regular
Eye:	Partial perforation
Eye depth (cm):	2.9
Eye diameter, max (cm):	5.6
Lip:	Lip
Dressing:	No dressing
Grinding surf., height (cm):	0.5
Origin:	Erratic block
Rock type:	Gneiss
Quern type:	RQ-L 2



Description: Lower stone, rectangular-shaped with rounded corners, thicker at one end, h: 5-12 cm. Eye with slightly oval circumference, 5.3-5.6 cm. All edges are dissimilar. Base flat with a hollow resulting from not finishing the eye.

Context: Found as a part of the stone flagging in the byre of House 1 at the deserted farmstead of Auglend.

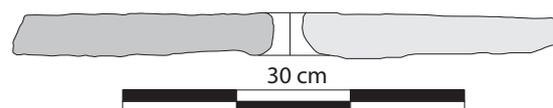
Dating: Migration Period, *t.a.q.* 550 AD.

Bibliography: Petersen 1933: 31-34, Pl. X, XI, fig. 1-4, Pl. XLVI.

The Norwegian Millstone Landscape

Cat. no. 30

Inv. number:	S5180 h (1)
Provenance:	Store Svela farm no. 32 and Vigeså farm no. 33, Bjerkreim k.
Site name:	Storrsheia, House 2
% preserved:	100
No. of fragments:	7
Max diameter (cm):	53
Min diameter (cm):	49.5
Rim height (cm):	2.9 - 5.4
Total height (cm):	3.2 - 4.1
Circumference:	Irregular
Contour (edge):	Straight divergent
Grinding surface, shape:	Convex
Grinding surface:	Used
Category:	Lower stone
Base:	Regular
Eye:	Total perforation
Eye diameter, max (cm):	4.1
Eye diameter, min (cm):	2.4
Lip:	Lip
Dressing:	Pecking
Grinding surf., height (cm):	0.2 - 0.4
Origin:	Not determinable
Rock type:	Granitic gneiss (MP)
Quern type:	RQ-L 1a



Description: Large and flat lower stone with irregular circumference. The edge is largely straight and divergent, i.e. the grinding surface is not the largest diameter. The eye is small (for iron spindle?). Grinding surface dressed with random pecking.

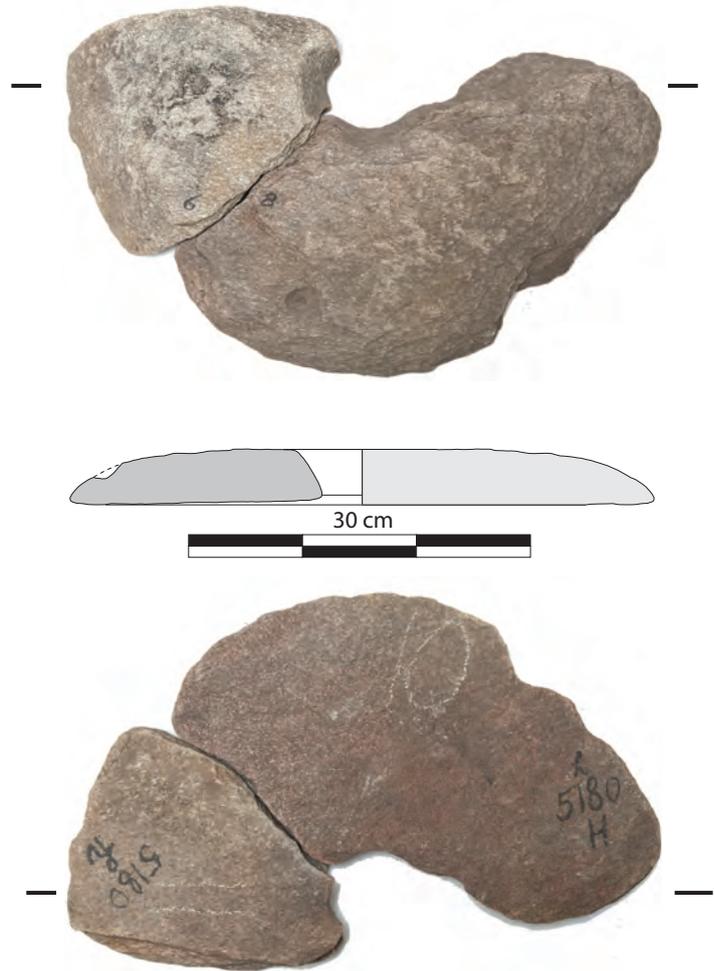
Context: Found in House 2 close to a stone-built fireplace with cat. 31 resting partly on top of it (possibly *in situ*).

Dating: Viking Period, 800-1050 AD.

Bibliography: Petersen 1933: 38-54.

Cat. no. 31

Inv. number:	S5180 h (2)
Provenance:	Store Svela farm no. 32 and Vigesa farm no. 33, Bjerkreim k.
Site name:	Storrsheia, House 2
% preserved:	50
No. of fragments:	2
Max diameter (cm):	52
Total height (cm):	5
Thickness (cm):	4.6
Index t % of max. diam.:	8.8
Circumference:	Irregular
Contour (edge):	Curved convergent
Grinding surface, shape:	Concave
Grinding surface:	Used
Category:	Upper stone
Upper surface:	Convex
Eye diameter, max (cm):	11
Eye diameter, min (cm):	7
Eye circumference:	Oval
Eye section:	Conical
Handle socket:	Vertical
Number of handle sockets:	1
Handle socket, diam. (cm):	2.5
Handle socket, depth (cm):	1.5
Rynd slots:	No rynd slots
Rib:	No rib
Dressing:	No dressing
Grinding surf., height (cm):	Not determinable
Origin:	Erratic block
Rock type:	Mica-rich, foliated gneiss with small, pink garnets (MP)
Quern type:	RQ-U II c1



Description: Two fragments of upper stone that connect despite damages to one of the breaks. The largest fragment c. 1/3 of the stone, radius 21 cm, with part of the eye. Top and grinding surface largely missing, trace of handle socket 4.5 cm from outer edge. The other fragment is c. 1/6 of the stone, radius 22 cm, with preserved top and grinding surface and fraction of the eye.

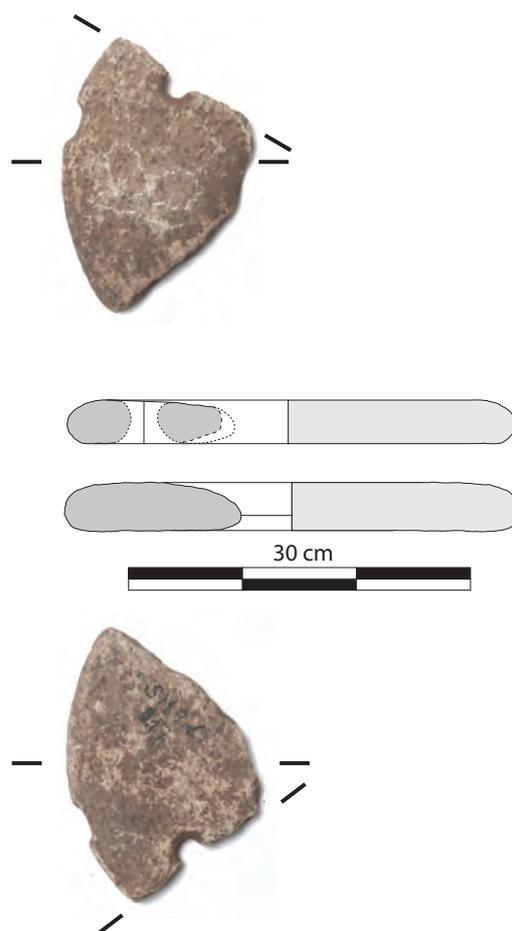
Context: Found together with cat. 30.

Dating: Viking Period, 800-1050 AD.

Bibliography: Petersen 1933: 38-54.

Cat. no. 32

Inv. number:	S5189 d fnr. 17
Provenance:	Eigeland, farm no. 41, Bjerkreim k.
Site name:	Liknes
% preserved:	20
No. of fragments:	1
Max diameter (cm):	40
Min diameter (cm):	38
Total height (cm):	4.5
Thickness (cm):	4.4
Index t % of max. diam.:	11
Circumference:	Regular
Contour (edge):	Rounded
Grinding surface, shape:	Concave
Grinding surface:	Used
Category:	Upper stone
Upper surface:	Flat
Eye diameter, min (cm):	8
Eye circumference:	Not determinable
Eye section:	Conical
Handle socket:	Vertical
Number of handle sockets:	1
Handle socket, diam. (cm):	3.8
Handle socket, depth (cm):	Totally perforated
Rynd slots:	Not determinable
Rib:	No rib
Dressing:	No dressing
Grinding surf., height (cm):	Not determinable
Origin:	Not determinable
Rock type:	Granite (AKM)
Quern type:	RQ-U IIa1



Description: Sector, approx. 20% of upper stone. Only a fraction of the eye is preserved, smallest diameter at the grinding surface, c. 6 cm in diameter. Although the grinding surface is deteriorated, a part shows wear polish. At the shortest break half a handle socket, totally perforated. On the edge there is a rounded dent that seems to be intentional. The fragment is scorched.

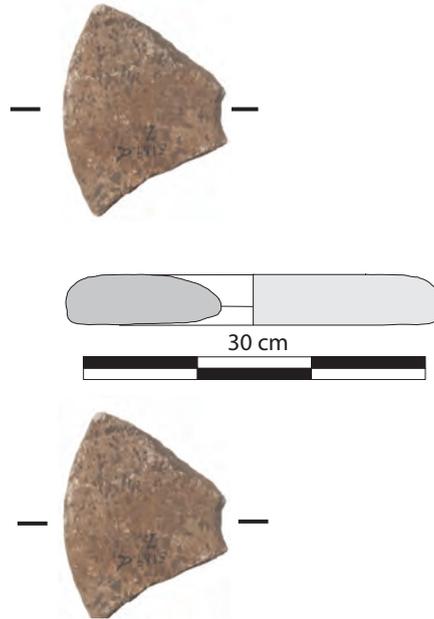
Context: Found on top of a charcoal layer in a longhouse.

Dating: Migration Period, *t.a.q.* c. 500 AD.

Bibliography: Petersen 1933: 55-56, Pl. XXXIII: 1, Pl. LI: 2.

Cat. no. 33

Inv. number:	S5189 h fnr. 7
Provenance:	Eigeland, farm no. 41, Bjerkreim k.
Site name:	Liknes
% preserved:	20
No. of fragments:	1
Max diameter (cm):	33
Total height (cm):	5
Thickness (cm):	4.6
Index t % of max. diam.:	13.9
Circumference:	Regular
Contour (edge):	Rounded
Grinding surface, shape:	Concave
Grinding surface:	Used
Category:	Upper stone
Upper surface:	Flat
Eye diameter, max (cm):	10
Eye diameter, min (cm):	5
Eye circumference:	Oval
Eye section:	Biconical
Handle socket:	Not determinable
Rynd slots:	Not determinable
Rib:	No rib
Dressing:	Pecking
Grinding surf., height (cm):	Not determinable
Origin:	Not determinable
Rock type:	Granite (AKM)
Quern type:	RQ-U IIa



Description: Sector, approx. 20% of upper stone. Breaks l: 13.5 and 14 cm. Eye worn smooth, grinding surface with random pecking, worn smooth at the perimeter. Same rock as cat. 32.

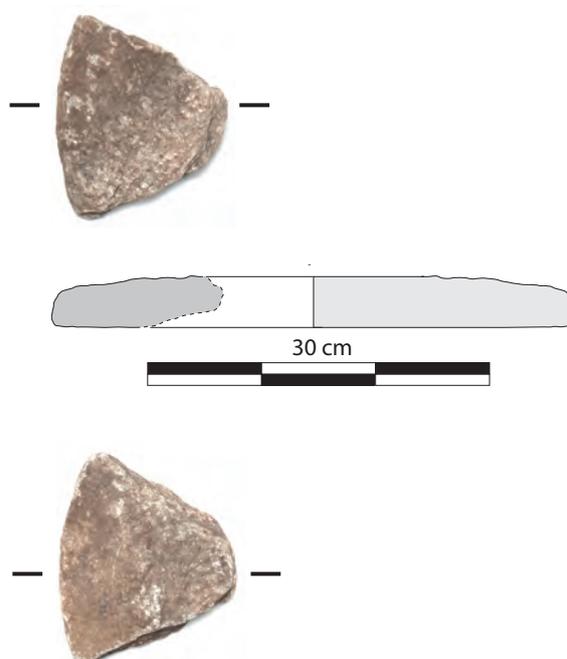
Context: Found in the NE corner of the same longhouse as cat. 32.

Dating: Migration Period, *t.a.q.* c. 500 AD.

Bibliography: Petersen 1933: 55-56, Pl. XXXIII: 1, Pl. LI: 2.

Cat. no. 34

Inv. number:	S4787 p (2)
Provenance:	Eige store, farm no. 52, Eigersund
Site name:	Birkeland House 4
% preserved:	15
No. of fragments:	2
Max diameter (cm):	46
Rim height (cm):	3
Total height (cm):	4.2
Circumference:	Regular
Contour (edge):	Straight convergent
Grinding surface, shape:	Planar
Grinding surface:	Used
Category:	Lower stone
Grinding surf., height (cm):	Not determinable
Base:	Worked
Eye:	Not preserved
Lip:	Not determinable
Dressing:	No dressing
Grinding surf., height (cm):	Not determinable
Origin:	Quarry
Rock type:	Garnet mica schist, unknown provenance. Not from Hyllestad (MP)
Quern type:	RQ-L 3



Description: Segment split in two connecting “slices” along original bedding plane, only the outer 7 cm of the grinding surface is preserved, showing traces of concentric wear marks. The innermost 5.5 cm is missing. Base almost flat, showing little work.

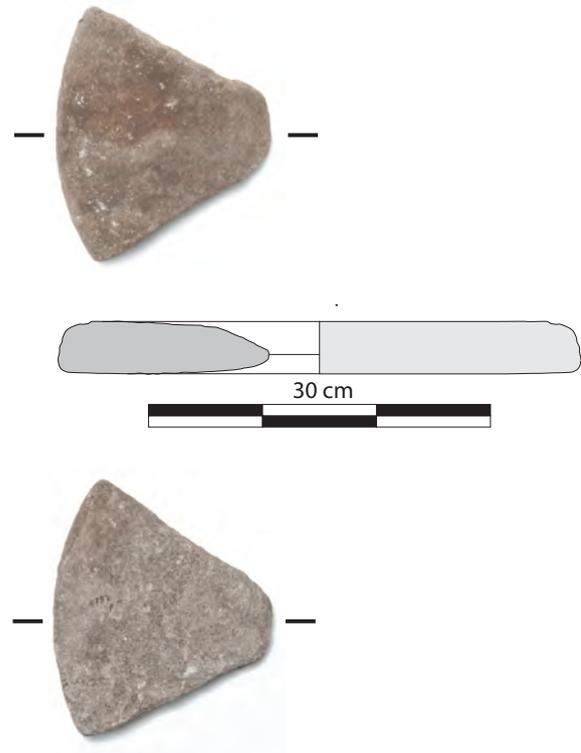
Context: Found in House 4 at the deserted farm of Birkeland.

Dating: Medieval Period, 1100-1350 AD.

Bibliography: Petersen 1933: 11-12, Pl. II fig. 5, Pl. III fig. 1-2, Pl. XLII fig. 2.

Cat. no. 35

Inv. number:	S4787 p (3)
Provenance:	Eige store, farm no. 52, Eigersund k.
Site name:	Birkeland House 4
% preserved:	15
No. of fragments:	1
Max diameter (cm):	46
Rim height (cm):	4
Thickness (cm):	4.2
Index t % of max. diam.:	9.1
Circumference:	Regular
Contour (edge):	Straight convergent
Grinding surface, shape:	Concave
Grinding surface:	Used
Category:	Upper stone
Upper surface:	Flat
Eye diameter, max (cm):	7
Eye circumference:	Not determinable
Eye section:	Not determinable
Handle socket:	Not determinable
Rynd slots:	No rynd slots
Rib:	No rib
Dressing:	Pecking
Grinding surf., height (cm):	Not determinable
Origin:	Erratic block
Rock type:	Syenite (MP)
Quern type:	RQ-U IIa



Description: Sector of regular, well worked upper stone, grinding surface has both randomly pecked and smoothly worn areas. Eye not preserved, parts of hopper preserved in the form of a regular depression towards the centre. Radius of grinding surface convex in cross-section. Breaks l: 18 cm.

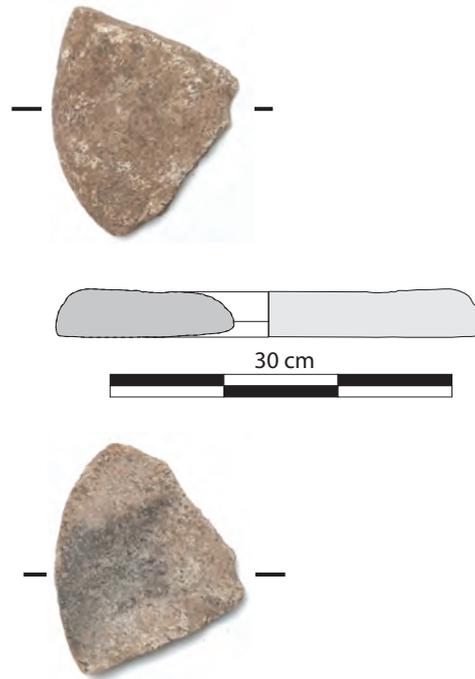
Context: Found in House 4 at the deserted farm of Birkeland.

Dating: Medieval Period, 1100-1350 AD.

Bibliography: Petersen 1933: 11-12, Pl. II fig. 5, Pl. III fig. 1-2, Pl. XLII fig. 2.

Cat. no. 36

Inv. number:	S4787 p (4)
Provenance:	Eige store, farm no. 52, Eigersund k.
Site name:	Birkeland House 4
% preserved:	20
No. of fragments:	1
Max diameter (cm):	38
Min diameter (cm):	36
Total height (cm):	4.5
Thickness (cm):	4.5
Index t % of max. diam.:	11.8
Circumference:	Regular
Contour (edge):	Curved convergent
Grinding surface, shape:	Concave
Grinding surface:	Not determinable
Category:	Upper stone
Upper surface:	Flat
Eye diameter, max (cm):	Not determinable
Eye diameter, min (cm):	6
Eye circumference:	Circular
Eye section:	Biconical
Handle socket:	Not determinable
Rynd slots:	Not determinable
Rib:	No rib
Dressing:	Pecking
Grinding surf., height (cm):	Not determinable
Origin:	Quarry (?)
Rock type:	Gabbroid rock (MP)
Quern type:	RQ-U IIa



Description: Sector of oval stone with flat surface. Only partially preserved eye, min. diam: 6 cm. Grinding surface has random pecking with small parts broken off. Parts of upper surface also missing at both breaks. Radius of grinding surface convex in cross-section. Breaks l: 14.5 and 15.5 cm.

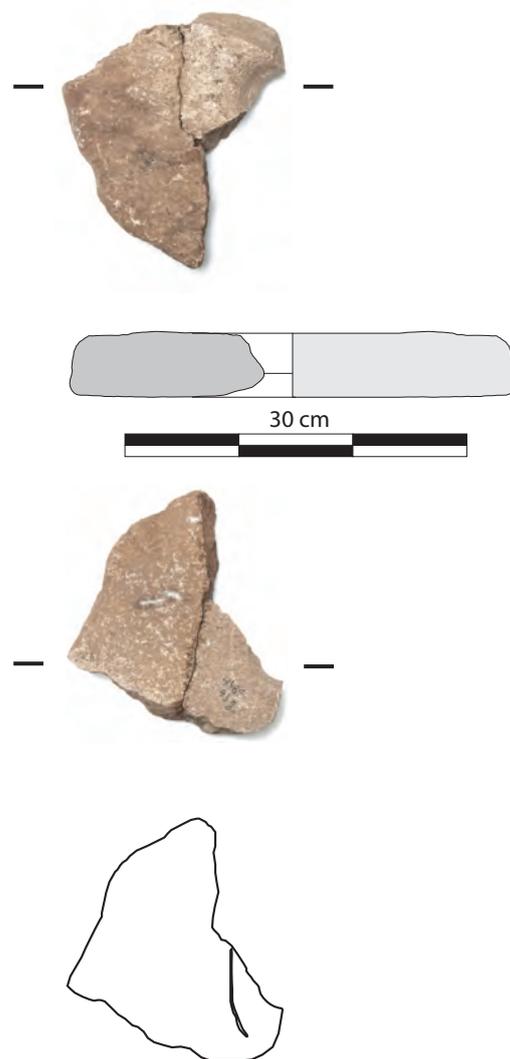
Context: Found in House 4 of the deserted farm of Birkeland.

Dating: Medieval Period, 1100-1350.

Bibliography: Petersen 1933: 11-12, Pl. II fig. 5, Pl. III fig. 1-2, Pl. XLII fig. 2.

Cat. no. 37

Inv. number:	4789 g fnr. 93
Provenance:	Eige store, farm no. 52, Eigersund k.
Site name:	Birkeland House 1
% preserved:	20
No. of fragments:	2
Conservation treatment:	Glued
Max diameter (cm):	40
Min diameter (cm):	34
Total height (cm):	6
Rim height (cm):	5
Thickness (cm):	5.5
Index t % of max. diam.:	13.75
Circumference:	Irregular
Contour (edge):	Straight convergent
Grinding surface, shape:	Concave
Grinding surface:	Used
Category:	Upper stone
Upper surface:	Flat
Eye diameter, max (cm):	8
Eye diameter, min (cm):	5
Eye circumference:	Not determinable
Eye section:	Biconical
Handle socket:	Not determinable
Rynd slots:	Not determinable
Rib:	No rib
Dressing:	Pecking, furrow
Grinding surf., height (cm):	Not determinable
Origin:	Not determinable
Rock type:	Not determined
Quern type:	RQ-U IIa



Description: Two fragments of upper stone with irregular circumference, diam.: 34-40 cm. Edge straight convergent. Smallest fragment has a fraction of biconical eye preserved, min. diameter at 2 cm from the grinding surface. Grinding surface is randomly pecked and has one shallow, curved furrow, approx. 1.2 cm wide, running from the eye towards the edge.

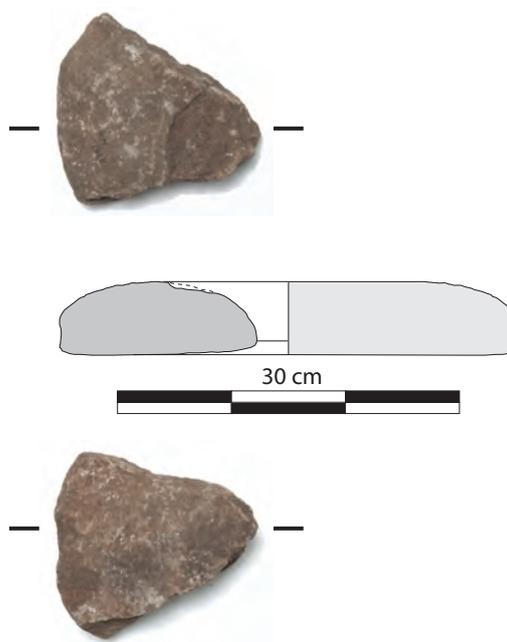
Context: Found in House 1 at the deserted farm of Birkeland.

Dating: Late Migration Period, *t.a.q.* 550 AD.

Bibliography: Petersen 1933: 5-7, Pl. I fig. 1-3, Pl. XX, Pl. XLI fig. 1.

Cat. no. 38

Inv. number:	S4789 g fnr. 15
Provenance:	Eige store, farm no. 52, Eigersund k.
Site name:	Birkeland House 1
% preserved:	12
No. of fragments:	1
Max diameter (cm):	40 (estimated)
Total height (cm):	7
Rim height (cm):	4
Thickness (cm):	6.7
Index t % of max. diam.:	16.75
Circumference:	Regular
Contour (edge):	Straight convergent
Grinding surface, shape:	Planar
Grinding surface:	Used
Category:	Upper stone
Upper surface:	Convex
Eye diameter, max (cm):	Not determinable
Eye circumference:	Not determinable
Eye section:	Not determinable
Handle socket:	Not determinable
Rynd slots:	Not determinable
Rib:	Not determinable
Dressing	Pecking
Grinding surf., height (cm):	Not determinable
Origin:	Not determinable
Rock type:	Granite (MP)
Quern type:	RQ-U IIa



Description: Small sector of upper stone, upper surface damaged at centre, edge of hopper missing, only a small fraction of eye preserved at grinding surface, larger fraction preserved at upper surface. Breaks l: 17.5 and 16.5 cm. Grinding surface with random pecking.

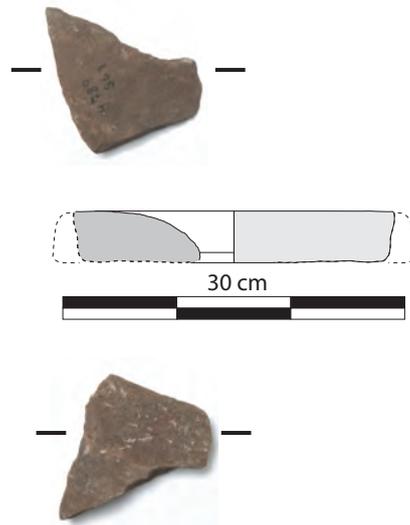
Context: Found in House 1 at the deserted farm of Birkeland.

Dating: Late Migration Period, *t.a.q.* 550 AD.

Bibliography: Petersen 1933: 5-7, Pl. I fig. 1-3, Pl. XX, Pl. XLI fig. 1.

Cat. no. 39

Inv. number:	S4789 g fnr. 86
Provenance:	Eige store, farm no. 52, Eigersund k.
Site name:	Birkeland House 1
% preserved:	?
No. of fragments:	1
Max diameter (cm):	Not determinable
Thickness (cm):	4.8
Circumference:	Not determinable
Contour (edge):	Not determinable
Grinding surface, shape:	Planar
Grinding surface:	Used
Category:	Upper stone
Upper surface:	Not determinable
Eye diameter, max (cm):	Not determinable
Eye diameter, min (cm):	Not determinable
Eye circumference:	Not determinable
Eye section:	Not determinable
Handle socket:	Not determinable
Rynd slots:	Not determinable
Rib:	Not determinable
Dressing:	Pecking
Grinding surf., height (cm):	Not determinable
Origin:	Not determinable
Rock type:	Gabbro (MP)
Quern type:	RQ-U



Description: Irregular, four-sided fragment. Three sides are breaks, l: 13, 12.5 and 9 cm. The fourth, l: 5 cm, with damaged part of eye. Grinding surface with random pecking.

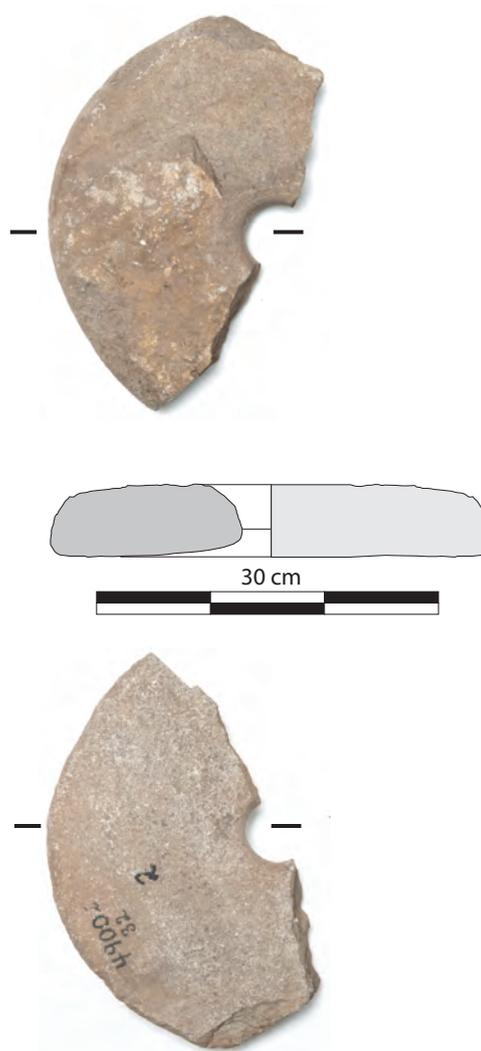
Context: Found in House 1 at the deserted farm of Birkeland.

Dating: Late Migration Period, *t.a.q.* 550 AD.

Bibliography: Petersen 1933: 5-7, Pl. I fig. 1-3, Pl. XX, Pl. XLI fig. 1.

Cat. no. 40

Inv. number:	S4900 i fnr. 32
Provenance:	Eige store, farm no. 52, Eigersund k.
Site name:	Birkeland House 2
% preserved:	50
No. of fragments:	1
Max diameter (cm):	40
Min diameter (cm):	37
Total height (cm):	6.5
Rim height (cm):	4
Thickness (cm):	5.7
Index t % of max. diam.:	14.25
Circumference:	Regular
Contour (edge):	Curved convergent
Grinding surface, shape:	Concave
Grinding surface:	Used
Category:	Upper stone
Upper surface:	Flat
Eye diameter, max (cm):	9.5
Eye diameter, min (cm):	5.3
Eye circumference:	Oval
Eye section:	Biconical
Handle socket:	Not determinable
Rynd slots:	No rynd slots
Rib:	No rib
Dressing:	Pecking
Grinding surf., height (cm):	1.2
Origin:	Erratic block (?)
Rock type:	Anorthosite (JMD)
Quern type:	RQ-U IIa



Description: Slightly less than half of an upper stone. Flat upper side with a large section broken off. Eye heavily worn on one side (probably due to uneven rotation). Part of grinding surface broken off (at the most damaged section). Dressed with pecking marks at the grinding surface, some smooth wear at the perimeter.

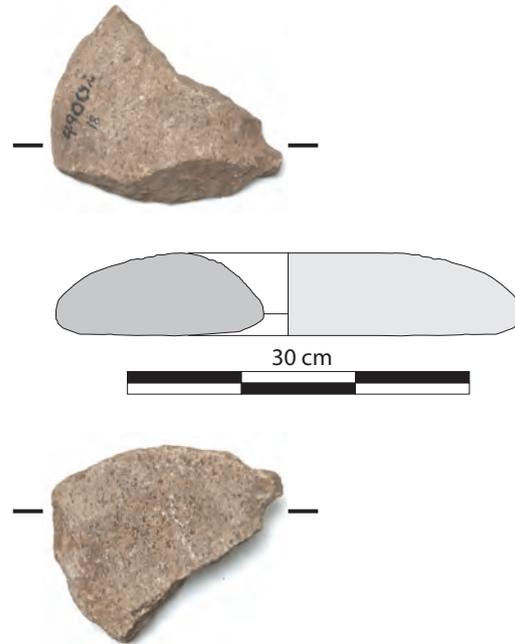
Context: Found in House 2 at the deserted farm of Birkeland.

Dating: Migration Period, *t.a.q.* 550 AD

Bibliography: Petersen 1933: 7-9, Pl. I fig. 4-7, Pl. XXI, Pl. XLI fig. 2.

Cat. no. 41

Inv. number:	S4900 i fnr. 18
Provenance:	Eige store, farm no. 52, Eigersund k.
Site name:	Birkeland House 2
% preserved:	12
No. of fragments:	1
Max diameter (cm):	42
Min diameter (cm):	40
Total height (cm):	7.2
Thickness (cm):	7.2
Index t % of max. diam.:	17.14
Circumference:	Not determinable
Contour (edge):	Curved convergent
Grinding surface, shape:	Concave
Grinding surface:	Used
Category:	Upper stone
Upper surface:	Convex
Eye diameter, max (cm):	10
Eye diameter, min (cm):	4.2
Eye circumference:	Oval
Eye section:	Biconical
Handle socket:	Not determinable
Rynd slots:	Not determinable
Rib:	No rib
Dressing:	Pecking
Grinding surf., height (cm):	Not determinable
Origin:	Erratic block
Rock type:	Gabbro (AKM)
Quern type:	RQ-U IIb



Description: Irregular sector, approx. 1/8 of upper stone, breaks l: 20 and 16.5 cm, chord l: 15 cm. Approx. 1/4 of eye preserved. Grinding surface has random pecking and two smoothly worn sections.

Context: Found in House 2 at the deserted farm of Birkeland.

Dating: Migration Period, *t.a.q.* 550 AD.

Bibliography: Petersen 1933: 7-9, Pl. I fig. 4-7, Pl. XXI, Pl. XLI fig. 2.

Cat. no. 42

Inv. number:	S4900 i fnr. 21
Provenance:	Eige store, farm no. 52, Eigersund k.
Site name:	Birkeland House 2
% preserved:	20
No. of fragments:	1
Max diameter (cm):	42
Rim height (cm):	3.5
Thickness (cm):	4
Index t % of max. diam.:	9.5
Circumference:	Regular
Contour (edge):	Straight divergent
Grinding surface, shape:	Concave
Grinding surface:	Used
Category:	Upper stone
Upper surface:	Irregular
Eye diameter, max (cm):	8
Eye diameter, min (cm):	4
Eye circumference:	Not determinable
Eye section:	Biconical
Handle socket:	Not determinable
Rynd slots:	Not determinable
Rib:	Not determinable
Dressing:	Pecking
Grinding surf., height (cm):	Not determinable
Origin:	Quarry (?)
Rock type:	Not determined - Granite (?)
Quern type:	RQ-U IIa



Description: Irregular sector, approx. 20% of upper stone with most of upper surface missing. The preserved part of the upper surface is flat; the edge is straight divergent. Grinding surface is dressed with pecking marks, with parts missing at one of the breaks. Only a fraction of the eye is preserved, smoothly worn. Breaks l: 18, 10.5 and 13 cm.

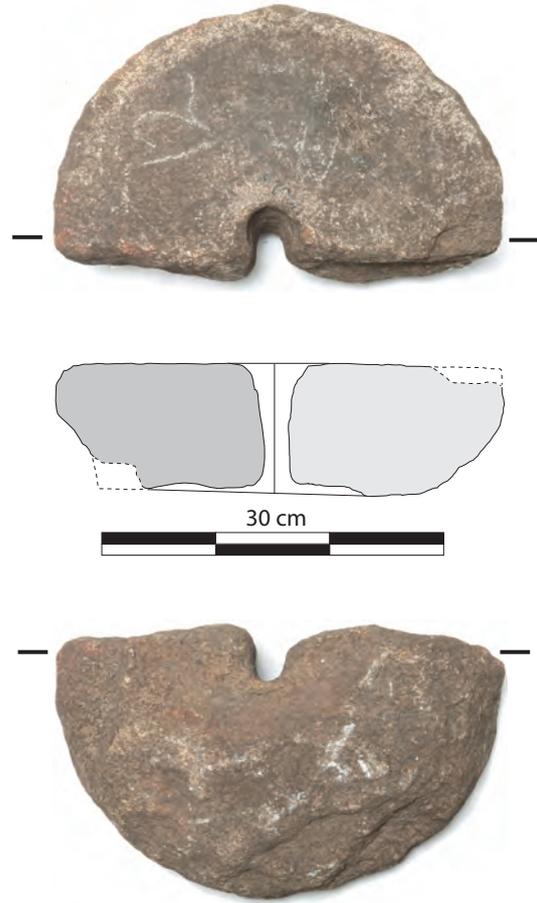
Context: Found in House 2 at the deserted farm of Birkeland.

Dating: Migration Period, *t.a.q.* 550 AD.

Bibliography: Petersen 1933: 7-9, Pl. I fig. 4-7, Pl. XXI, Pl. XLI fig. 2.

Cat. no. 43

Inv. number:	S4902 s
Provenance:	Åmdal, farm no. 28, Eigersund k.
Site name:	Hønnland
% preserved:	50
No. of fragments:	1
Max diameter (cm):	39
Total height (cm):	12
Circumference:	Regular
Contour (edge):	Curved convergent
Grinding surface, shape:	Convex
Grinding surface:	Used
Category:	Lower stone
Base:	Irregular
Eye:	Total perforation
Eye diameter, max (cm):	4.1
Eye diameter, min (cm):	2.8
Lip:	No lip
Dressing:	Pecking
Grinding surf., height (cm):	0.2
Origin:	Erratic block
Rock type:	Granite
Quern type:	RQ-L 1a



Description: Half of lower stone with a totally perforated conical eye, oval in circumference. 2.3 cm from the grinding surface the eye has a small step from where the diameter increases, maximum diameter towards the grinding surface. The grinding surface, bearing faint traces of random pecking, is worn, especially around the eye and along the skirt at the periphery.

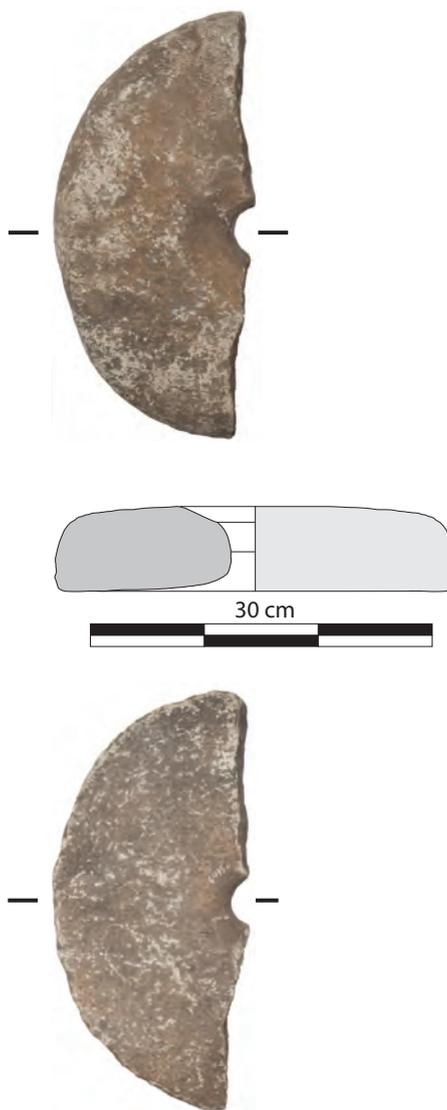
Context: Found in the house of the deserted farm of Hønnland.

Dating: Probably Migration Period, re-used as building material in the 14th century.

Bibliography: Petersen 1933: 19-21, Pl. XXIV fig. 2, Pl. XLIV, fig. 2.

Cat. no. 44

Inv. number:	S6435 e
Provenance:	Hogstad store, farm no. 93, Eigersund k.
Site name:	Store Veddågåsen
% preserved:	45
No. of fragments:	1
Max diameter (cm):	38
Min diameter (cm):	36
Total height (cm):	8.4
Thickness (cm):	8.3
Index t % of max. diam.:	21.8
Circumference:	Regular
Contour (edge):	Curved convergent
Grinding surface, shape:	Concave
Grinding surface:	Used
Category:	Upper stone
Upper surface:	Convex
Eye diameter, max (cm):	10
Eye diameter, min (cm):	4.2
Eye circumference:	Oval
Eye section:	Biconical
Handle socket:	Not determinable
Rynd slots:	Not determinable
Rib:	No rib
Dressing:	Pecking
Grinding surf., height (cm):	0.8
Origin:	Erratic block
Rock type:	Granite
Quern type:	RQ-U IIa



Description: Slightly less than half an upper stone. Eye worn smooth. Grinding surface with random pecking, worn smooth along a 5 cm wide band around the eye and 1 cm along the perimeter. Distinctly funnel-shaped hopper. A groove runs around the edge of the circumference 2 cm from the grinding surface (to lodge a type of belt to fasten a handle?).

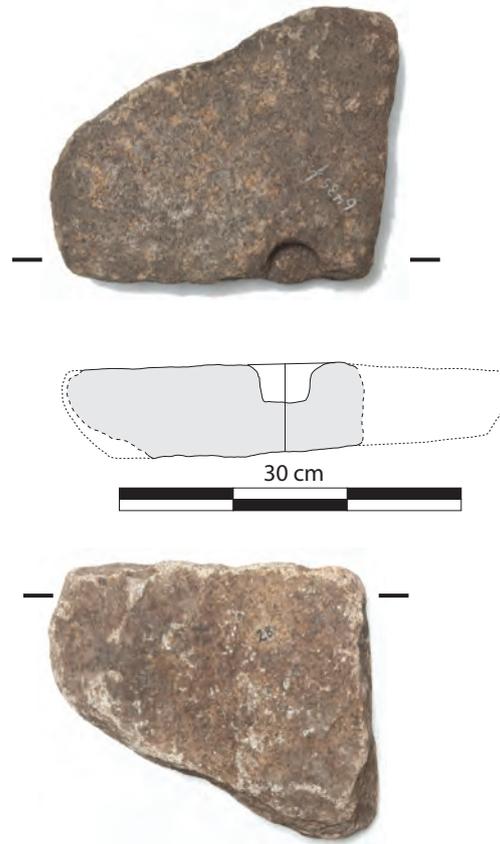
Context: Found in the house of the deserted farmstead of Store Veddågåsen in secondary position.

Dating: *T.a.q.* c. 400 AD, antedating the last occupation phase of the house which is dated to the Migration Period.

Bibliography: Petersen 1939: 36-40.

Cat. no. 45

Inv. number:	S6435 f
Provenance:	Hogstad store, farm no. 93, Eigersund k.
Site name:	Store Veddågåsen
% preserved:	30
No. of fragments:	1
Max diameter (cm):	43
Min diameter (cm):	36
Total height (cm):	8.5
Circumference:	Irregular
Contour (edge):	Sinous
Grinding surface, shape:	Convex
Grinding surface:	Used
Category:	Lower stone
Base:	Irregular
Eye:	Partial perforation
Eye depth (cm):	3.6
Eye diameter, max (cm):	4.5
Eye diameter, min (cm):	3.6
Lip:	No lip
Dressing:	Pecking
Grinding surf., height (cm):	0.4
Origin:	Erratic block
Rock type:	Granite
Quern type:	RQ-L 2



Description: Fragment of lower stone, slightly more than 1/4. Rectangular with rounded corners. Heavily pecked grinding surface, partial flaking at one edge. Scorched.

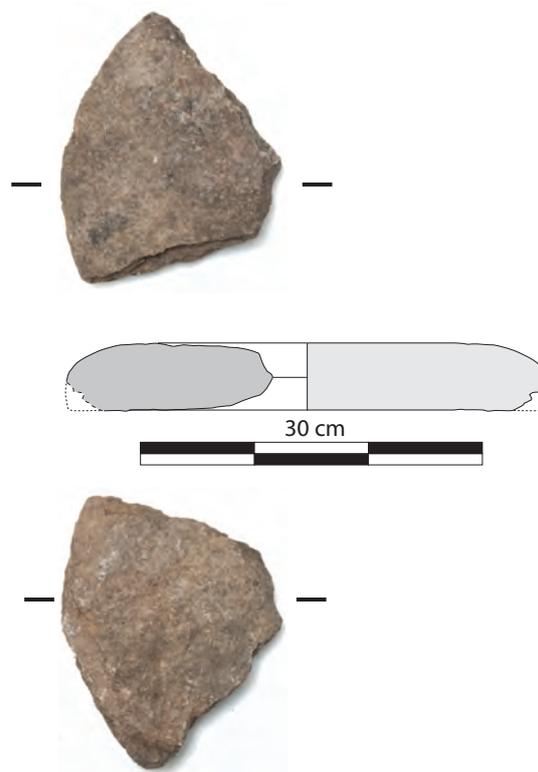
Context: Found as a part of the stone paving in the byre of the house at the deserted farmstead of Store Veddågåsen.

Dating: *T.a.q.* c. 400 AD, antedating the last occupation phase of the house which is dated to the Migration Period.

Bibliography: Petersen 1939: 36-40.

Cat. no. 46

Inv. number:	S11415 m
Provenance:	Hafsøy, farm no. 46, Eigersund k.
Site name:	Høgevollen House V
% preserved:	20
No. of fragments:	1
Max diameter (cm):	43
Thickness (cm):	5.9
Index t % of max. diam.:	13.7
Circumference:	Regular
Contour (edge):	Rounded
Grinding surface, shape:	Concave
Grinding surface:	Used
Category:	Upper stone
Upper surface:	Flat
Eye diameter, max (cm):	8.6
Eye diameter, min (cm):	6.2
Eye circumference:	Circular
Eye section:	Biconical
Handle socket:	Not determinable
Rynd slots:	Not determinable
Rib:	No rib
Dressing:	No dressing
Grinding surf., height (cm):	Not determinable
Origin:	Erratic block
Rock type:	Anorthosite (AKM)
Quern type:	RQ-U IIb



Description: C. 20% of upper stone. Flat upper surface with even transition to a rounded edge. The edge is very damaged along the grinding surface. Eye with a marked step at the top surface, very worn along the grinding surface.

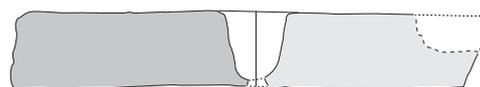
Context: Found in a posthole in House V at Høgevollen.

Dating: Roman Iron Age/Migration Period. Two ¹⁴C-datings (T-12523, T-12528) from the house, 1645+/- 65 and 1660+/- 65 yield the time span 345-530 cal AD and 340-445 cal AD.

Bibliography: Steen 1996.

Cat. no. 47

Inv. number:	S11415 n
Provenance:	Hafsøy, farm no. 46, Eigersund k.
Site name:	Høgevollen House V
% preserved:	80
No. of fragments:	>16
Conservation treatment:	Glued
Max diameter (cm):	44.5
Total height (cm):	8
Circumference:	Irregular
Contour (edge):	Straight convergent
Grinding surface, shape:	Convex
Grinding surface:	Used
Category:	Lower stone
Base:	Regular
Eye:	Partial perforation
Eye depth (cm):	6.5
Eye diameter, max (cm):	4.9
Lip:	Lip
Dressing:	Pecking
Grinding surf., height (cm):	0.4
Origin:	Erratic block
Rock type:	Gneiss
Quern type:	RQ-L 2



30 cm



Description: Lower stone approx. 80 %, at least 16 fragments glued together. Circumference rectangular with rounded corners, the base is flat and regular. The edges are straight, one side converging, the other side diverging, i.e. cross-section rhomboidal. It might have been hewn from a slab with the same cross-section. The grinding surface is worn, and shows some random pecking.

Context: Found in secondary position as base lining in a posthole in House V at Høgevollen.

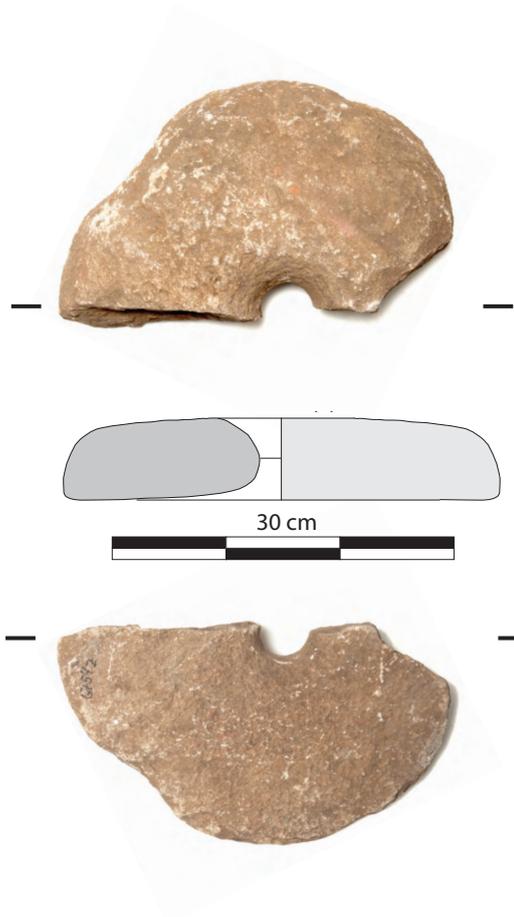
Dating: Late Roman Iron Age/Migration Period. Two ¹⁴C-datings from the house, 1645±65 and 1660±65 gives the time span 345-530 cal AD and 340-445 cal AD.

Bibliography: Steen 1996.

The Norwegian Millstone Landscape

Cat. no. 48

Inv. number:	S6754 z (1)
Provenance:	Obrestad, farm no. 11, Hå k.
% preserved:	45
No. of fragments:	1
Max diameter (cm):	40
Total height (cm):	7.5
Thickness (cm):	6.7
Index t % of max. diam.:	16.75
Circumference:	Regular
Contour (edge):	Curved convergent
Grinding surface, shape:	Concave
Grinding surface:	Used
Category:	Upper stone
Upper surface:	Convex
Eye diameter, max (cm):	9.6
Eye diameter, min (cm):	4.5
Eye circumference:	Oval
Eye section:	Biconical
Handle socket:	Not determinable
Rynd slots:	Not determinable
Rib:	No rib
Dressing:	Pecking
Grinding surf., height (cm):	Not determinable
Origin:	Erratic block
Rock type:	Mica gneiss (AKM)
Quern type:	RQ-U IIa



Description: Approx. 45% of an upper stone damaged along the edge. Small part of the grinding surface flaked off. Grinding surface is mostly rough with random pecking, but partially polished by wear.

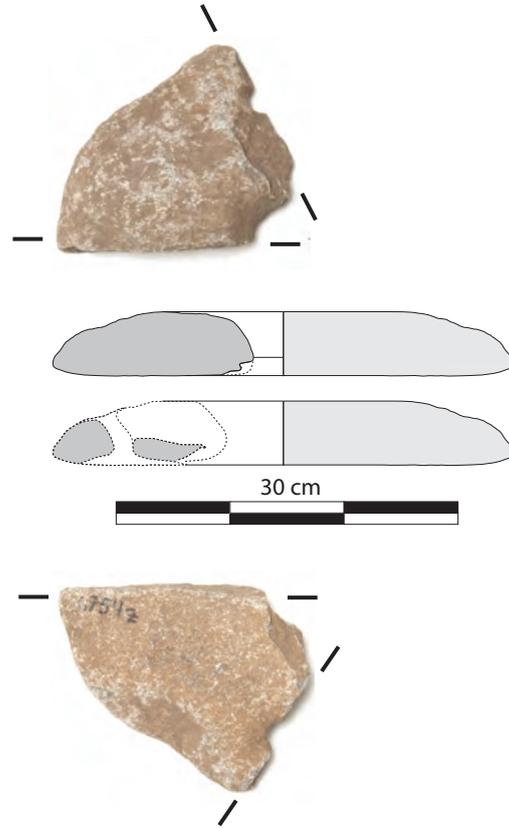
Context: Found in the remains of a house greatly damaged by later activities.

Dating: Late Roman Iron Age/Migration Period, c. 300-500 AD.

Bibliography: Unpublished; report by J. Petersen in the topographical archive at the AM.

Cat. no. 49

Inv. number:	S6754 z (2)
Provenance:	Obrestad, farm no. 11, Hå k.
% preserved:	20
No. of fragments:	1
Max diameter (cm):	42
Total height (cm):	5.6
Thickness (cm):	5.5
Index t % of max. diam.:	13.09
Circumference:	Irregular
Contour (edge):	Rounded
Grinding surface, shape:	Concave
Grinding surface:	Used
Category:	Upper stone
Upper surface:	Convex
Eye diameter, max (cm):	8
Eye diameter, min (cm):	6
Eye circumference:	Not determinable
Eye section:	Conical
Handle socket:	Inclined outwards
Number of handle sockets:	1
Handle socket, diam. (cm):	2.3
Handle socket, depth (cm):	Totally perforated
Rynd slots:	Not determinable
Rib:	No rib
Dressing:	Pecking
Grinding surf., height (cm):	Not determinable
Origin:	Erratic block
Rock type:	Mica gneiss (AKM)
Quern type:	RQ-U IIc1



Description: Sector, approx. 20% of upper stone, damaged along the upper surface and at the grinding surface near the eye. Grinding surface with random pecking. Slightly curved, biconical handle socket 5.6 cm from present edge.

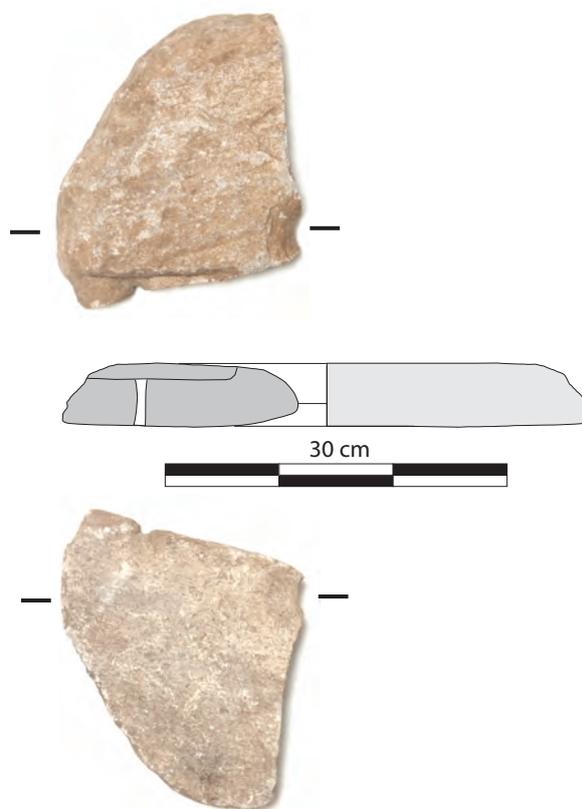
Context: Found in the remains of a house greatly damaged by later activities.

Dating: Late Roman Iron Age/Migration Period, c. 300-500 AD.

Bibliography: Unpublished; report by J. Petersen in the topographical archive at the AM.

Cat. no. 50

Inv. number:	S6754 z (3)
Provenance:	Obrestad, farm no. 11, Hå k.
% preserved:	25
No. of fragments:	1
Max diameter (cm):	47
Min diameter (cm):	44
Total height (cm):	6
Thickness (cm):	5.5
Index t % of max. diam.:	11.7
Circumference:	Irregular
Contour (edge):	Curved convergent
Grinding surface, shape:	Concave
Grinding surface:	Used
Category:	Upper stone
Upper surface:	Flat
Eye diameter, max (cm):	10
Eye diameter, min (cm):	5
Eye circumference:	Oval
Eye section:	Biconical
Handle socket:	Vertical
Number of handle sockets:	1
Handle socket, diam. (cm):	1
Handle socket, depth (cm):	Totally perforated
Radial slot	1
Rynd slots:	Not determinable
Rib:	No rib
Dressing	Pecking
Grinding surf., height (cm):	Not determinable
Origin:	Erratic block
Rock type:	Mica gneiss (AKM)
Quern type:	RQ-U IIa1



Description: Approx. 25% of an upper stone with flat upper surface. Small, biconical handle socket combined with horizontal, radial slot at one of the breaks. Grinding surface with random pecking, large parts polished by wear. Hopper very pronounced.

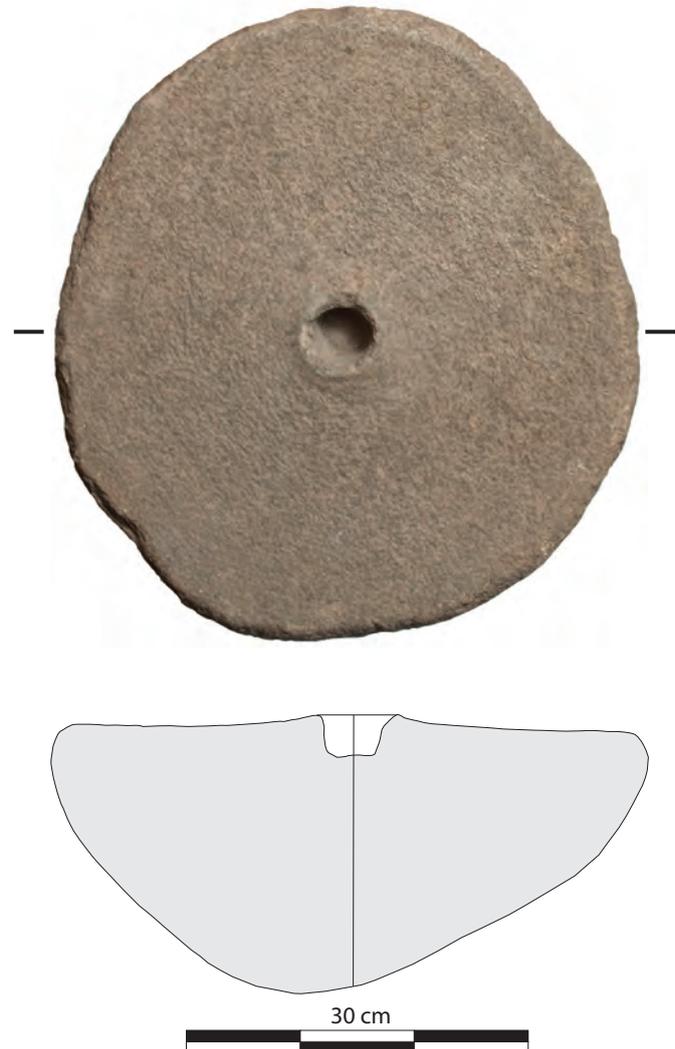
Context: Found in the remains of a house greatly damaged by later activities.

Dating: Late Roman Iron Age/Migration Period, c. 300-500 AD.

Bibliography: Unpublished; report by J. Petersen in the topographical archive at the AM.

Cat. no. 51

Inv. number:	S6754 ø
Provenance:	Obrestad, farm no. 11, Hå k.
% preserved:	100
No. of fragments:	1
Max diameter (cm):	56.5
Min diameter (cm):	51.5
Total height (cm):	30
Circumference:	Regular
Contour (edge):	Curved convergent
Grinding surface, shape:	Convex
Grinding surface:	Used
Category:	Lower stone
Base:	Rough
Eye:	Partial perforation
Eye depth (cm):	3.6
Eye diameter, max (cm):	5.2
Lip:	Lip
Dressing	Pecking
Grinding surf., height (cm):	1
Origin:	Water-rolled boulder
Rock type:	Granite (AKM)
Quern type:	RQ-L 2



Description: Lower stone, hewn from large water-rolled boulder. One end cut off; weighing at least 100 kg. Grinding surface has a pronounced lip, wear seen around the eye and in small areas near the outer edge. Grinding surface dressed by pecking, in both a random pattern and in concentric circles.

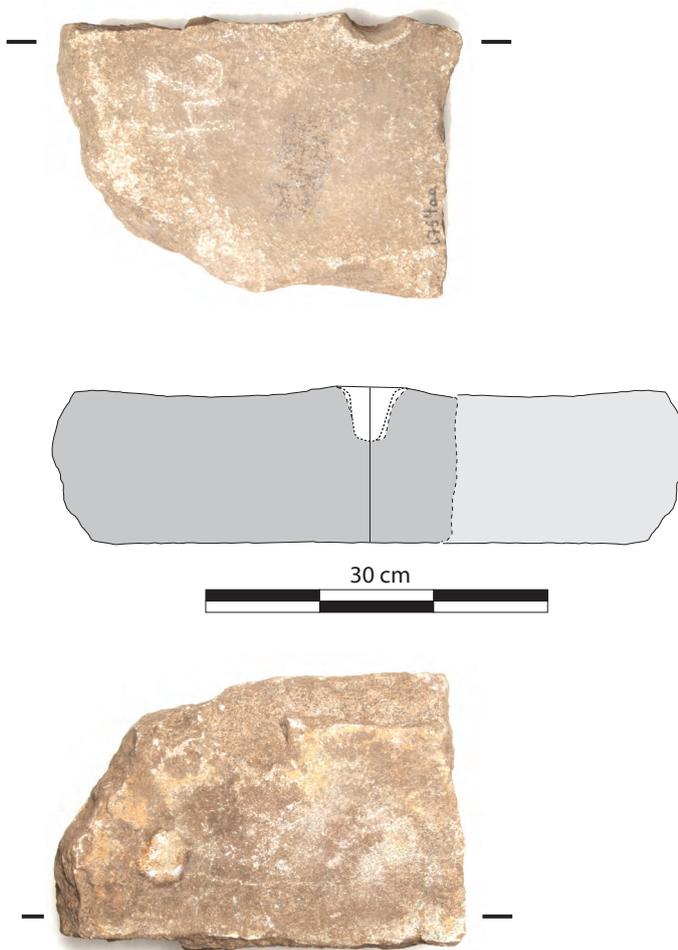
Context: Found in the remains of a house greatly damaged by later activities.

Dating: Late Roman Iron Age/Migration Period, c. 300-500 AD.

Bibliography: Unpublished; report by J. Petersen in the topographical archive at the AM.

Cat. no. 52

Inv. number:	S6754 aa
Provenance:	Obrestad, farm no. 11, Hå k.
% preserved:	25
No. of fragments:	1
Max diameter (cm):	56
Min diameter (cm):	48
Total height (cm):	14
Circumference:	Irregular
Contour (edge):	Rounded
Grinding surface, shape:	Convex
Grinding surface:	Used
Category:	Lower stone
Base:	Worked
Eye:	Partial perforation
Eye depth (cm):	5
Eye diameter, max (cm):	6
Lip:	Lip
Dressing	Pecking
Grinding surf., height (cm):	0.5
Origin:	Erratic block
Rock type:	Not determined
Quern type:	RQ-L 2



Description: Approx. 1/4 of lower stone, circumference rectangular with rounded corners, breaks l: 24 and 36.5 cm. Half of the eye preserved, partially perforated. The base is flat and seems partially polished. Grinding surface with random pecking and a pronounced lip.

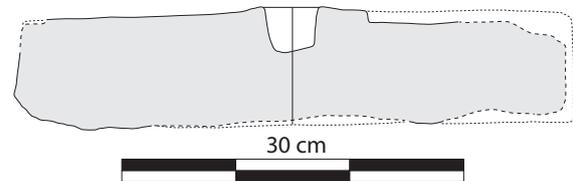
Context: Found in the remains of a house greatly damaged by later activities.

Dating: Late Roman Iron Age/Migration Period, c. 300-500 AD.

Bibliography: Unpublished; report by J. Petersen in the topographical archive at the AM.

Cat. no. 53

Inv. number:	S7698 1
Provenance:	Auda-Motland, farm no. 18, Hå k.
Site name:	Hanabergshagen
% preserved:	50
No. of fragments:	1
Max diameter (cm):	50
Min diameter (cm):	38
Total height (cm):	11
Circumference:	Irregular
Contour (edge):	Vertical
Grinding surface, shape:	Convex
Grinding surface:	Used
Category:	Lower stone
Base:	Irregular
Eye:	Partial perforation
Eye depth (cm):	4.1
Eye diameter, max (cm):	4.5
Lip:	Lip
Dressing:	Pecking
Grinding surf., height (cm):	0.9
Origin:	Erratic block
Rock type:	Mica schist with garnets (JMD, MP)
Quern type:	RQ-L 2



Description: Half of lower stone, circumference rectangular with rounded corners, l: 50 cm, width: 38 cm (estimated). Edge worked, vertical with rounded transition to base. Parts of grinding surface missing. Grinding surface worn around the eye and at perimeter, faint concentric areas of wear visible, otherwise grinding surface dressed by pecking in random pattern.

Context: Found outside the largest longhouse at Hanabergshagen.

Dating: Late Roman Iron Age/Migration Period, c. 300-550 AD.

Bibliography: Unpublished; report by J. Petersen in the topographical archive at the AM.

Cat. no. 54

Inv. number:	S7698 m
Provenance:	Auda-Motland, farm no. 18, Hå k.
Site name:	Hanabergshagen
% preserved:	60
No. of fragments:	1
Max diameter (cm):	35
Total height (cm):	9.9
Thickness (cm):	9.8
Index t % of max. diam.:	28
Circumference:	Irregular
Contour (edge):	Curved convergent
Grinding surface, shape:	Concave
Grinding surface:	Used
Category:	Upper stone
Upper surface:	Hemispherical
Eye diameter, max (cm):	9.3
Eye diameter, min (cm):	4.4
Eye circumference:	Oval
Eye section:	Biconical
Handle socket:	Not determinable
Rynd slots:	Not determinable
Rib:	No rib
Dressing:	Pecking
Grinding surf., height (cm):	Not determinable
Origin:	Erratic block
Rock type:	Micaceous gneiss or schist (MP)
Quern type:	RQ-U I



Description: Upper stone, approx. 60% preserved, grinding surface very damaged with only c. 25% preserved, random pecking with little wear on the preserved part. Biconical eye with step 2.5 cm from grinding surface.

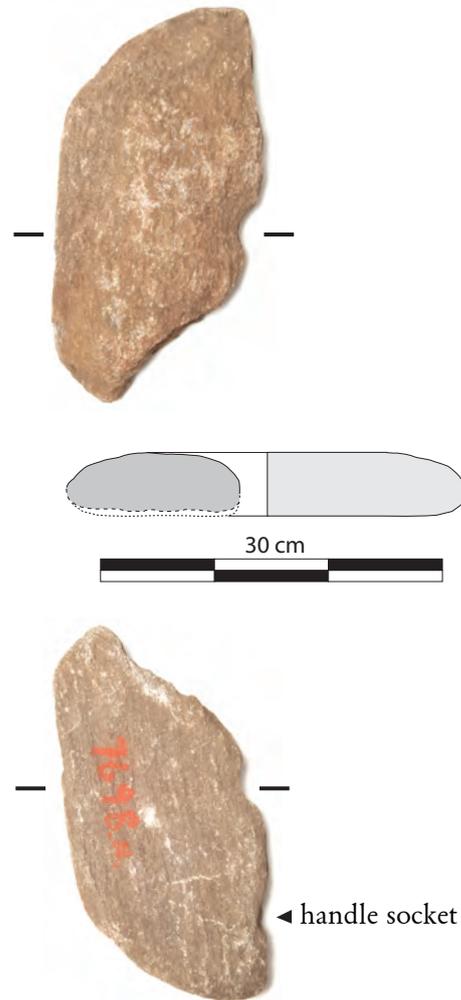
Context: Found in the largest longhouse at Hanabergshagen.

Dating: Late Roman Iron Age/Migration Period, c. 300-550 AD.

Bibliography: Unpublished; report by J. Petersen in the topographical archive at the AM.

Cat. no. 55

Inv. number:	S7698 n
Provenance:	Auda-Motland, farm no. 18, Hå k.
Site name:	Hanabergshagen
% preserved:	35
No. of fragments:	1
Max diameter (cm):	42
Total height (cm):	5.9
Thickness (cm):	5.2
Index t % of max. diam.:	12.38
Circumference:	Irregular
Contour (edge):	Curved convergent
Grinding surface, shape:	Concave
Grinding surface:	Used
Category:	Upper stone
Upper surface:	Convex
Eye diameter, max (cm):	8
Eye diameter, min (cm):	4.5
Eye circumference:	Oval
Eye section:	Conical
Handle socket:	Vertical
Number of handle sockets:	1
Handle socket, diam. (cm):	c. 2
Handle socket, depth (cm):	Totally perforated
Rynd slots:	No rynd slots
Rib:	No rib
Dressing:	No dressing
Grinding surf., height (cm):	Not determinable
Origin:	Erratic block
Rock type:	Micaceous gneiss or schist (MP)
Quern type:	RQ-U IIb1



Description: Approx. 35% of upper stone. Poorly preserved; scorched and highly deteriorated (crumbling). Original grinding surface flaked off. Part of handle socket preserved at the grinding surface as seen in one of the breaks, not preserved at upper surface. Eye conical, not worn smooth. Parts of the outer edge are broken off, creating a straight line. Breaks length at grinding surface: 17 and 17.5 cm.

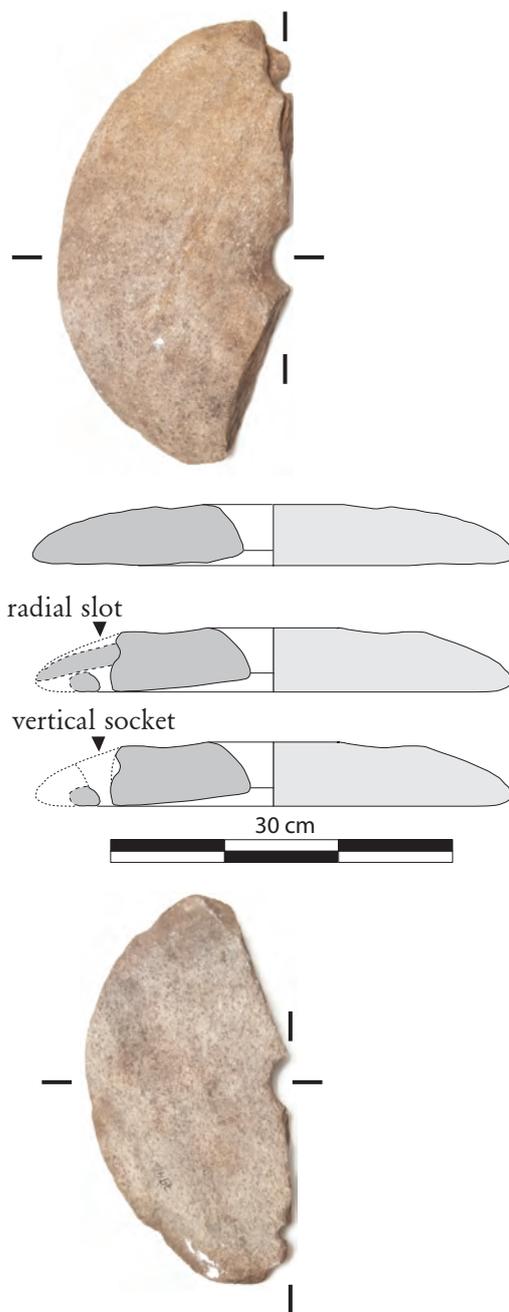
Context: Found outside the largest longhouse at Hanabergshagen.

Dating: Late Roman Iron Age/Migration Period, c. 300-550 AD.

Bibliography: Unpublished; report by J. Petersen in the topographical archive at the AM.

Cat. no. 56

Inv. number:	S7941 e
Provenance:	Auda-Motland, farm no. 18, Hå k.
Site name:	Hanabergshagen
% preserved:	60
No. of fragments:	1
Max diameter (cm):	44
Min diameter (cm):	43
Total height (cm):	5.7
Rim height (cm):	1.5
Thickness (cm):	5.5
Index t % of max. diam.:	12.5
Circumference:	Regular
Contour (edge):	Rounded
Grinding surface, shape:	Concave
Grinding surface:	Used
Category:	Upper stone
Upper surface:	Convex
Eye diameter, max (cm):	8
Eye diameter, min (cm):	6.2
Eye circumference:	Oval
Eye section:	Conical
Handle socket:	Vertical
Number of handle sockets:	1
Handle socket, diam. (cm):	1.5, 1.7
Radial slot	1
Rynd slots:	Not determinable
Rib:	Rib
Dressing:	Pecking
Grinding surf., height (cm):	Not determinable
Origin:	Not determinable
Rock type:	Garnet mica schist
Quern type:	RQ-U IIc1



Description: Approx. 60% of upper stone, grinding surface rough with random pecking, slightly worn along the perimeter. One vertical handle socket, and one is a horizontal slot which is curved and drops down towards the edge, l: 6.5 cm, diam: 1.7 cm. It is intersected by a vertical handle socket, totally perforated, diam. at the grinding surface 1.5 cm.

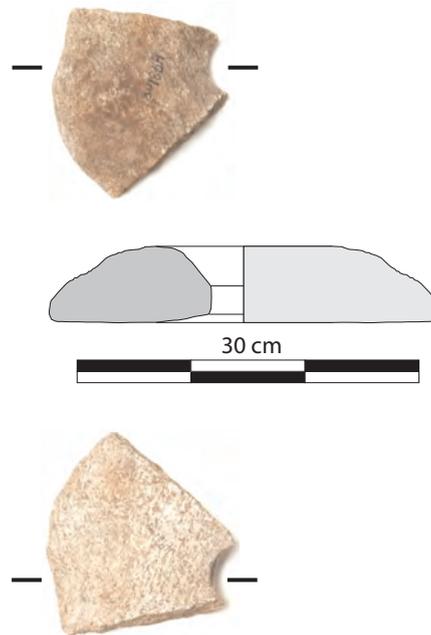
Context: Found in the smaller building at Hanabergshagen.

Dating: ¹⁴C-dating from the building yields 1430 +/- 30 BP, 580-660 CalAD (Beta 364742).

Bibliography: Unpublished; report by J. Petersen in the topographical archive at the AM.

Cat. no. 57

Inv. number:	S4931 n
Provenance:	Sæland, farm no. 43, Time k.
Site name:	Lyngaland, House 1
% preserved:	20
No. of fragments:	1
Max diameter (cm):	36
Total height (cm):	7.2
Thickness (cm):	6.8
Index t % of max. diam.:	18.8
Circumference:	Regular
Contour (edge):	Curved convergent
Grinding surface, shape:	Concave
Grinding surface:	Used
Category:	Upper stone
Upper surface:	Convex
Eye diameter, max (cm):	10
Eye diameter, min (cm):	6
Eye circumference:	Oval
Eye section:	Biconical
Handle socket:	Not determinable
Rynd slots:	Not determinable
Rib:	No rib
Dressing:	Pecking
Grinding surf., height (cm):	Not determinable
Origin:	Erratic block
Rock type:	Granite (MP)
Quern type:	RQ-U IIc



Description: Sector, irregular convex upper surface. Eye biconical with a 2 cm parallel section worn smooth. A 10 cm wide band around the eye with wear polish, skirt with random pecking.

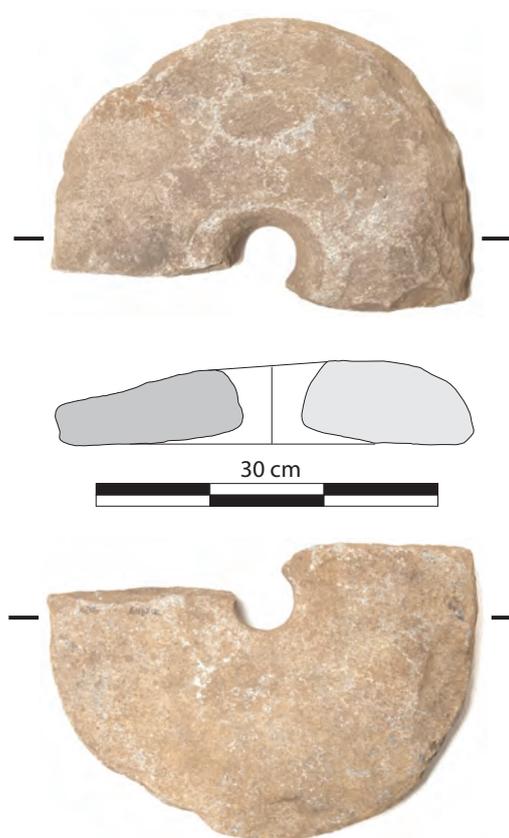
Context: Found in secondary position on top of a Medieval partition wall in House 1 at Lyngaland.

Dating: Possibly Early Iron Age.

Bibliography: Petersen 1936: 37-58, Pl. XLI- XLVII, LIX, LX.

Cat. no. 58

Inv. number:	S6030 w
Provenance:	Sæland, farm no. 43, Time k.
Site name:	Lyngaland, House 1
% preserved:	50
No. of fragments:	1
Max diameter (cm):	42
Min diameter (cm):	37.5
Total height (cm):	7.7
Thickness (cm):	7.2
Index t % of max. diam.:	17.1
Circumference:	Irregular
Contour (edge):	Rounded
Grinding surface, shape:	Concave
Grinding surface:	Used
Category:	Upper stone
Upper surface:	Flat
Eye diameter, max (cm):	9.4
Eye diameter, min (cm):	5.1
Eye circumference:	Circular
Eye section:	Biconical
Handle socket:	Not determinable
Rynd slots:	No rynd slots
Rib:	Rib
Dressing:	Pecking
Grinding surf., height (cm):	1.6
Origin:	Erratic block
Rock type:	Mica gneiss
Quern type:	RQ-U IIa/IIb



Description: Half of an upper stone, slightly oval in shape, with a flat upper face, thicker to one side. Grinding surface with random pecking marks, worn and damaged at one side.

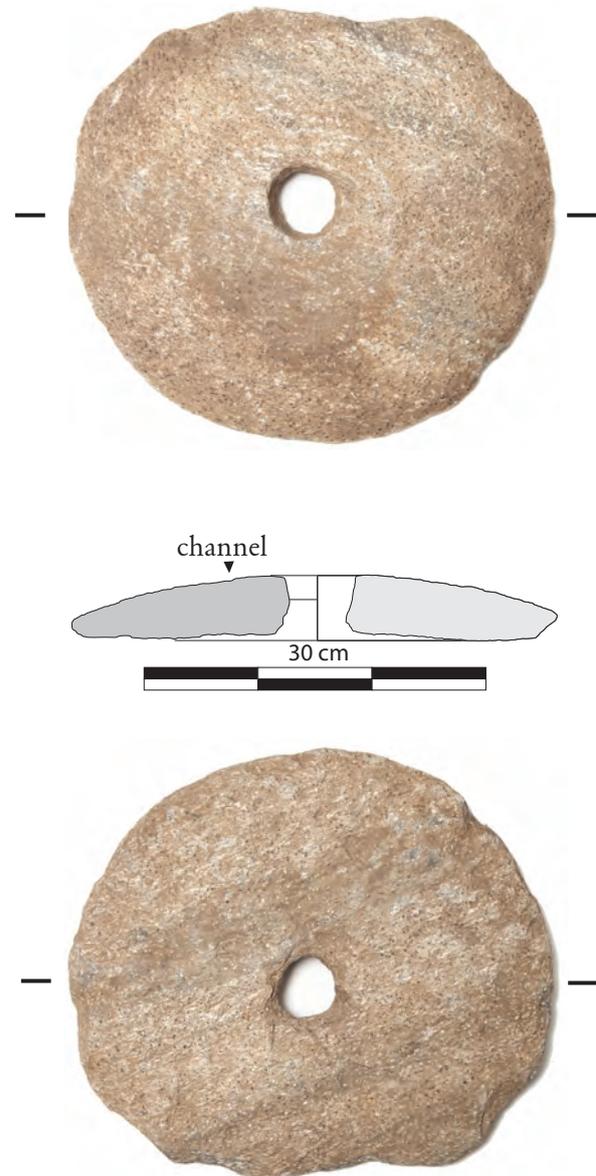
Context: Re-used as base for a post in the Medieval phase of House 1 at Lyngland.

Dating: Possibly Early Iron Age.

Bibliography: Petersen 1936: 37-58, Pl. XLI- XLVII, LIX, LX.

Cat. no. 59

Inv. number:	S6280 g
Provenance:	Re, farm no. 3, Time k.
Site name:	Hanaland House 2
% preserved:	98
No. of fragments:	1
Max diameter (cm):	43
Total height	5.6
Rim height (cm):	1.5
Circumference:	Irregular
Contour (edge):	Straight convergent
Grinding surface, shape:	Convex
Grinding surface	Used
Category:	Lower stone
Base:	Irregular
Eye (in lower stone):	Total perforation
Eye diameter, max (cm):	6.4
Eye diameter, min (cm):	4.9
Lip:	Lip
Dressing:	No dressing
Grinding surf., height (cm):	3.4
Origin:	Quarry
Rock type:	Garnet mica schist, Saltdal (MP)
Quern type:	RQ-L 3



Description: Almost complete lower stone, with damage to the edge forming a straight line, grinding surface is also damaged along this line. Eye wall shows slanting grooves. On the upper surface, surrounding the eye, is a shallow concentric channel measuring 14 cm in diameter, the lip is flat. The edge is thin, 1.5 cm. Eye oval diam: 6-6.4 cm, min: 4.9-5.5 cm. Base flat and irregular.

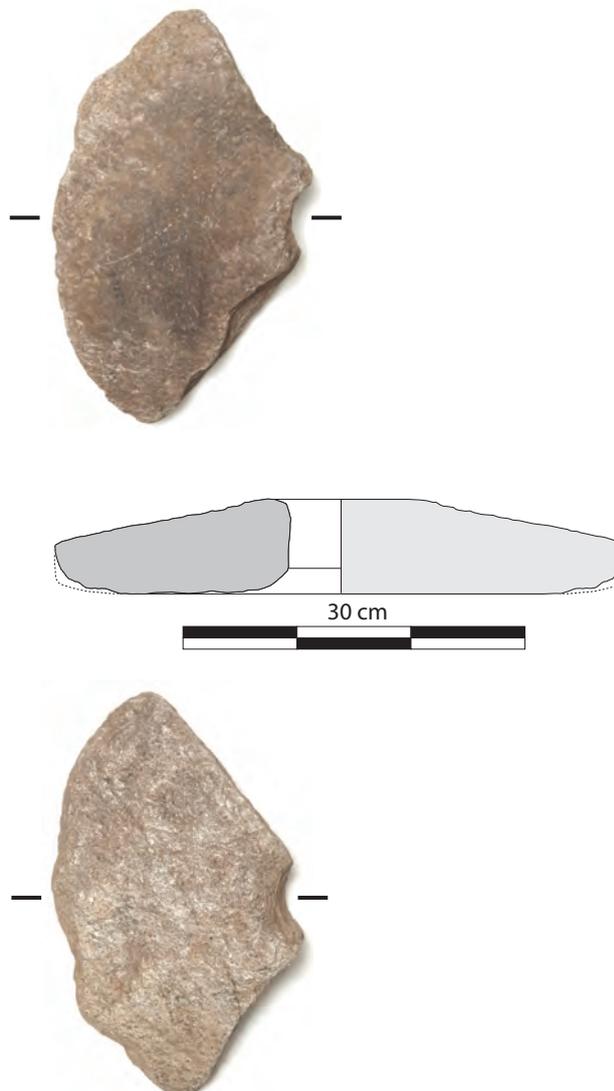
Context: Found as a part of stone paving inside the entrance in House 2, i.e. in secondary position (cf. Petersen 1936: Pl. XXX).

Dating: Medieval Period.

Bibliography: Petersen 1936: 81-86, Pl. XXX, Pl. L fig. 9-11, Pl. LI, Pl. LXV.

Cat. no. 60

Inv. number:	6280 h
Provenance:	Re, farm no. 3, Time k.
Site name:	Hanaland, House 1
% preserved:	25
No. of fragments:	1
Max diameter (cm):	52
Total height (cm):	8.3
Circumference:	Irregular
Contour (edge):	Curved convergent
Grinding surface, shape:	Convex
Grinding surface:	Used
Category:	Lower stone
Base:	Irregular
Eye:	Total perforation
Eye diameter, max (cm):	8
Eye diameter, min (cm):	6
Lip:	Lip
Dressing:	No dressing
Grinding surf., height (cm):	3.8
Origin:	Quarry
Rock type:	Garnet mica schist, Saltdal (MP)
Quern type:	RQ-L 3



Description: Sector of a lower stone, c. 25%, heavily worn with 2 cm wide lip around the eye. Parts of the edge are damaged. Deep, concentric wear marks in a 10 cm band around the eye, perimeter skirt is worn smooth.

Context: Found in secondary position in House 1 at the deserted farmstead of Hanaland.

Dating: Early - High Medieval Period. c. 1100-1350 AD.

Bibliography: Petersen 1936: 81-86, Pl. XXX, Pl. L fig. 9-11, Pl. LI, Pl. LXV

Cat. no. 61

Inv. number:	S6698 g
Provenance:	Fosse, farm no. 59, Time k.
% preserved:	100
No. of fragments:	1
Max diameter (cm):	44.5
Min diameter (cm):	42
Total height (cm):	5
Thickness (cm):	4.4
Index t % of max. diam.:	9.88
Circumference:	Irregular
Contour (edge):	Rounded
Grinding surface, shape:	Concave
Grinding surface:	Used
Category:	Upper stone
Upper surface:	Convex
Eye diameter, max (cm):	11
Eye diameter, min (cm):	5.7
Eye circumference:	Oval
Eye section:	Parallel
Handle socket:	Vertical
Number of handle sockets:	1
Handle socket, diam. (cm):	1
Handle socket, depth (cm):	0.3
Rynd slots:	No rynd slots
Rib:	No rib
Dressing:	Pecking
Grinding surf., height (cm):	1.5
Origin:	Not determinable
Rock type:	Mica gneiss (AKM)
Quern type:	RQ-U IIc



Description: Low, convex upper stone, evenly rounded transition to rounded edge. Large hopper, eye worn smooth in along its inner walls. Parts of the upper surface missing; a shallow hollow toward the edge could possibly be an unfinished handle socket. Grinding surface covered with random pecking.

Context: Found in the remains of an abandoned house, approx. 2 m from, and in line with, the central hearth.

Dating: Merovingian Period. ¹⁴C-dating from the central hearth yields 1500 +/- 30 BP, 540-620 Cal-AD (Beta 364741).

Bibliography: Lund 1940: 35-40.

Cat. no. 62

Inv. number:	6698 h
Provenance:	Fosse, farm no. 59, Time k.
% preserved:	55
No. of fragments:	1
Max diameter (cm):	46
Min diameter (cm):	42
Total height (cm):	5
Circumference:	Irregular
Contour (edge):	Curved convergent
Grinding surface, shape:	Planar
Grinding surface:	Used
Category:	Lower stone
Base:	Irregular
Eye:	Perforation not de- terminable
Eye depth (cm):	Not determinable
Eye diameter, max (cm):	4.7
Lip:	Lip
Dressing:	Pecking
Grinding surf., height (cm):	0.3
Origin:	Erratic block
Rock type:	Mica schist (AKM)
Quern type:	RQ-L 1



Description: Half of a lower stone with an irregular, circular circumference. Horizontal grinding surface stretches almost from edge to edge; heavily worn and rough; with random pecking. Lower surface cross-section strongly concave. Base damaged at eye, not possible to determine if totally or partially perforated. Eye circumference worn to an oval shape.

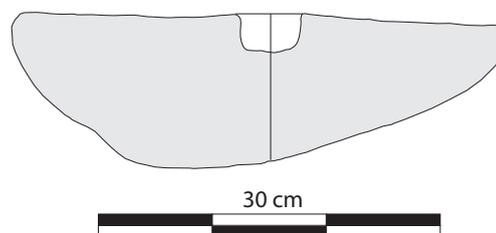
Context: Found in the remains of an abandoned house, lying to the east of the central hearth.

Dating: Merovingian Period. ¹⁴C-dating from the central hearth yields 1500 +/- 30 BP, 540-620 Cal-AD (Beta 364741).

Bibliography: Lund 1940: 35-40.

Cat. no. 63

Inv. number:	S5779 o
Provenance:	Tjetland, farm no. 24, Gjesdal k.
% preserved:	100
No. of fragments:	1
Max diameter (cm):	44
Total height (cm):	13.5
Circumference:	Irregular
Contour (edge):	Curved convergent
Grinding surface, shape:	Convex
Grinding surface:	Used
Category:	Lower stone
Base:	Irregular
Eye:	Partial perforation
Eye depth (cm):	3.4
Eye diameter, max (cm):	5.6
Lip:	No lip
Dressing:	Pecking
Grinding surf., height (cm):	0.6
Origin:	Erratic block
Rock type:	Granite (AKM)
Quern type:	RQ-L 1



Description: Lower stone, originally circular in circumference, now most of the edge is missing. Grinding surface with random pecking, worn, with a barely perceptible lip. Slight, concentric wear marks. Eye partially perforated, oval in circumference, diameter: 5.1-5.6 cm. Base irregular, little worked.

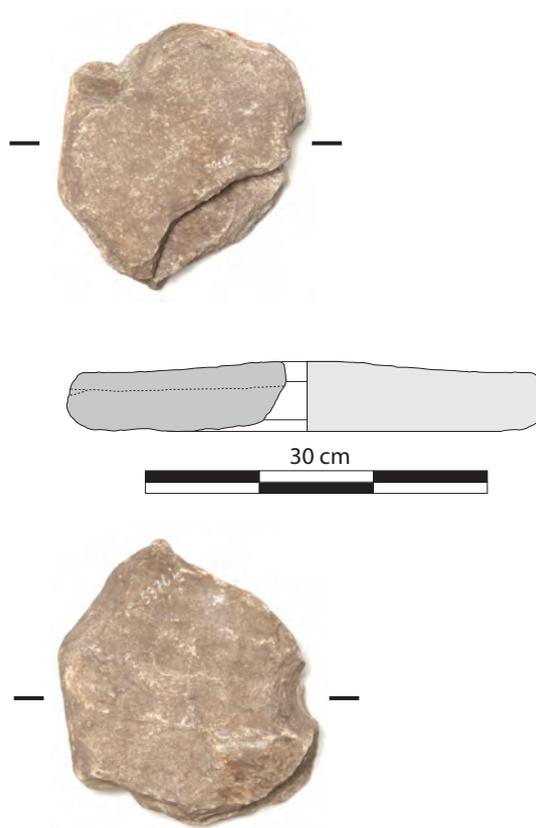
Context: Found immediately under the grass turf in an abandoned longhouse, probably used as building material that fell into the building when the stone walls collapsed.

Dating: Antedating the Migration Period (400-550 AD).

Bibliography: Petersen 1933: 68-70, Pl. XVIII, fig. 2-7, Pl. LIII.

Cat. no. 64

Inv. number:	S5876 i
Provenance:	Ravndal, farm no. 16, Gjesdal k.
Site name:	Skeie, House 2
% preserved:	20
No. of fragments:	2
Max diameter (cm):	42
Total height (cm):	6
Circumference:	Not determinable
Contour (edge):	Rounded
Grinding surface, shape:	Convex
Grinding surface:	Used
Category:	Lower stone
Eye:	Total perforation
Eye diameter, max (cm):	10
Eye diameter, min (cm):	4
Lip:	No lip
Dressing:	Pecking
Grinding surf., height (cm):	Not determinable
Origin:	Not determinable
Rock type:	Mica gneiss
Quern type:	RQ-L 2a



Description: Approx. 20% of a badly damaged lower stone, split in two slices. Conical eye, largest diam. at the base. Base flat, little worked. Only 11 cm of the original edge preserved, this is straight which points to a rectangular form, c. 40 cm long (or wide). Grinding surface with random pecking worn smooth. Grinding surface section: th: 2.8 cm, longest break: 16 cm. Base section: th: 3.5 cm, l. from break at eye to original edge: 18.5 cm.

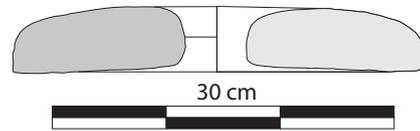
Context: Found in Longhouse 2 at the deserted farmstead of Skeie.

Dating: Late Roman Iron Age, *t.a.q.* 400 AD.

Bibliography: Petersen 1933: 70-76, Pl. XXXVI, LIV, LV.

Cat. no. 65

Inv. number:	S9277 00
Provenance:	Espeland, farm no. 26, Sandnes k.
% preserved:	100
No. of fragments:	1
Max diameter (cm):	36
Total height (cm):	6
Rim height (cm):	3.5
Thickness (cm):	5.5
Index t % of max. diam.:	15.2
Circumference:	Irregular
Contour (edge):	Curved convergent
Grinding surface, shape:	Concave
Grinding surface:	Used
Category:	Upper stone
Upper surface:	Convex
Eye diameter, max (cm):	9.6
Eye diameter, min (cm):	5.4
Eye circumference:	Oval
Eye section:	Biconical
Handle socket:	No socket
Rynd slots:	No rynd slots
Rib:	No rib
Dressing:	Pecking
Grinding surf., height (cm):	0.6
Origin:	Erratic block
Rock type:	Mica gneiss (JMD)
Quern type:	RQ-U IIa



Description: Upper stone, regular and well executed, but with slightly undulating circumference. Parts of the grinding surface are missing. Grinding surface has random pecking and is unevenly worn.

Context: Found in secondary position outside House 25 at Espeland.

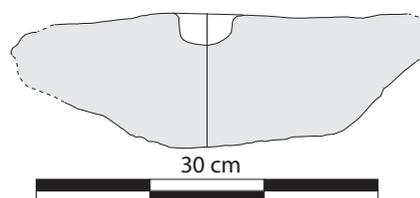
Dating: *T.a.q.* 450 AD.

Bibliography: Espedal 1966, 1967.

The Norwegian Millstone Landscape

Cat. no. 66

Inv. number:	S9277 mmm
Provenance:	Espeland, farm no. 26, Sandnes k.
% preserved:	90
No. of fragments:	1
Max diameter (cm):	37.5
Total height (cm):	11.5
Circumference:	Irregular
Contour (edge):	Curved convergent
Grinding surface, shape:	Convex
Grinding surface:	Used
Category:	Lower stone
Base:	Irregular
Eye:	Partial perforation
Eye depth (cm):	2.7
Eye diameter, max (cm):	4.6
Lip:	Lip
Dressing:	No dressing
Grinding surf., height (cm):	0.7
Origin:	Erratic block
Rock type:	Mica schist (JMD)
Quern type:	RQ-L 1



Description: Lower stone with partially perforated eye. Base very irregular. A large part of the edge is missing of one half of the grinding surface.

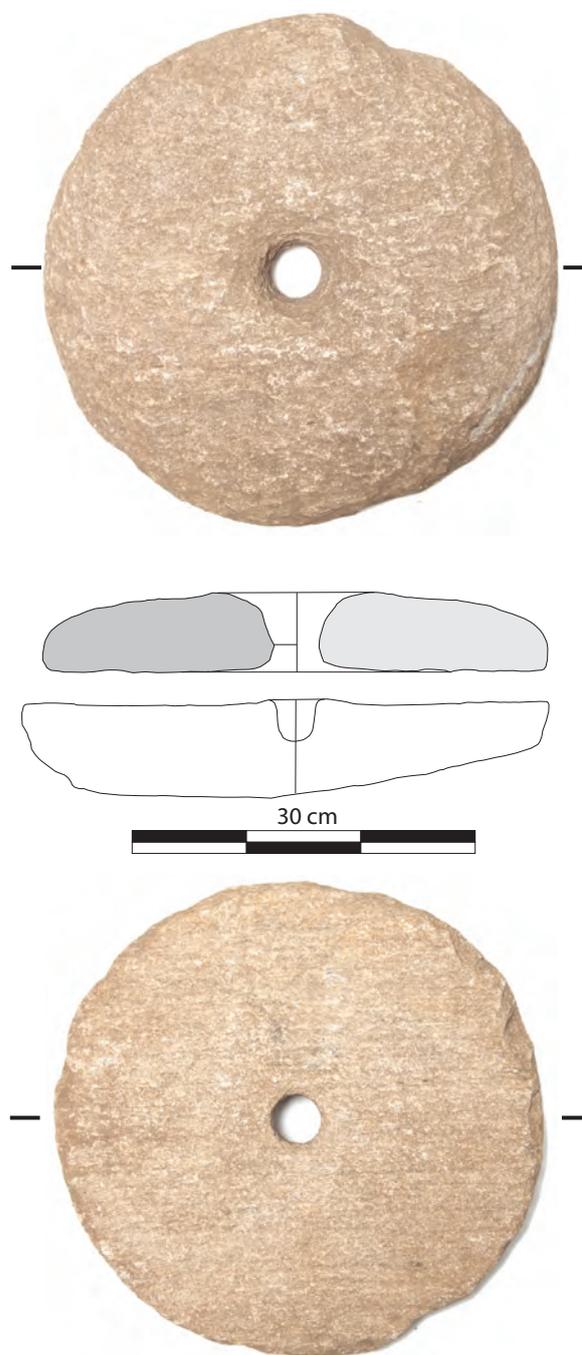
Context: Used as building material for the outer stone wall of House 25 at Espeland, i.e. in secondary position.

Dating: *T.a.q.* 450 AD

Bibliography: Espedal 1966, 1967.

Cat. no. 67

Inv. number:	S12530.25 (1)
Provenance:	Sørbø, farm no. 45, Sandnes k.
% preserved:	100
No. of fragments:	1
Max diameter (cm):	46
Min diameter (cm):	42
Total height (cm):	7.2
Thickness (cm):	6.9
Index t % of max. diam.:	15
Circumference:	Regular
Contour (edge):	Curved convergent
Grinding surface, shape:	Concave
Grinding surface:	Used
Category:	Upper stone
Upper surface:	Convex
Eye diameter, max (cm):	10.5
Eye diameter, min (cm):	4.5
Eye circumference:	Circular
Eye section:	Biconical
Handle socket:	No socket
Rynd slots:	No rynd slots
Rib:	No rib
Dressing:	No dressing
Grinding surf., height (cm):	0.4
Origin:	Erratic block
Rock type:	Mica-rich gneiss (MP)
Quern type:	RQ-U IIb



Description: Regular upper stone with slight damage at the edge. The rock has distinct ridges, making the grinding surface rough, small areas near the edge are highly polished by wear. The stone pairs with cat. 68.

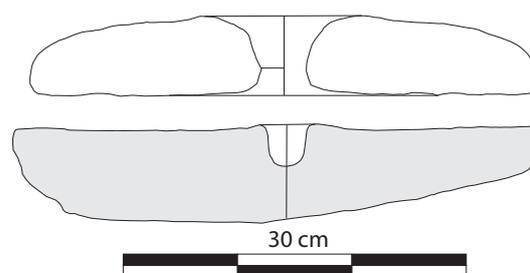
Context: Found *in situ* in abandoned longhouse.

Dating: Late Migration Period, c. 550 AD.

Bibliography: Dugstad 2011: 74, fig. p. 75.

Cat. no. 68

Inv. number:	S12530.25 (2)
Provenance:	Sørbø, farm no. 45, Sandnes k.
% preserved:	100
No. of fragments:	1
Max diameter (cm):	47
Total height (cm):	9.5
Circumference:	Irregular
Contour (edge):	Curved convergent
Grinding surface, shape:	Convex
Grinding surface:	Used
Category:	Lower stone
Base:	Irregular
Eye:	Partial perforation
Eye depth (cm):	3.8
Eye diameter, max (cm):	3.8
Eye diameter, min (cm):	3.6
Lip:	Lip
Dressing:	No dressing
Grinding surf., height (cm):	0.6
Origin:	Erratic block
Rock type:	Mica-rich gneiss (MP)
Quern type:	RQ-L 1



Description: Lower stone with partially perforated eye, regular circular circumference, slight damage at the edge. Base thicker to one side, otherwise regular. The rock has distinct ridges, making the grinding surface rough, small areas near the edge are highly polished by wear. The stone pairs with cat. 67.

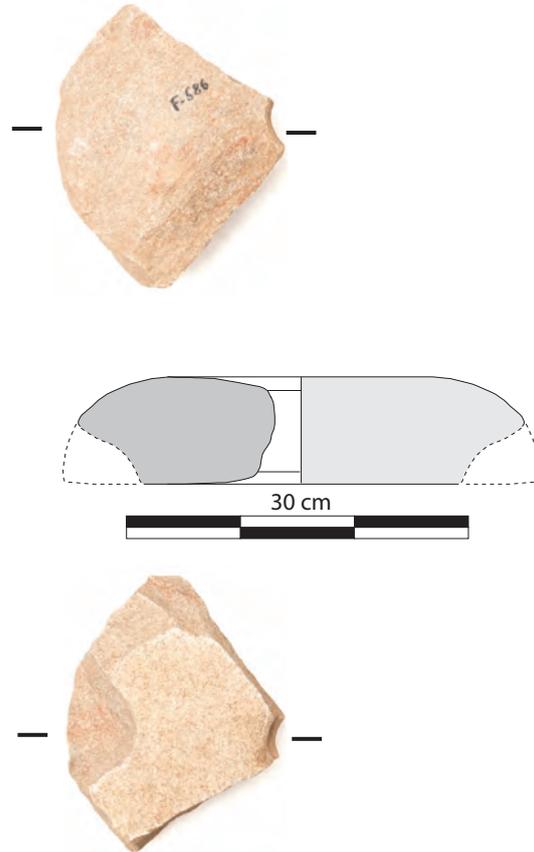
Context: Found *in situ* in abandoned longhouse.

Dating: Late Migration Period, c. 550 AD.

Bibliography: Dugstad 2011: 74, fig. p. 75.

Cat. no. 69

Inv. number:	S13006.1
Provenance:	Forsand, farm no. 41, Forsand k.
Site name:	Forsandmoen, Building X
% preserved:	20
No. of fragments:	1
Max diameter (cm):	40
Total height (cm):	10
Thickness (cm):	9.6
Index t % of max. diam.:	24
Circumference:	Not determinable
Contour (edge):	Not determinable
Grinding surface, shape:	Concave
Grinding surface:	Used
Category:	Upper stone
Upper surface:	Hemispherical
Eye diameter, max (cm):	6
Eye diameter, min (cm):	5
Eye circumference:	Oval
Eye section:	Biconical
Handle socket:	Not determinable
Rynd slots:	Not determinable
Rib:	No rib
Dressing:	Pecking
Grinding surf., height (cm):	Not determinable
Origin:	Erratic block
Rock type:	Fine-grained gneiss (MP)
Quern type:	RQ-U I



Description: Sector fragment, approx. 20% of upper stone, no original edges preserved apart from c. 1/4 of the eye. The eye has a marked step 2 cm from the grinding surface. Eye max. diameter towards the grinding surface. The preserved grinding surface shows random pecking.

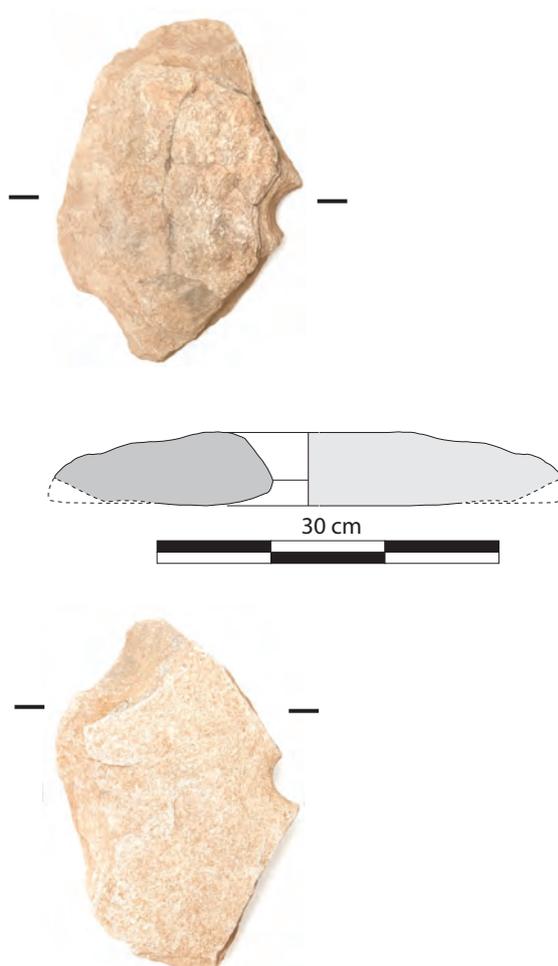
Context: Used as base in post-hole in the first phase of House X.

Dating: A ¹⁴C-dating (T-5903) from the house yields 1760±70 BP, 130-390 cal AD. The quern antedates the building and can be dated to the 2nd century.

Bibliography: Unpublished.

Cat. no. 70

Inv. number:	S13012.5
Provenance:	Forsand, farm no. 41, Forsand k.
Site name:	Forsandmoen Building XVI
% preserved:	30
No. of fragments:	1
Conservation treatment:	Glued
Max diameter (cm):	45
Min diameter (cm):	40
Total height (cm):	6.5
Thickness (cm):	6.1
Index t % of max. diam.:	13.5
Circumference:	Not determinable
Contour (edge):	Not determinable
Grinding surface, shape:	Concave
Grinding surface:	Used
Category:	Upper stone
Upper surface:	Convex
Eye diameter, max (cm):	Not determinable
Eye diameter, min (cm):	4.5
Eye circumference:	Not determinable
Eye section:	Biconical
Handle socket:	Not determinable
Rynd slots:	Not determinable
Rib:	No rib
Dressing:	No dressing
Grinding surf., height (cm):	Not determinable
Origin:	Erratic block
Rock type:	Biotite-rich schistic gneiss with small, pink garnets (MP)
Quern type:	RQ-U IIB



Description: Damaged fragment, approx. 30% of upper stone. The outer edge is missing, parts of grinding surface are also broken off, while other parts have flaked off. Upper surface with two fragments glued together. The grinding surface is worn down around the eye.

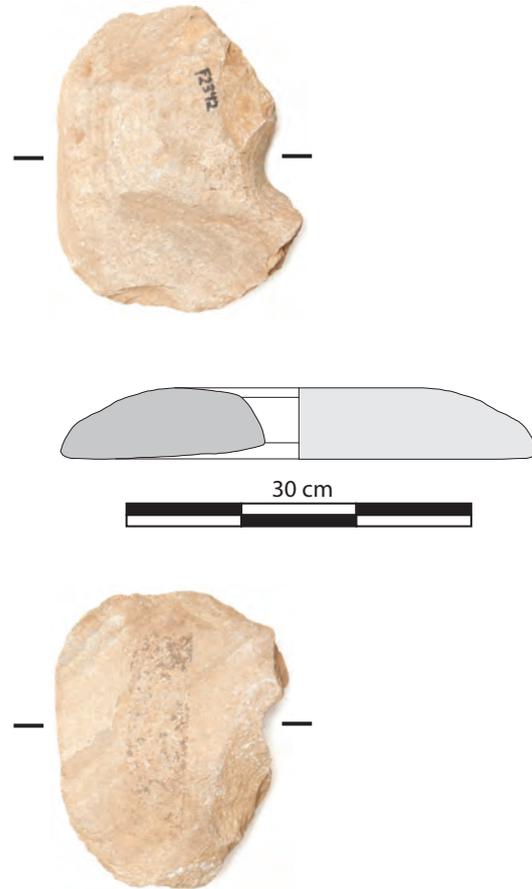
Context: Found in posthole in Building XVIb, i.e. in secondary position

Dating: Building XVIa is ¹⁴C-dated to 1710+/-70 BP, 240-420 cal AD (T-5905).

Bibliography: Unpublished.

Cat. no. 71

Inv. number:	S13134.1
Provenance:	Forsand, farm no. 41, Forsand k.
Site name:	Forsandmoen Building CLXI
% preserved:	20
No. of fragments:	1
Max diameter (cm):	43
Total height (cm):	6.5
Thickness (cm):	6.1
Index t % of max. diam.:	14.1
Circumference:	Not determinable
Contour (edge):	Not determinable
Grinding surface, shape:	Concave
Grinding surface:	Used
Category:	Upper stone
Upper surface:	Irregular
Eye diameter, max (cm):	Not determinable
Eye diameter, min (cm):	6
Eye circumference:	Oval
Eye section:	Conical
Handle socket:	Not determinable
Rynd slots:	Not determinable
Rib:	No rib
Dressing:	No dressing
Grinding surf., height (cm):	Not determinable
Origin:	Erratic block
Rock type:	Gneiss (MP)
Quern type:	RQ-U IIb



Description: Sector fragment, approx. 20% of upper stone, possibly with one straight original edge. Two large areas on the upper surface are missing, one smaller area is missing on the grinding surface, damaging the eye. The grinding surface is worn smooth. The eye is conical, oval towards the upper surface.

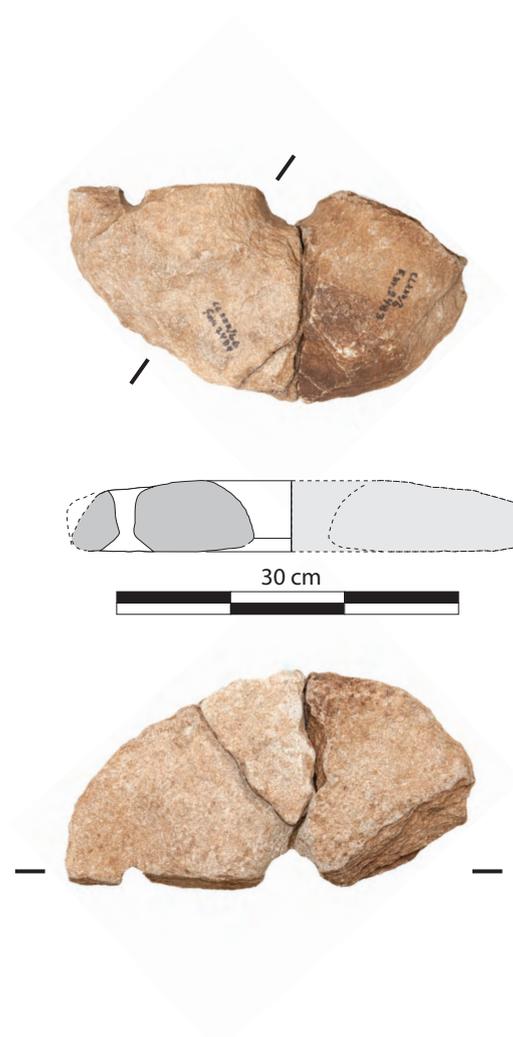
Context: Found in a posthole in Building CLXI (161), a poorly preserved workshop, belonging to the building sequence 156-158.

Dating: 3rd-5th century AD.

Bibliography: Unpublished.

Cat. no. 72

Inv. number:	S13149.6
Provenance:	Forsand, farm no. 41, Forsand k.
Site name:	Forsandmoen Building CLXXX
% preserved:	45
No. of fragments:	4
Max diameter (cm):	39
Total height (cm):	6.5
Thickness (cm):	6.4
Index t % of max. diam.:	16.4
Circumference:	Irregular
Contour (edge):	Curved convergent
Grinding surface, shape:	Concave
Grinding surface:	Used
Category:	Upper stone
Upper surface:	Convex
Eye diameter, max (cm):	11
Eye diameter, min (cm):	4.6
Eye circumference:	Oval
Eye section:	Conical
Handle socket:	Vertical
Number of handle sockets:	1
Handle socket, diam. (cm):	1.8 - 2.6
Handle socket, depth (cm):	Totally perforated
Rynd slots:	No rynd slots
Rib:	No rib
Dressing:	Pecking
Grinding surf., height (cm):	Not determinable
Origin:	Erratic block
Rock type:	Fine-grained gneiss (MP)
Quern type:	RQ-U IIa1



Description: Four fragments of upper stone that fit together corresponding to approx. 45% of the stone (besides two smaller fragments). The stone is scorched. The upper surface is partly missing. The grinding surface is deteriorated (flaking) with slight traces of random pecking.

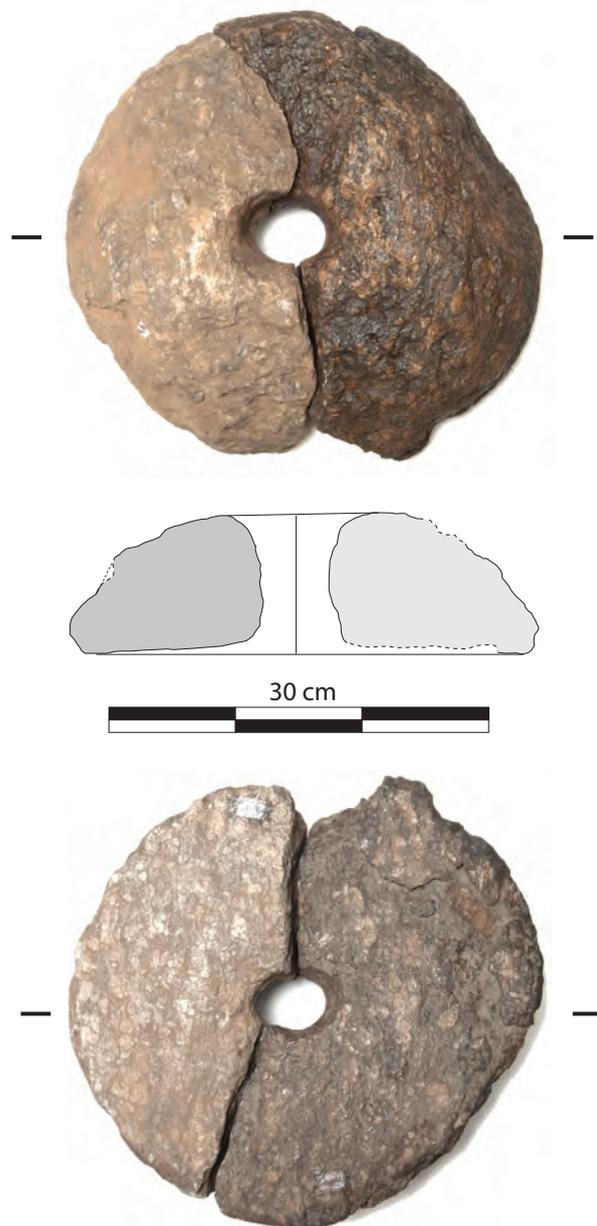
Context: Found in secondary positions in Building CLXXX (180), one fragment in a posthole.

Dating: 3rd century AD.

Bibliography: Unpublished.

Cat. no. 73

Inv. number:	S13130.1 and S13131.1
Provenance:	Forsand, farm no. 41, Forsand k.
Site name:	Forsandmoen Building CLVII-CLVIII
% preserved:	100
No. of fragments:	2
Conservation treatment:	Consolidated
Max diameter (cm):	42
Min diameter (cm):	39.5
Total height (cm):	13
Thickness (cm):	11.5
Index t % of max. diam.:	27.38
Circumference:	Irregular
Contour (edge):	Curved convergent
Grinding surface, shape:	Concave
Grinding surface:	Used
Category:	Upper stone
Upper surface:	Hemispherical
Eye diameter, max (cm):	7.6
Eye diameter, min (cm):	6.5
Eye circumference:	Oval
Eye section:	Biconical
Handle socket:	No socket
Rynd slots:	No rynd slots
Rib:	No rib
Dressing:	No dressing
Grinding surf., height (cm):	1.1
Origin:	Erratic block
Rock type:	Coarse-grained foliated gneiss (MP)
Quern type:	RQ-U I



Description: Upper stone with hemispherical, uneven upper surface. The stone is in two halves. One is heavily scorched (S13130.1) with original grinding surface largely missing. The other is not scorched. It has a grinding surface that is rough with hard inclusions unevenly distributed over the surface that are worn to a sheen. Biconical, large eye.

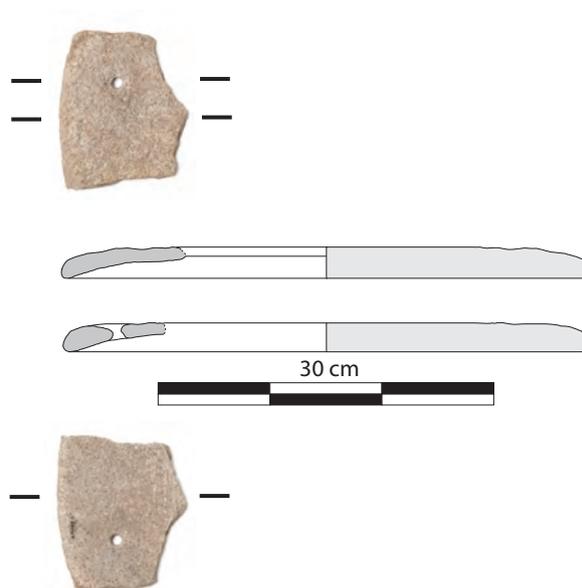
Context: S13130.1 found in posthole belonging to Building 157, 2988 found in relation to posthole in Building 158.

Dating: Early 3rd century AD.

Bibliography: Unpublished.

Cat. no. 74

Inv. number:	S10088 x
Provenance:	Vetthus, farm no. 57, Suldal k.
Site name:	Håvestøl
% preserved:	<10
No. of fragments:	1
Max diameter (cm):	48
Rim height (cm):	1.9
Thickness (cm):	1.9
Index t % of max. diam.:	3.9
Circumference:	Regular
Contour (edge):	Curved convergent
Grinding surface, shape:	Concave
Grinding surface:	Used
Category:	Upper stone
Upper surface:	Flat
Eye:	Not preserved
Number of handle sockets	1
Handle socket:	Vertical
Handle socket, diam. (cm):	Min. 1
Handle socket, depth (cm):	Totally perforated
Rynd slots:	Not determinable
Rib:	Not determinable
Dressing:	No dressing
Grinding surf., height (cm):	Not determinable
Origin:	Quarry
Rock type:	Garnet mica schist Saltdal (MP).
Quern type:	RQ-U III



Description: Edge fragment of upper stone, max. length of edge 14.2 cm. Small, biconical handle socket, min. diam: 1 cm, max. diam: c. 2 cm. Heavily worn, deep concentric grooves on the grinding surface, except for the outer perimeter (3.5 cm) that is worn completely smooth.

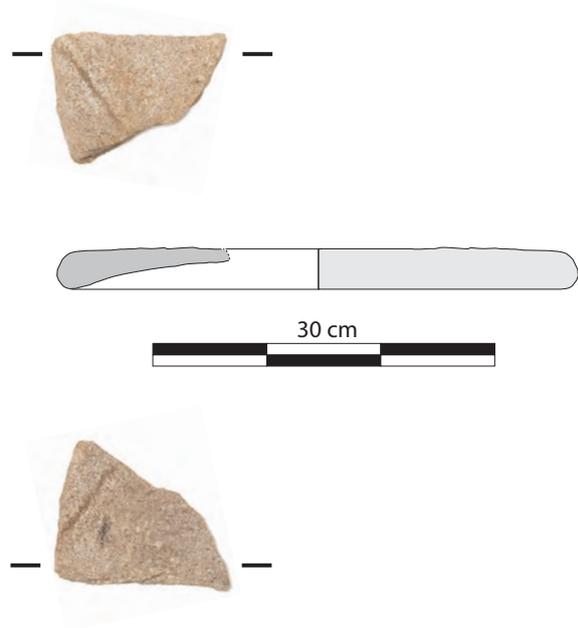
Context: Found in the remains of the western building at Håvestøl, a deserted farmstead.

Dating: Late Medieval Period, ¹⁴C-dating 540+/- 80 BP, cal AD 1300-1440 (T-2410), (Næss & Juhl 1992: 34)

Bibliography: Lillehammer 1971; Stenvik 1978.

Cat. no. 75

Inv. number:	S10088 y
Provenance:	Vetarhus, farm no. 57, Suldal k.
Site name:	Håvestøl
% preserved:	<10
No. of fragments:	1
Max diameter (cm):	46
Rim height (cm):	3.2
Thickness (cm):	3.2
Index t % of max. diam.:	6.9
Circumference:	Regular
Contour (edge):	Curved convergent
Grinding surface, shape:	Concave
Grinding surface:	Used
Category:	Upper stone
Upper surface:	Flat
Eye:	Not preserved
Handle socket:	Not determinable
Rynd slots:	Not determinable
Rib:	Not determinable
Dressing:	No dressing
Grinding surf., height (cm):	Not determinable
Origin:	Quarry
Rock type:	Garnet mica schist, (MP)
Quern type:	RQ-U III



Description: Edge fragment of upper stone, max. length of edge 13 cm, only 1.4 cm thick at the break towards the centre. Heavily worn, concentric grooves on the grinding surface, except for along the outer perimeter (last 5.5 cm) which is worn completely smooth.

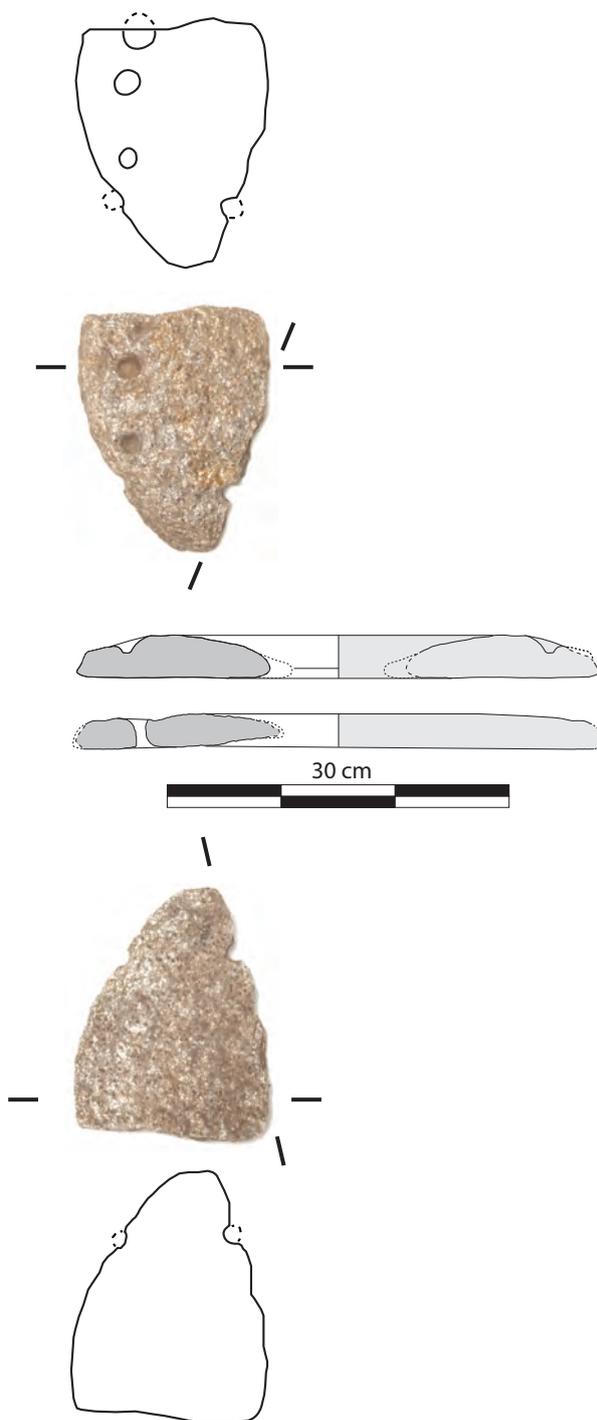
Context: Found in the remains of the western building at Håvestøl, a deserted farmstead.

Dating: Late Medieval Period, ¹⁴C-dating 540+/- 80 BP, cal AD 1300-1440, (Næss & Juhl 1992: 34).

Bibliography: Lillehammer 1971, Stenvik 1978.

Cat. no. 76

Inv. number:	S3902 h
Provenance:	Nordre Hidle, farm no. 55, Finnøy k.
% preserved:	20
No. of fragments:	1
Max diameter (cm):	46
Thickness (cm):	3.6
Index t % of max. diam.:	7.8
Circumference:	Regular
Contour (edge):	Straight convergent
Grinding surface, shape:	Concave
Grinding surface:	Used
Category:	Upper stone
Upper surface:	Flat
Eye upper stone:	Not preserved
Handle socket:	Vertical
Number of handle sockets:	5
Handle socket, diam. (cm):	1.5
Handle socket, depth (cm):	1.6
Rynd slots:	Not determinable
Rib:	Not determinable
Dressing:	No dressing
Grinding surf., height (cm):	Not determinable
Origin:	Quarry
Rock type:	Garnet mica schist, possibly Hyllestad (MP)
Quern type:	RQ-U III



Description: Extremely worn upper stone fragment with a secondary cut at the edge. Grinding surface strongly concave with deep concentric wear marks (grooves). A total of 5 handle sockets (or other type of perforation). One totally perforated socket is visible along a first break. Three unfinished sockets: one at a other break and two located 2.3 and 4 cm from the edge. Partially preserved socket at the edge, damaged by secondary cutting.

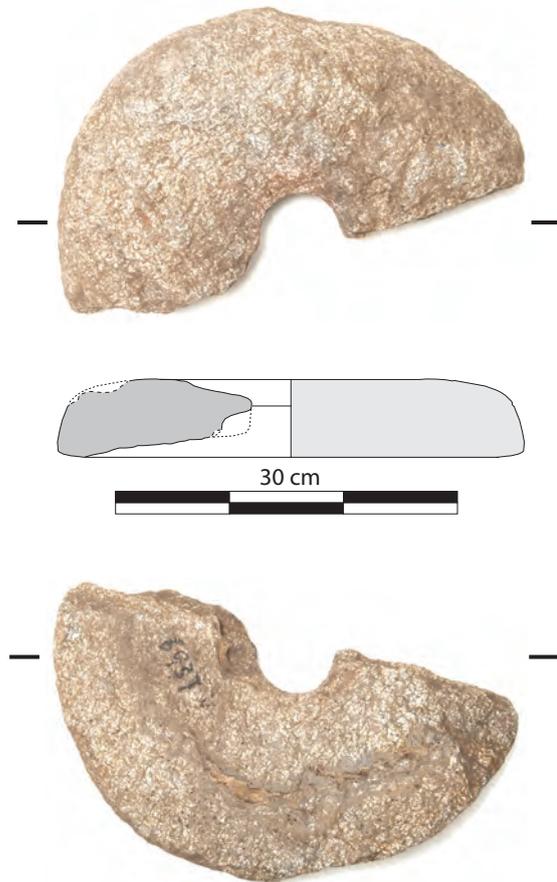
Context: Stray find, probably from a deserted farmstead.

Dating: Finds from the same spot comprise line sinkers, handled soapstone vessel, whetstone and loom weight, all indicating Late Viking Period or Early Medieval Period, c. 1000-1100.

Bibliography: Unpublished.

Cat. no. 77

Inv. number:	S6937 i
Provenance:	Utstein kloster, farm no. 54, Rennesøy k.
Site name:	Øygarden
% preserved:	50
No. of fragments:	1
Max diameter (cm):	41
Total height (cm):	8.7
Thickness (cm):	5.9
Index t % of max. diam.:	14.39
Circumference:	Irregular
Contour (edge):	Curved convergent
Grinding surface, shape:	Concave
Grinding surface:	Used
Category:	Upper stone
Upper surface:	Irregular
Eye diameter, max (cm):	Not determinable
Eye diameter, min (cm):	6.5
Eye circumference:	Oval
Eye section:	Biconical
Handle socket:	Not determinable
Rynd slots:	Rynd slots
Rib:	Not determinable
Dressing:	No dressing
Grinding surf., height (cm):	Not determinable
Origin:	Quarry
Rock type:	Garnet mica schist, Saltdal (MP)
Quern type:	RQ-U III



Description: C. 50% of upper stone with very worn and flaked grinding surface. On the edge there are numerous straight lines that are traces of the loosening of the stone. Rynd slots preserved, one complete to one side of the eye, only a fraction on the other side preserved.

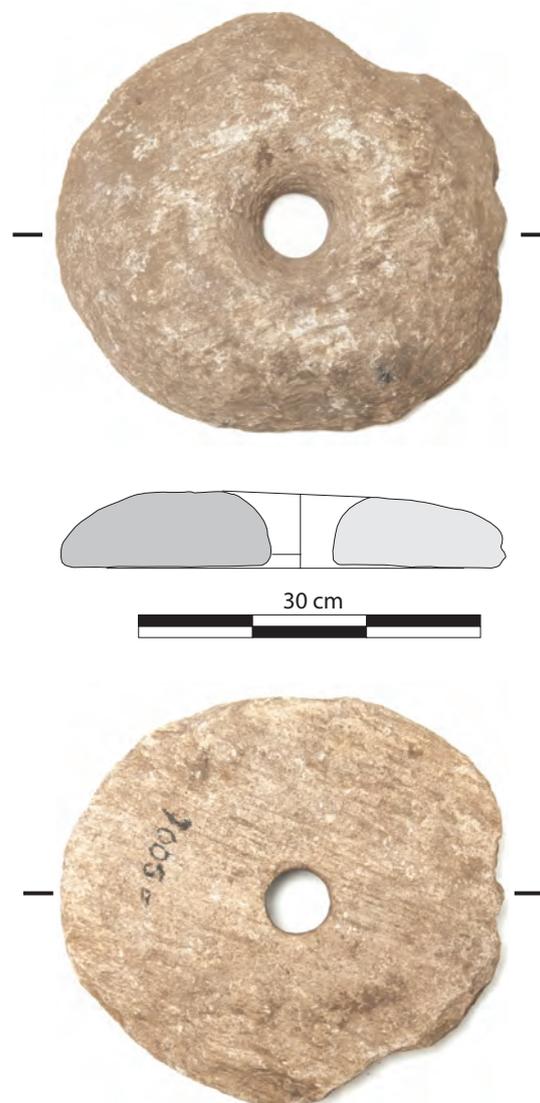
Context: Found in the entrance to the house.

Dating: 16th century AD.

Bibliography: Petersen 1944.

Cat. no. 78

Inv. number:	S7005 o
Provenance:	Hodnafjell, farm no. 50, Rennesøy k.
% preserved:	100
No. of fragments:	1
Max diameter (cm):	42
Min diameter (cm):	38.5
Total height (cm):	7.5
Thickness (cm):	6.5
Index t % of max. diam.:	15.47
Circumference:	Irregular
Contour (edge):	Curved convergent
Grinding surface, shape:	Concave
Grinding surface:	Used
Category:	Upper stone
Upper surface:	Convex
Eye diameter, max (cm):	11.7
Eye diameter, min (cm):	5.8
Eye circumference:	Oval
Eye section:	Conical
Handle socket:	No socket
Rynd slots:	No rynd slots
Rib:	No rib
Dressing:	No dressing
Grinding surf., height (cm):	0.4
Origin:	Erratic block
Rock type:	Mica-rich gneiss (AKM)
Quern type:	RQ-U IIb



Description: Upper stone with slight damage along the edge producing an irregular circumference. Very large hopper. Slightly irregular upper surface. Grinding surface partially missing toward the edge, some areas worn smooth resulting in a skirt 6 cm wide.

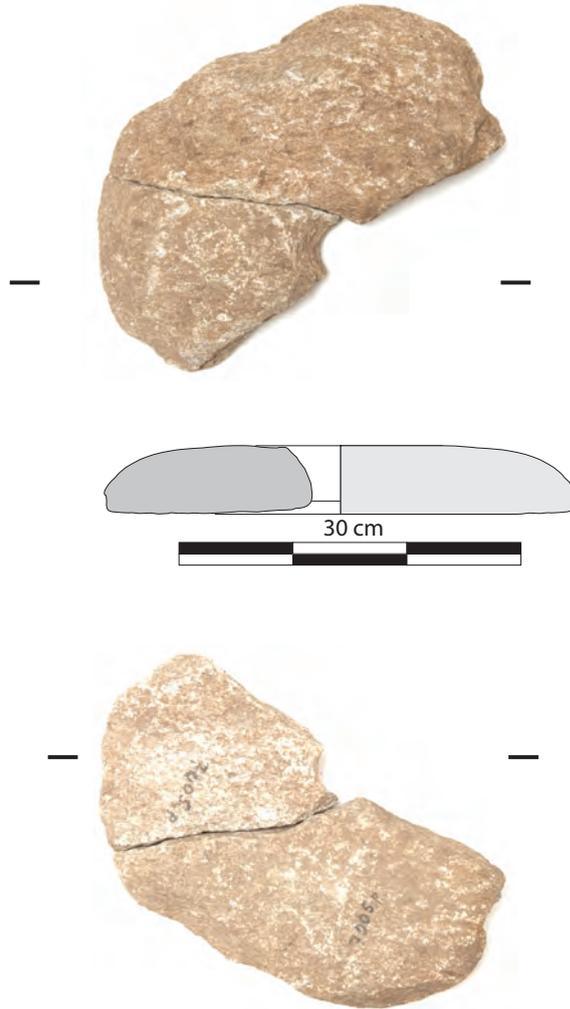
Context: Found in secondary position in the entrance room of the building.

Dating: *T.a.q.* c. 400 AD.

Bibliography: Unpublished.

Cat. no. 79

Inv. number:	S7005 p
Provenance:	Hodnafjell, farm no. 50, Rennesøy k.
% preserved:	50
No. of fragments:	2
Max diameter (cm):	42
Total height (cm):	7
Thickness (cm):	6.8
Index t % of max. diam.:	16.1
Circumference:	Irregular
Contour (edge):	Curved convergent
Grinding surface, shape:	Concave
Grinding surface:	Used
Category:	Upper stone
Upper surface:	Convex
Eye diameter, max (cm):	9
Eye diameter, min (cm):	5
Eye circumference:	Oval
Eye section:	Conical
Handle socket:	Not determinable
Rynd slots:	Not determinable
Rib:	No rib
Dressing:	Pecking
Grinding surf., height (cm):	0.5
Origin:	Erratic block
Rock type:	Gneiss
Quern type:	RQ-U I Ib



Description: Two connecting fragments making up half of an upper stone. The larger fragment, approx. 1/3 of the stone, shows damage in the eye. The eye is preserved on the smaller fragment (approx. 1/6 of the stone). The larger fragment is thicker than the smaller. Grinding surface has random pecking, rough and is missing some parts.

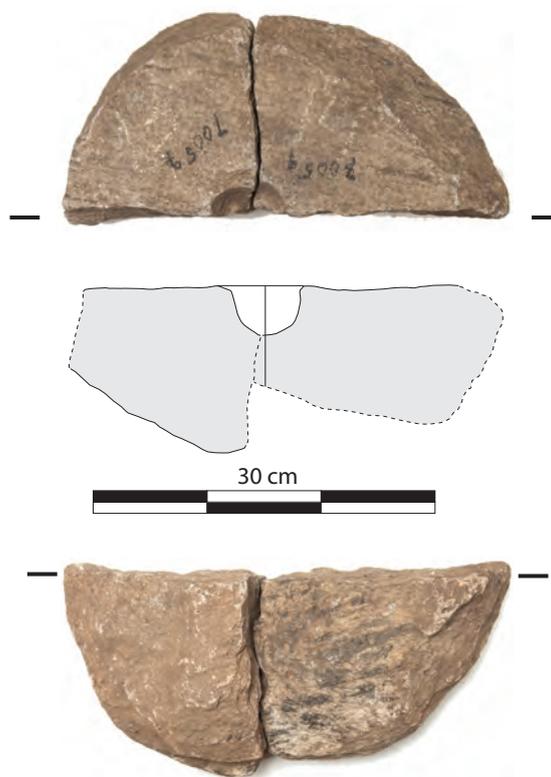
Context: Secondary use as building material in the outer stone wall of the building.

Dating: *T.a.q.* c. 400 AD.

Bibliography: Unpublished.

Cat. no. 80

Inv. number:	S7005 q
Provenance:	Hodnafjell, farm no. 50, Rennesøy k.
% preserved:	50
No. of fragments:	2
Max diameter (cm):	38
Total height (cm):	15
Circumference:	Irregular
Contour (edge):	Curved divergent
Grinding surface, shape:	Convex
Grinding surface:	Used
Category:	Lower stone
Base:	Irregular
Eye:	Partially perforated
Eye depth (cm):	4
Eye diameter, max (cm):	6.5
Lip:	Lip
Dressing:	Pecking
Grinding surf., height (cm):	Not determinable
Origin:	Erratic block
Rock type:	Gneiss
Quern type:	RQ-L 1



Description: Half of a lower stone consisting of two connecting fragments (each approx. a quarter of the stone). The base of one fragment is missing (thickness c. 12 cm). The circumference is irregular. Its max. diameter is below the upper surface. The grinding surface is missing along the whole edge of the thinner fragment, as well as on parts of its grinding surface on the thicker fragment.

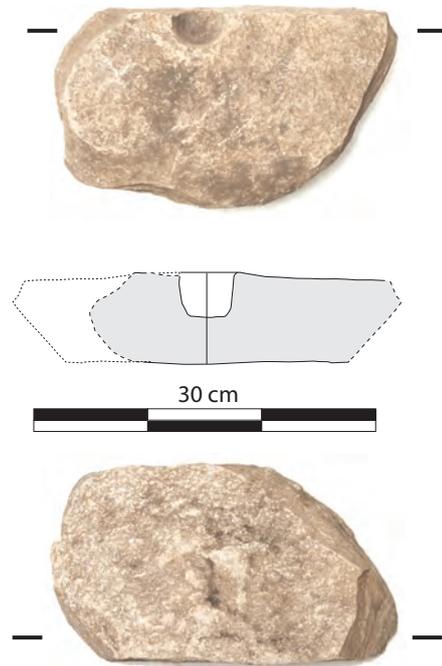
Context: Secondary use as building material in the outer stone wall of the building.

Dating: *T.a.q.* c. 400 AD.

Bibliography: Unpublished.

Cat. no. 81

Inv. number:	S7405 x
Provenance:	Vaula, farm no. 47, Rennesøy k.
Site name:	Grønevoll, House 1
% preserved:	40
No. of fragments:	1
Conservation treatment:	Not conserved
Max diameter (cm):	36
Total height (cm):	8
Circumference:	Irregular
Contour (edge):	Curved convergent
Grinding surface, shape:	Convex
Grinding surface:	Used
Category:	Lower stone
Base:	Regular
Eye:	Partially perforated
Eye depth (cm):	3.7
Eye diameter, max (cm):	4.5
Eye diameter, min (cm):	3.4
Lip:	Lip
Dressing:	Pecking
Grinding surf., height (cm):	0.6
Origin:	Erratic block
Rock type:	Fine-grained foliated gneiss (MP)
Quern type:	RQ-L 2



Description: Approx. 40% of lower stone with nearly flat base. Small lip around the eye. The edges are damaged. Its original circumference was slightly oval. Grinding surface shows random pecking.

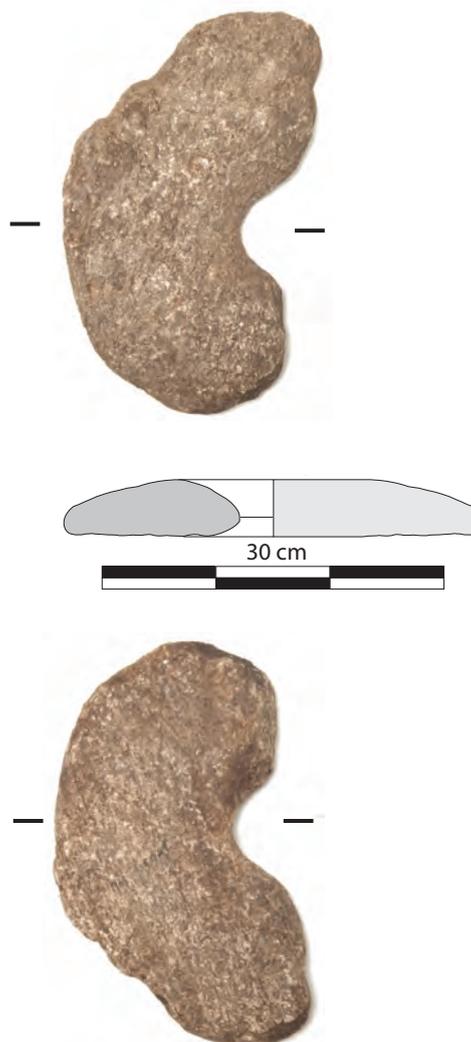
Context: Found c. 1 m E of the central hearth in House 1, albeit deeper than the hearth. The hearth belongs to the last phase of the house. Secondary position in relation to the last phase.

Dating: Antedating the last phase of the house, *t.a.q.* c. 500-550 AD.

Bibliography: Petersen 1954; Myhre 1980: 303-309.

Cat. no. 82

Inv. number:	S7405 y
Provenance:	Vaula, farm no. 47, Rennesøy k.
Site name:	Grønevoll House 1
% preserved:	50
No. of fragments:	1
Max diameter (cm):	40
Total height (cm):	5.4
Thickness (cm):	5
Index t % of max. diam.:	12.5
Circumference:	Irregular
Contour (edge):	Curved convergent
Grinding surface, shape:	Concave
Grinding surface:	Used
Category:	Upper stone
Upper surface:	Convex
Eye diameter, max (cm):	10
Eye diameter, min (cm):	6
Eye circumference:	Oval
Eye section:	Biconical
Handle socket:	Not determinable
Rynd slots:	No rynd slots
Rib:	No rib
Dressing:	Pecking
Grinding surf., height (cm):	0.5
Origin:	Erratic block
Rock type:	Granitic augen- gneiss with green mica (MP)
Quern type:	RQ-U IIc



Description: Half of upper stone with an asymmetric upper surface. The breaks and the eye are very worn, resulting in an oval appearance. Parts of the grinding surface are missing, in part due to flaking. The eye is damaged at the grinding surface. Grinding surface is rough and uneven, with traces of random pecking.

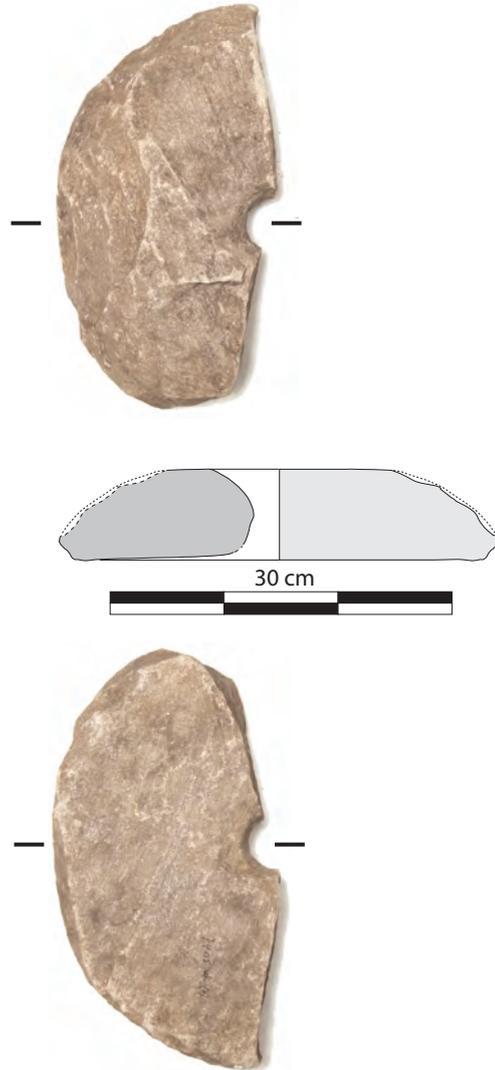
Context: Found in the SE entrance of the house, fallen from the outer stone wall when it collapsed.

Dating: *T.a.q.* 500-550 AD.

Bibliography: Petersen 1954; Myhre 1980: 303-309.

Cat. no. 83

Inv. number:	S7405 w
Provenance:	Vaula, farm no. 47, Rennesøy k.
Site name:	Grønevoll, House 1
% preserved:	45
No. of fragments:	1
Max diameter (cm):	41
Total height (cm):	8
Thickness (cm):	7.3
Index t % of max. diam.:	17.8
Circumference:	Irregular
Contour (edge):	Rounded
Grinding surface, shape:	Concave
Grinding surface:	Used
Category:	Upper stone
Upper surface:	Convex
Eye diameter, max (cm):	6.7
Eye diameter, min (cm):	4.4
Eye circumference:	Oval
Eye section:	Biconical
Handle socket:	Not determinable
Rynd slots:	No rynd slots
Rib:	No rib
Dressing:	No dressing
Grinding surf., height (cm):	0.6
Origin:	Erratic block
Rock type:	Fine-grained quartz- rich gneiss (MP)
Quern type:	RQ-U IIb



Description: Fragment of upper stone, approx. 40%, large parts of the original surface of the upper surface are missing. The edges are very damaged.

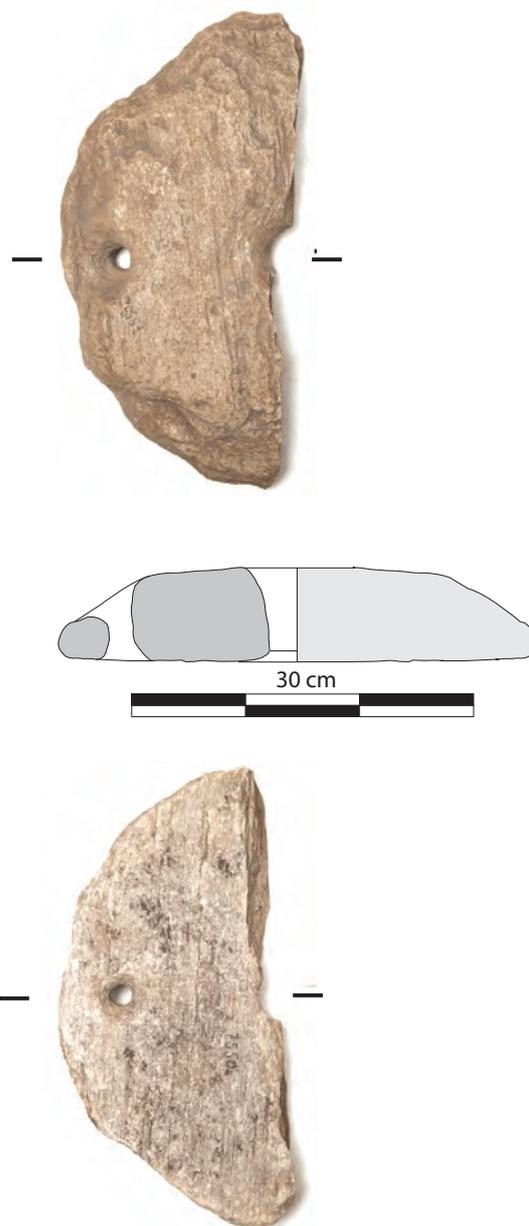
Context: Found close to the partition wall in House 1. Secondary position.

Dating: *T.a.q.* 500-550 AD.

Bibliography: Petersen 1954; Myhre 1980: 303-309.

Cat. no. 84

Inv. number:	S7550 r
Provenance:	Vaula, farm no. 47, Rennesøy k.
Site name:	Grønevoll, House 1
% preserved:	45
No. of fragments:	1
Max diameter (cm):	46
Min diameter (cm):	44
Total height (cm):	7.8
Thickness (cm):	7.8
Index t % of max. diam.:	16.9
Circumference:	Irregular
Contour (edge):	Curved convergent
Grinding surface, shape:	Concave
Grinding surface:	Used
Category:	Upper stone
Upper surface:	Flat
Eye diameter, max (cm):	6.5
Eye diameter, min (cm):	5
Eye circumference:	Oval
Eye section:	Biconical
Handle socket:	Vertical
Number of handle sockets:	1
Handle socket, diam. (cm):	6.8
Handle socket, depth (cm):	Totally perforated
Rynd slots:	No rynd slots
Rib:	No rib
Dressing:	No dressing
Grinding surf., height (cm):	1.2
Origin:	Erratic block
Rock type:	Mica gneiss (AKM)
Quern type:	RQ-U IIc1



Description: Approx. half of an upper stone with an irregular circumference; the edges are roughly worked. Upper surface is flat. Totally perforated, pronounced biconical handle socket, max. diam: 6.8 cm, min. diam: 1.8 cm. Grinding surface worn.

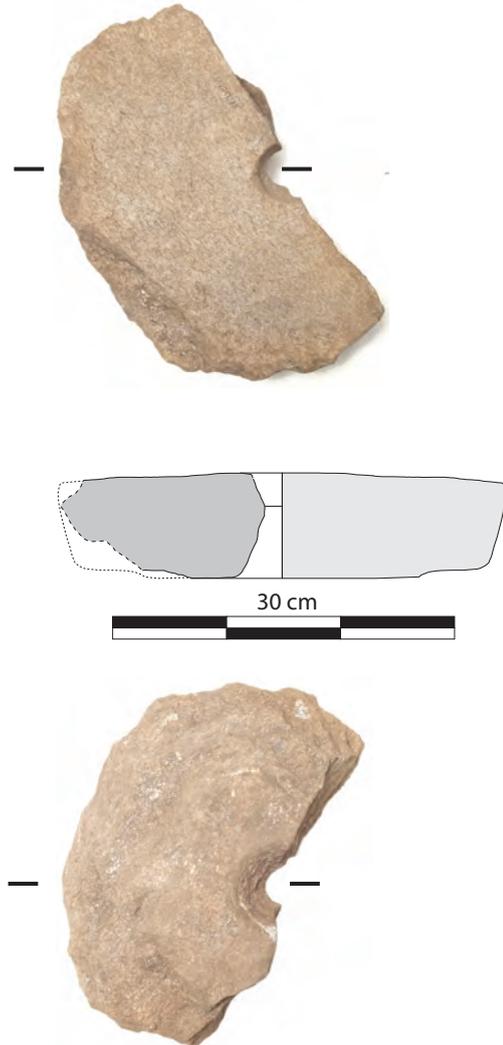
Context: Found as an integral part of the stone paving in the “smithy” of House 1.

Dating: *T.a.q.* 500-550 AD.

Bibliography: Petersen 1954; Myhre 1980: 303-309.

Cat. no. 85

Inv. number:	S12093.38
Provenance:	Raunes, farm no. 102, Vindafjord k.
% preserved:	50
No. of fragments:	1
Max diameter (cm):	40
Min diameter (cm):	37
Total height (cm):	9.7
Circumference:	Irregular
Contour (edge):	Curved convergent
Grinding surface, shape:	Convex
Grinding surface:	Used
Category:	Lower stone
Base:	Irregular
Eye:	Totally perforated
Eye diameter, max (cm):	7
Eye diameter, min (cm):	3.3
Lip:	No lip
Dressing:	Pecking
Grinding surf., height (cm):	0.1
Origin:	Erratic block
Rock type:	Mica gneiss (AKM)
Quern type:	RQ-L 2a



Description: Half of a lower stone, cracked across the eye. The base is very damaged. Totally perforated eye, biconical, very worn. Grinding surface is rough, with random pecking marks; some wear at the eye.

Context: Found as a part of the grave goods in male boat grave.

Dating: Viking Period, 800-1050 AD.

Bibliography: Unpublished report by T. Løken in the Topographical archive at the AM.