Archaeological Finds of Jet from Norway
Signs of continuous contact westwards in the Viking and Medieval Periods?

Heid Gjøstein Resi

The point of departure for this article is the find of half of a finger ring of jet from the archaeological excavations at Vesle Hjerkinn, Dovre, Oppland. The site is interpreted as a mountain lodge at the main trail over the mountains between eastern Norway and Nidaros (Weber 1986, Weber forthcoming). The site contains several buildings dated to the period 10th to the 13th century. The jet ring was found in a waste mound close to one of the buildings. Its closest parallels are found among the jet jewellery of supposed British origin from Norwegian Viking Age finds (Shetelig 1946). Gaming pieces and beads of jet from excavations of medieval towns, and beads from stave church sites show that the use of jet extended well into the Middle Ages. It is not clear whether these later finds indicate continuous contact westwards with the same supposed origins of jet as in the Viking Age, or if they originate from other areas.

The jet ring from Vesle Hjerkinn is relatively narrow (ca 4 mm), has a round-oval cross-section and an outer/inner diameter of 2.4 /1.6 cm (Fig. 1). Its slightly worn surface appears shiny under magnification, although it is far from highly polished.

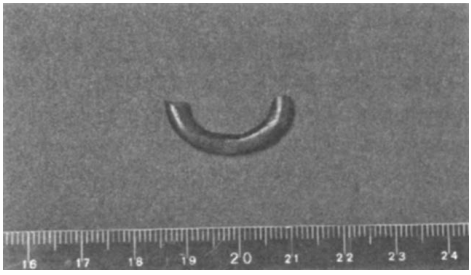

Fig. 1. Finger ring of jet from Vesle Hjerkinn (C. 37230/98). Photo: Ellen Holte, Kulturhistorisk museum, University of Oslo.

Jet and similar raw materials

Much of the literature on jet has a starting point in Pliny the Elder's (23/24–79) account in *Naturalis Historia*, Book 36, where jet was named after a river, a region or a city in Lycia (in present day Turkey) called *Gagas*. German *Gagat*, French *jais* and English *jet* have the same origin. It is doubtful whether it is really jet, and not asphalt Pliny described from Lycia. Both materials were known as *gagates lapis* in Latin, but asphalt, not jet is known today from these regions (Allason-Jones 1996: 5).

Jet is a type of brown coal formed from fossilised wood from a tree similar to the present-day Araucaria that grew during the Jurassic period approximately 180 million years ago. When the trees died, some fell into wetlands, or into rivers that eventually carried them to the sea. Plankton and other sediments impregnated the wood and contributed to the chemical change of wood to jet. Analyses of the oil content have shown that so-called hard jet was formed in salt water, while soft jet originated in fresh water. Both have the same hardness (3–4 on the Moh's scale), but hard jet is more solid and resistant while soft jet is more brittle and cracks more easily when being worked upon or when exposed to heat. Jet, like amber, is lightweight and develops a static charge when rubbed. When it is broken, jet delaminates into shell- or snail-shaped flakes and the wood's fine annual rings can sometimes be seen with the naked eye. Jet has an intense, black colour, and worked surfaces can be polished to a mirror-like finish (Muller 1998, with further references).

Other jet-like materials such as cannel coal and shale have often been regarded as equivalent to jet in the past. According to Dr. J. M. Jones of the Fossil Fuels Institute of the University of Newcastle who has analysed Roman jet objects in Britain, «Jet as a term means different things to different people, but to a geologist the term is applied only to a form of vitrinite generally derived from logs of wood washed into the sea, where the airless sediment of the sea floor was rich in the remains of planktonic material» which impregnated the wood (Jones 1996: 54). «Cannel coal is formed from plant debris accumulating as a sediment on the bottom of a lake in the coal-forming swamp»[1], while «Shale is a common sediment which consists almost wholly of clay minerals» (Jones 1996: 54). According to J. M. Jones (1996: 54), one method of determining the quality of jet, which also may aid in determining its provenance, is to measure its reflectance. Jet may be

[1] James Graham-Campbell equates «lignite» with «cannel coal» (1980: 66).

viewed as a material made up of two parts, a wood-like vitrinite and a pitch-like substance. One may assume that jet with a relatively high vitrinite content will not attain as high a polish as jet containing more pitch-like material. Jones' research shows that Yorkshire jet has lower reflectance than jet from Spanish sources. The Spanish province of Galicia and Yorkshire are the relevant sources of jet examined by Jones, and may also prove to be the most likely sources for the Nordic finds from the Viking and Medieval Periods.

The German archaeological literature mentions lignite and sapropelite as similar materials used for jewellery, in addition to jet (Rochna 1961: 333–335; 1963: 186–187). Cannel coal corresponds to the so-called true sapropelite (Rochna 1961: 334). It is claimed that it is relatively easy to distinguish jet, lignite and sapropelite (Rochna 1963: 186–187).

Early use of jet and similar materials

Jet and similar lightweight, black-brown materials were used as raw material for jewellery and figurines in parts of Europe from the late Palaeolithic (Klug-Treppe 1996: 313). In England the use of jet increased during the Bronze Age, exemplified in the form of beaded necklaces and V-perforated buttons. From the 1st century BC, traces of turning are registered on jet arm rings from this area. However, the use of jet became especially popular in Roman England during the 3rd and 4th centuries, reflected in the beads, brooches, pendants, arm and finger rings that have been found. Production continued on a smaller scale during the Anglo-Saxon and Viking Ages. In the Medieval Period jet was worked around Whitby, Yorkshire, and shale was worked on the Isle of Purbeck, Dorset. During this time, both in England and in the jet-rich regions of Galicia in Spain, production focused mainly on crucifixes, rosary beads and figurines (Allason-Jones 1996, with further references).

Sources of jet of varying quality are known throughout the world. In Europe, sources have been located in England, Germany, France, Spain, Portugal, Turkey and Russia. In Norway there are also unexploited sources of jet on Andøya and in Beitstadfjorden, Trøndelag[2]. British sources of jet are largely confined to the Yorkshire coast. Areas around Whitby in Yorkshire are thought to be important early sources of jet production, through its availability on the shore and perhaps

[2] Personal communication, Richard Binns, Trondheim.

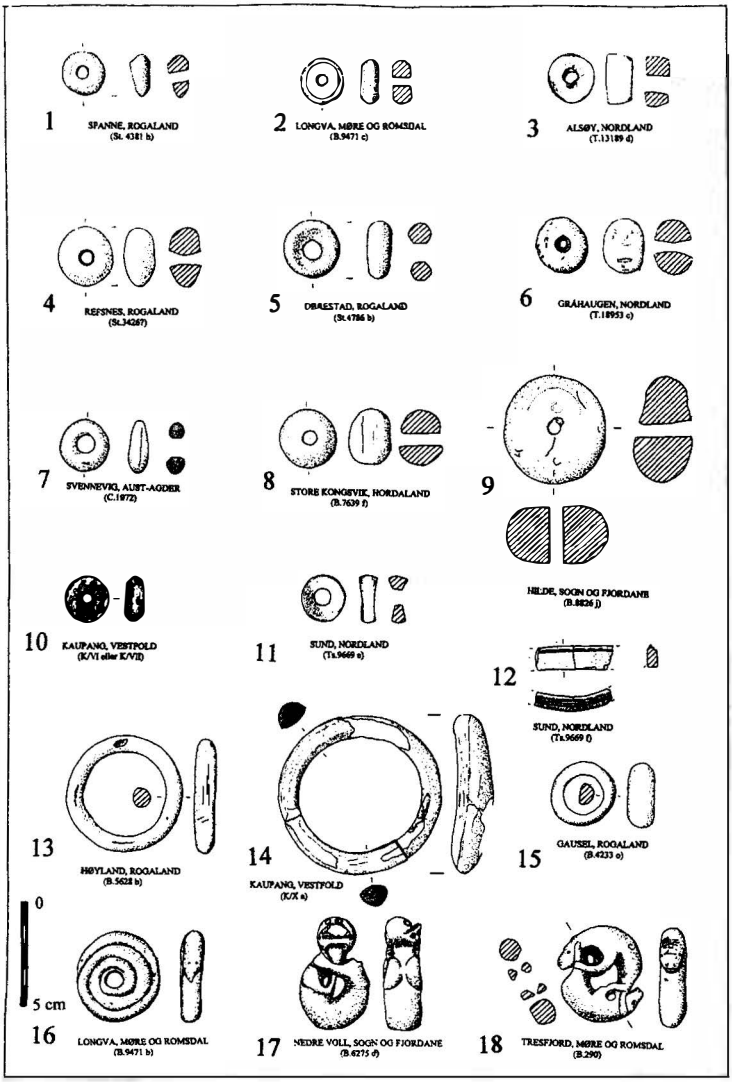

Fig. 2. Beads (1–11), rings (12–15) and figurines (16–18) of jet from Norwegian Viking Age graves (Finds list 1).

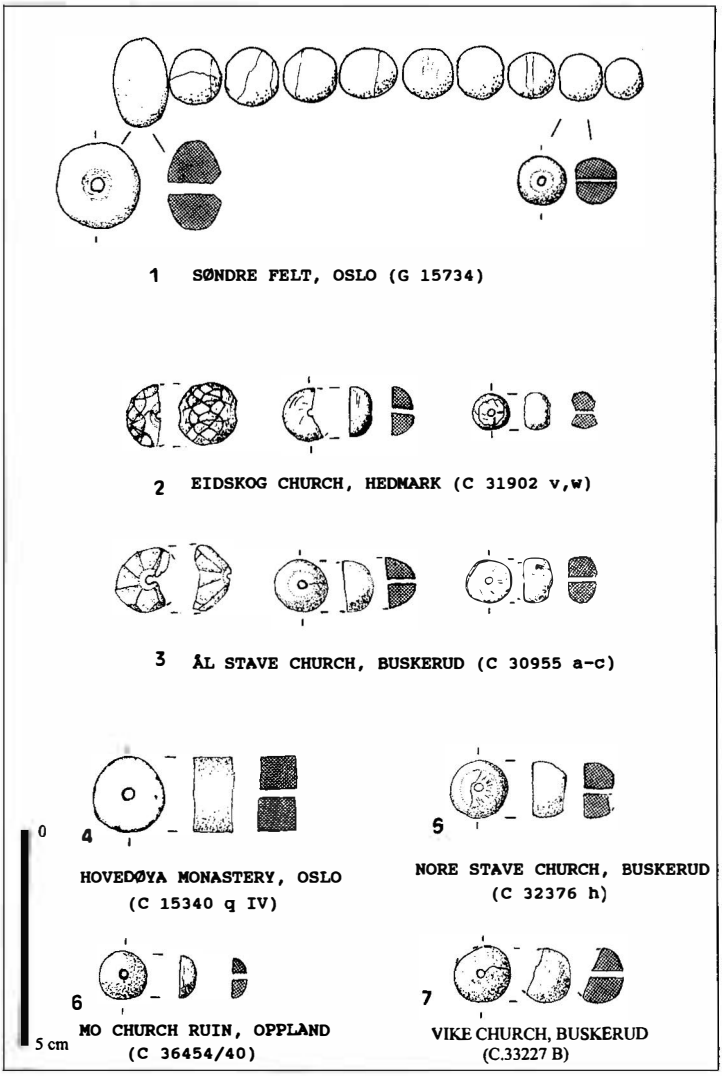

Fig. 3. Beads of jet from the Medieval Period. City finds (1), church finds (2–7) (Finds list 2).

also by mining. The Kimmeridge Clay formation, extending from Dorset to Teesside, was an important source for shale (Jones 1996). Jet of exceptional quality from Galicia and other nearby areas in Northwest Spain was also used during the Medieval Period. German researchers look to Schwäbisch Alb as the likely source for the Hallstatt period's Central European jet products (Rochna 1962: 69–70, Abb. 5). Jet was worked at in Schwäbisch Gmünd in the 15th century. In the same region large deposits of lignite are also found. On the other hand, sapropelite, represented in the large find from Manching, originates from Schlan and the Plzen basin in the North of the Bohemian region, Czech Republic (Rochna 1961), based on results from analytical investigations.

Norwegian jet finds from the Viking and Medieval Periods

A small but significant number of objects of jet or jet-like material are found in Norwegian Viking Age graves. Only a few grave finds have been made since H. Shetelig's important article (1946) (see Finds List 1). Most of the objects originate from women's graves (9 women's graves, 1 man's grave) from the 9th century (a total of 14 graves), more seldom from the 10th century (4 graves). The finds are mostly relatively large beads (Fig. 2.1–12), a few rings of different sizes (Fig. 2.13–15) and animal figurines (Fig. 2.16–18). With two exceptions (B.9471 from Longva, an animal figure and one bead, and Ts.9669 from Sund, one bead and one ring) only one jet object was found in each grave. This may imply that jet objects were highly valuable but when it comes to the beads perhaps a fine selection of beads of different forms and materials was in tune with contemporary fashion. H. Shetelig stressed that the spread of Norwegian jet finds closely corresponds with the distribution of so-called Irish metalwork, centred in western Norway, especially Rogaland, but also further north along the coast (Shetelig 1946, fig .7). Shetelig suggested that this may be connected with the cultural impulses gained by Viking raids westwards. The recent grave finds from Nordland appear to confirm this distribution trend, while jet from the Kaupang graves widens these perspectives (Fig. 4, Finds List 1). The presence of jet in both graves and settlement in Kaupang, Vestfold, offers a greater possibility to evaluate how well known, desirable and unusual this material may have been in the Norwegian Viking Age. The same applies to the the jet finds from the settlement at Borg, Nordland. It is in its 'everyday life' context that the jet ring from the settlement at Vesle Hjerkinn gains special meaning.

The few jet finds from Medieval towns and church sites are mainly beads (Fig. 3). They are consistently much smaller than those from the Viking Age, and

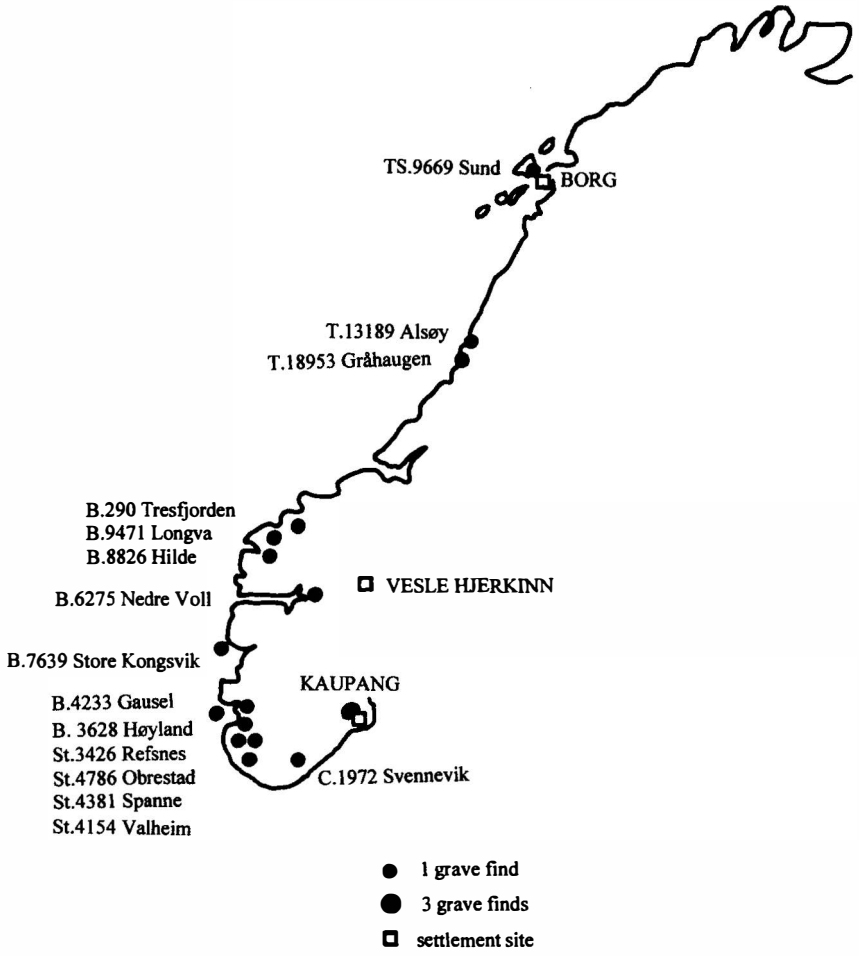

Fig. 4. Viking Age finds of jet in Norway according to Shetelig (1946, Fig. 7) and finds from later excavations (Finds list 1).

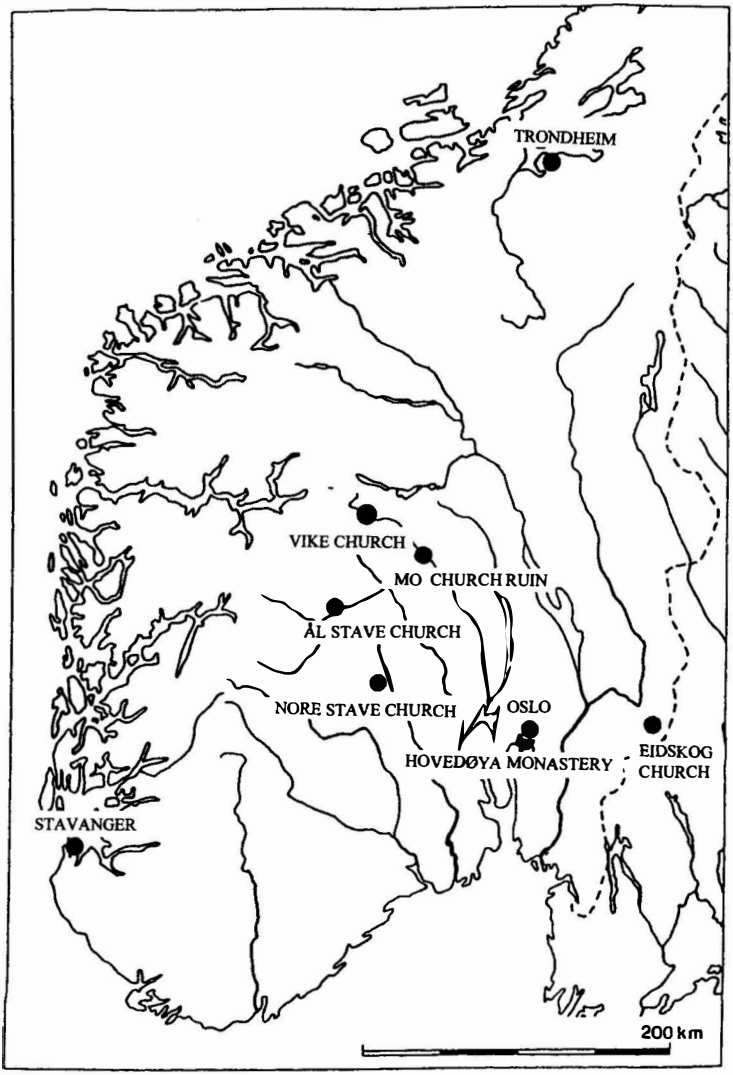

Fig. 5. Norwegian sites for jet from the Medieval Period (Finds list 2).

some showing traces of turning. They are especially elegantly worked, faceted and polished to a high gloss (Fig.3, Finds List 2). In the Medieval Period, it seems that beads were not part of the usual attire and finds with beads are often interpreted in connection with rosaries (Widding et al. 1969). Jet beads found spread on Norwegian church sites are likely to have belonged to rosaries used during prayer[3]. A find of jet beads from Søndre Felt, Oslo (Fig. 3.1) has an especially interesting context. A layer dating to the end of the 1200's held 12 jet beads and 13 amber beads of similar form, 1 jet bead and 4 amber beads being larger than the rest. Excavation leader P. Molaug interpreted this find as belonging to a rosary[4]. Outside Norway, rosaries were used and mentioned at least from the 1200's (Koch 2000: 129 with further references), and the tradition lasted until the Reformation. That rosaries were in large demand is demonstrated by approximately 1500 being found in the cargo of a ship, excavated in the harbour at Køge, Denmark. They included 499 spherical jet beads (Koch 2000: 120–121; Grinder-Hansen 1996: 324, No.115).

Gaming pieces and dice are other characteristic jet finds from the Middle Ages. A crude, semi-spherical piece (possibly a spindle whorl, since it is perforated in the centre) was found in a settlement layer dating to the late 11th or early 12th century on the Library Site in Trondheim (McLees 1990: 42 and fig. 10). The same excavation also produced one pointed and one disc-shaped and decorated jet gaming piece. McLees refers to parallels from York and Winchester for three jet dice with silver inlaid spots dating from the mid 13th century (McLees 1990: 79, Fig. 40). A cylinder-shaped gaming piece of jet was found in an excavation at Skagen 3, in Stavanger (S.9454 IX, Finds List 2).

Parallels to the ring from Vesle Hjerkinn

There are no jet finger rings among Norwegian Medieval finds. Moreover as finger rings of metal are relatively seldom in the Norwegian Viking Age, it is not surprising that it is difficult to find exact parallels to the ring from Vesle Hjerkinn among Viking Age finds. Among the jet finds from Norwegian graves, there is

[3] Anne Marie Mörch von der Fehr has compiled the list of jet beads from Medieval churches in Southern Norway based on study of finds in the museums and museum catalogues.

[4] Petter Molaug and Tina Wiberg gave the author permission to mention and portray the yet unpublished jet beads from Søndre Felt, Oslo.

only one ring the size of a finger ring. It was found in a rich woman's grave dating to the second half of the 9th century at Gausel in Rogaland (Fig. 2.15; Shetelig 1946: 5). This grave also contained a metal ornamentation from a horse harness of Anglo-Irish origin (Wamers 1985; Bakka 1993). The Gausel ring differs from the ring from Vesle Hjerkinn by its larger width (12 mm) and its approximate D-shaped cross-section.

The grave finds also reveal a pair of jet rings, which in size appear to fall somewhere between a finger ring and an arm ring for a fully grown person, making their function rather difficult to interpret. Such a medium sized jet ring comes from a woman's grave dating to the 9th century from Sund in Nordland (Fig 2.12) which has an angular cross-section, while the ring from a woman's grave dating to the first half of the 9th century from Høyland, Rogaland (Fig. 2.13) has a round-oval cross-section, similar to the smaller ring from Vesle Hjerkinn. The lignite-like arm ring with the round-oval cross-section and an inner diameter of 5.7 cm from a woman's grave dated to the 9th century from Kaupang, Vestfold, is interpreted as belonging to a child, due to its size (Heyerdahl-Larsen 1999: 45).

Excavations of the chieftain's farm at Borg, Nordland, produced a bead and a jet ring. The ring, which has a faceted cross-section and an original outer diameter of approximately 3.2 cm, appears to be too large for a finger ring. It was discovered in a post-hole in the finds-rich north corner of the room interpreted as a guildhall (Munch 1992: 267, Fig. 154c; Munch 1991: 331; Munch 2003: 241–242). Two gold-foil plaques were found in a similar post-hole nearby. The find context is interpreted as belonging to the Viking Age (Munch 1991: 330). Among the as yet unpublished jet finds from the Viking age settlement at Kaupang, Vestfold are some rings of finger ring size.

Only a few Nordic sites have produced Viking Age jet or jet-like materials, and few of these finds have been published. In addition to the often cited arm ring found in the chamber tomb BJ 860A from Birka, a grave for two women dating to the 10th century (Shetelig 1946: 7–8; Aiken and Arwidsson 1986: 74–75), there are fragments of two very similar rings from H. Stolpe's excavation in the habitation area (Svarta Jorden) (inv.5208:2517) and a fragment of an arm ring with a rounded, triangular cross-section found in the «Black Earth's» harbour area (Danielsson 1973: 67).

On the other hand, arm rings and some smaller rings dominate Viking Age jet finds in Iceland, the Orkney Islands, Shetland, the Faeroe Islands and Scotland (Hansen 1996: 127–128, with further references). It is first among the finds from Anglo-Scandinavian York that finger rings of jet and amber appear in significant

amounts. Such finds of finger rings broken during use or production (Waterman 1959: 104, Fig. 25–23; Mainman and Rogers 2000: 2587–2588, Fig. 1281), production waste and finished finger rings found near amber and jet workshops from the 10th century at Coppergate (Hall 1984: 76, Fig. 81) verify that finger rings were produced locally. Most of the finger rings shown in the figures have a D-shaped cross-section, but some are round-oval (Mainman and Rogers 2000, Fig. 1281:9846, Coppergate). As similar, simple jet finger rings were also produced in Roman Age York, it is difficult to date the rings with certainty. Arm rings, beads, gaming pieces and dice of jet (like those from Trondheim) have also been produced in York throughout the Anglo-Scandinavian period.

Jet finger rings were also produced in nearby areas during the Medieval Period. Finds from Flaxengate in Lincoln include examples of both finished and unfinished versions, dating from the 11th century (Mann 1982: 11, Fig. 7). Most have D-shaped cross-sections, but there are also rings with round-oval cross-sections (Mann 1982, Fig .7:75).

Because of York's proximity to excellent sources of raw material for jet, shale and cannel coal there has been little discussion as to the origin of the raw material of Viking Age production found there. However it is also well known that raw materials for jet production have been exported (as was raw amber). The significant number of jet objects and pieces of raw material found in Viking Age Dublin (Wallace and Floinn 1988) imply that imported products could also have been pre-worked there, as S. Stummann Hansen (1996: 127) suggested.

The parallel finds and its shape and size support the possibility that the finger ring from Vesle Hjerkinn was made of Yorkshire jet during the Viking or Middle Ages. Does the raw material differ in any way from what we know about Viking and Middle Age jet finds in Norway?

As part of a preliminary investigation, Professor Unn Plahter at the University Museum of Cultural Heritage, Oslo, has microscopically examined all Viking and Medieval jet finds in the collection[5]. Jet from the Viking Age showed greater variation than jet from Medieval finds. The ratios of the fibrous structure (lignite) to pitch varied more in jet from the Viking Age than from the Medieval period. The large arm ring from Kaupang has a predominantly more wood-like structure than the other jet examined. The ring from Vesle Hjerkinn is relatively compact,

[5] Unn Plahter's investigation will be published as part of an article about the jet finds from settlement excavations in Kaupang, Vestfold

and has only a slightly fibrous structure. Some of the Medieval finds, notably the faceted bead from Eidskog church (which shows traces of turning), as well as the rosary beads from Oslo's Medieval City, have a glossy appearance, with little fibrous structure. In general, however, Plahter's preliminary findings show that the similarity between the material from the Medieval Period and the Viking Age (with the exception of the arm ring from Kaupang) is so great that their sources may not necessarily be widely separated. Hence, this supports the hypothesis that this material originated from Yorkshire or at least Great Britain.

Jet finds made in Norway date from the 8th to the 10th centuries, but none can be dated with certainty to the 11th century. However, because of the relative scarcity and exclusive quality of the Medieval jet finds, they may suggest direct, continuous contact with England from the Viking Age into the Middle Ages, in common with the tool marks found on the masonry in Nidaros Cathedral in Trondheim, which point towards contact with Lincoln. The oldest Cistercian Monasteries at Lyse near Bergen and Hovedøya near Oslo were moreover founded from Fountains Abbey near York and Kirkstead Abbey near Lincoln, respectively. A beautiful, large jet bead (Fig. 3.4) was found in the ruins of Hovedøya Monastery, Oslo. A few scattered signs of connections with England may be observed in the distribution of English-inspired early Medieval wooden sculptures, as well as the later occurrence in Norway of alabaster plaques from Nottingham.

The jet ring that ended up in the waste heap at Vesle Hjerkinn may be another sign of everyday life that illustrates this cultural connection.

Acknowledgements

Sincere thanks go to Anne Marie Mörch von der Fehr for all the references to jet beads from Medieval churches in Southern Norway, to Petter Molaug and Tina Wiberg for the opportunity to study the jet beads from Søndre Felt, Oslo, to Unn Plahter for analysing the jet objects from Oldsaksamlingen, Oslo, to Gerd Stamsøe Munch for giving access to the jet finds from Sund and Borg at Borg Museum, to Richard Binns for the reference to jet deposits in Norway, to Sigrid Kaland for giving me the opportunity to study jet finds at the Historical Museum in Bergen, to Jenny Rita Næss for making jet finds available at the Archaeological Museum in Stavanger, to Vitenskapsmuséet in Trondheim for the opportunity to study their jet finds and to Øystein Ekroll for information on the Anglo-Norwegian cultural associations in the early Middle Ages.

Finds List 1 (Fig.2).

VIKING AGE

Survey of the Viking Age jet finds from Norwegian sites based on information gathered by Jan Petersen (1940: 207–208), with additions by Haakon Shetelig (1946: 4–9) and with more recent finds added.

GRAVE FINDS

C.1972 Svennevig, Hommedal, Aust-Agder (Fig. 2.7)
Bead. Grave with brooches from the 8th C.
Shetelig 1946: 4.

C.: K/VI grave I h or K/VII Søndre Bikjholberget, Kaupang, Tjølling, Vestfold (Fig. 2.10)
Bead. Uncertain whether it belongs to K/VI (man's grave I) or K/VII (women's graves), 9th C.
Blindheim & Heyerdahl-Larsen 1995: 30, Pl. 21, K/VI gr.I h.

C.: K/X a Lamøya, Kaupang, Tjølling, Vestfold (Fig. 2.14)
Arm ring (lignite?). Woman's, possibly child's grave, 9th C.
Blindheim & Heyerdahl-Larsen 1995: 51–52, 116.

C.: K 1951 d Nordre Bikjholberget, Kaupang, Tjølling, Vestfold
Bead / spindle whorl. Unknown context.
Blindheim & Heyerdahl-Larsen 1995: 66.

B.290 Tresfjorden, Vestnes, Møre og Romsdal (Fig. 2.18)
Animal figure. Single find.
Shetelig 1946: 6, Fig. 4.

B.5628 Høyland, Hå, Rogaland (Fig. 2.13)
Ring. Woman's grave, first half 9th C.
Shetelig 1946: 4, Fig. 1.

B.6275 Nedre Vold, Lærdal, Sogn og Fjordane (Fig. 2.17)
Animal figure. Man's grave, 9th C.
Shetelig 1946: 5–6, Fig. 3.

B. 8826 j Hilde, Innvik, Sogn og Fjordane (Fig. 2.9)
Bead. Mixed grave finds, Viking Age.
B.M.Å. 1936, Historisk-Antikvarisk rekke, Nr.5:22–23

B.9471 b, c Longva, Haram, Møre og Romsdal (Fig. 2.2, 16)

Animal figurine, bead. Woman's grave, 10th C.
Shetelig 1946: 6, Fig. 4.

B.7639 f Store Kongsvik, Tysnes, Hordaland (Fig. 2.8)
Bead. Man's and woman's grave, approx. 800 AD
Shetelig 1946: 5.

St.3426 Refsnes, Hå, Rogaland (Fig. 2.4)
Bead. Woman's grave, end 9th C.
Shetelig 1946: 5.

St.4154 Valheim, Hjelmeland, Rogaland
Bead. Woman's grave, early 9th C.
Shetelig 1946: 5.

St.4233 o Gausel, Hetland, Rogaland (Fig. 2.15)
Ring. Woman's grave, second half 9th C.
Shetelig 1946: 5; Bakka 1993: 261, Fig. 8.

St.4381 h Spanne, Finnøy, Rogaland (Fig. 2.1)
Bead. Man's grave, approx. 900 AD
Shetelig 1946: 5.

St.4786 b Obrestad, Hå, Rogaland (Fig. 2.5)
Bead. Woman's grave, early 9th C.
Shetelig 1946:5.

T.13189 d Alsøy, Nesna, Nordland (Fig. 2.3)
Bead. Woman's grave, 10th C.
Shetelig 1946: 6 ; Sjøvold 1974, L.97: 228.

T.18953 c Gråhaugen, Alstahaug, Nordland (Fig. 2.6)
Bead. Woman's grave, 9th C.
Det Kgl. Norske Videnskabers Selskab, Muséet, Antikvarisk avdeling. Finds Catalogue 1969 (1974):10. Trondheim.

Ts.9669 e, f Sund, Vestvågøy, Nordland (Fig. 2.11–12)
Bead, ring. Woman's grave, 9th C.
Unpublished finds catalogue, G. S. Munch, Tromsø Museum.

SETTLEMENT FINDS

C.37230/98 Vesle Hjerkinn, Dovre, Oppland (Fig. 1)
Finger ring. Settlement find number 238/1985, Waste heap II, level 30–40 cm.
Viking Age / Medieval.

Weber 1986: 188–189, Fig. 9 b.
C. K 1950d Kaupang, Tjølling, Vestfold
Bead/spindle whorl. Settlement or grave find, Viking Age.
Heyerdahl-Larsen 1999: 67.
Remaining jet finds from the settlement are unpublished.
Ts.8335 Borg, Vestvågøy, Nordland
Ring, bead. Settlement find, Late Iron Age.
Munch 1991: 325, 331; Munch 1992: 267, Fig. 154 c.

Finds list 2 (Fig. 3)

FINDS OF JET DATING TO THE MIDDLE AGES FROM SOUTHERN NORWAY
G.15734 – 15745 Søndre felt, gnr. 34020 , Oslo (Fig. 3.1)
12 rosary beads. From find layers from the end of the 1200's.
Found in layer 249, square M24, Southeast quadrant, underneath fire 6.
C.15340 q IV Hovedøya Monastery, Oslo (Fig. 3.4)
Bead. Find information: Å.03.
C.30955 a-c Ål Stave Church, Ål, Buskerud (Fig. 3.3)
3 beads
C.31902 v,w Eidskog Church, Eidskog, Østfold (Fig .3.2)
3 beads
C.32376 h Nore Stave Church, Nore and Uvdal, Buskerud (Fig. 3.5)
Bead. Found in the south trancept, in loose surface fills. Find number 47b.
C.33227 B Vike Church, Modum, Buskerud (Fig. 3.7)
Bead. Found in the Southern nave.
C.36454/40 Mo Church ruins, Vestre Slidre, Oppland (Fig. 3.6)
Bead. Found in the nave west part, outside the trial shaft. Found in a mixture of soil and limestone gravel, above a relatively continuous layer. Find number C25.
St. 9454 IX Skagen 3, Stavanger, Rogaland.
Gaming piece. Town settlement layer.
Head of Excavation Arnvid Lillehammer.
SMÅ 1968: 152, Fig. 8.

Trondheim, Settlement layer, Folkebibliotek site:
FE 43 N15671 Gaming piece. Unknown context. (McLees 1990: 234, Plate 8).

FE 1088 N37569 Gaming piece. Early? 12th C. (McLees 1990: 189).
FH 70 N19201 Gaming dice. Mid-13th C. (McLees 1990: 78–79, 239, Plate 10).
FK 402 N28107 Gaming dice. Mid-13th C. (McLees 1990: 77–79, 240, Fig. 40, Plate10).
FT 104 N53192 Gaming dice. Mid-13th C. (McLees 1990: 78–79)
FL 521 N33332 Gaming piece. (McLees 1990: 42–43, Fig. 10)

Jet finds of unknown date, possibly Medieval
St.6855 Reiestad, Hå, Rogaland
Possible gaming piece (disc-shaped). Single find of unknown date.
SMÅ 1940–4: 59, Fig. 5.
St.7015 Brimsøy, Rennesøy, Rogaland
Possible gaming piece (hemispherical, decorated). From a mound, together with a spindle whorl, spearhead, oval brooch (R648). Unknown date.
SMÅ 1944: 34–35.

References

Aiken, E. & G. Arwidsson 1986: Armringe, Armbügel und Fingerringe. In: Arwidsson, G. (ed.): *BIRKA II:2. Systematische Analysen der Gräberfunde*, p.73–76. Stockholm.

Allason-Jones, L. 1996: *Roman Jet in the Yorkshire Museum.* York.

Bakka, E. 1993: Gauselfunnet og bakgrunnen for det. *Arkeologiske Skrifter* 7, Historisk Museum, Universitetet i Bergen, p.248–304. Bergen.

Blindheim, Ch. & B. Heyerdahl-Larsen 1995: *Kaupangfunnene, bind II. Gravplassene i Bikjholbergene/Lamøya. Undersøkelsene 1950–1957. Del A. Gravskikk.* Norske Oldfunn XVI. Oslo.

Blindheim, Ch., B. Heyerdahl-Larsen & A.S. Ingstad 1999: *Kaupangfunnene, bind II. Gravplassene i Bikjholbergene/Lamøya. Undersøkelsene 1950–1957. Del B og C.* Norske Oldfunn XIX. Oslo.

Capelle, T. 1968: *Der Metallschmuck von Haithabu. Studien zur wikingischen Metallkunst.* Die Ausgrabungen in Haithabu 5. Neumünster.

Danielsson, K. 1973: Glas och halvädelstenar. In: Ambrosiani, B., B. Arrhenius, O. Kylberg & G. Werner (eds.): *Birka. Svarta jordens hamnområde. Arkeologisk undersøkning 1970–1971.* Riksantikvarieämbetet, rapport C1, p.54–83. Stockholm.

Graham-Campbell, J. 1980: *Viking Artefacts. A Select Catalogue*. British Museum Publications. London.

Grinder-Hansen, P. (ed.) 1996: *Margrete. Nordens Frue og Husbond. Kalmarunionen 600 år*. Essays og Udstillingkatalog. København.

Hall, R. 1984: *The Viking Dig. The Excavations at York*. London/Sydney/Toronto.

Hansen, S.S. 1996: Aspects of Viking Societies in Shetland and The Faroe Islands. In: Waugh, D.J. (ed.): *Shetland's Northern Link. Language and History*. The Scottish Society for Northern Studies. Edinburgh.

Heyerdahl-Larsen, B. 1999: Perler. Tilvirkning, proveniens. In: Blindheim, Ch., B. Heyerdahl-Larsen og A.S. Ingstad: *Kaupangfunnene, Bind II. Gravplassene i Bikjholbergene/Lamøya. Undersøkelsene 1950–1957. Del B og C*. Norske Oldfunn XIX, p.59–70. Oslo.

Jones, J.M. 1996: The Analysis of Jet. In: Allason-Jones, L.: *Roman Jet in the Yorkshire Museum*. York.

Klug-Treppe, J. 1996: Gagat. *Reallexikon der Germanischen Altertumskunde* 12:313–316. Berlin/New York.

Koch, H.D. 2000: Rosenkranse i grave. Gravskikkens bakgrund, datering og perspektiver. *Hikuin* 27:107–136. Højbjerg.

MacGregor, A. 1978: Industry and Commerce in Anglo-Scandinavian York. In: Hall, R.A. (ed.): *Viking Age York and the North*. Research Report 27:37–73. The Council for British Archaeology. London.

McLees, C. 1990: *Games People Played. Gaming-pieces, Boards and Dice from Excavations in the Medieval Town of Trondheim, Norway*. Fortiden i Trondheim bygrunn: Folkebibliotekstomten. Meddelelser 24. Riksantikvaren. Utgravningskontoret for Trondheim. Trondheim.

Mann, J.E. 1982: Early Medieval Finds from Flaxengate. In: *Objects of antler, bone, stone, horn, ivory, amber, and jet. The Archaeology of Lincoln* XIV–1. Lincoln Archaeological Trust. Council for British Archaeology. London.

Mainman, A.J. & N.S.H. Rogers 2000: Craft, Industry and Everyday Life: Finds from Anglo-Scandinavian York. In: Addyman, P.V. (ed.): *The archaeology of York* 17. *The Small Finds*. Fasc. 14. York.

Muller, H. 1998: *Jet Jewellery and Ornaments*. Shire Album 52. Shire Publications Ltd. Buckinghamshire.

Munch, G.S. 1991: Hus og hall. En høvdinggård på Borg i Lofoten. In: Steinsland, G. et al. (eds.): *Nordisk Hedendom. Et symposium*, p.321–333. Viborg.

Munch, G.S. 1992: Gjenstander fra høvdinggård i Lofoten. In: Roesdahl, E. (ed.): *Viking og Hvidekrist. Norden og Europa 800–1200*. Den 22. Europarådsudstilling. Nordisk Ministerråd i samarbejde med Europarådet, p. 267–268. København/ Paris/Berlin.

Munch, G.S. 2003: Jet, amber, bronze, silver and gold artefacts. In: Munch, G.S., O.S. Johansen and E. Roesdahl (eds.): *Borg in Lofoten. A chieftain's farm in North Norway*. Arkeologisk skriftserie 1. Lofotr. Vikingmuséet på Borg. Trondheim.

Petersen, J. 1940: British Antiquities of the Viking Period, Found in Norway. In: Shetelig, H. (ed.): *Viking Antiquities in Great Britain and Ireland*. The Scientific Research Fund of 1919. Oslo.

Rochna, O. 1961: Zur Herkunft der Manchinger Sapropelit-Ringe. Mit Beiträgen von M. Teichmüller, Krefeld und K. Mädler, Hannover. *Germania* 39, p.329–354. Frankfurt.

Rochna, O. 1962: Hallstattzeitlicher Lignit- und Gagat-Schmuck. Zur Verbreitung, Zeitstellung und Herkunft. *Fundberichte aus Schwaben, Neue Folge* 16, p.44–83. Stuttgart.

Rochna, O. 1963: Gagat-Schmuck aus der frühen Eisenzeit in Unterfranken. *Mainfränkisches Jahrbuch für Geschichte und Kunst* 15, p.185–199. Würzburg.

Shetelig, H. 1946: Smykker av jet i norske vikingefunn. *Bergens Museums Årbok* 1944 (1946), Historisk-antikvarisk rekke 1. Bergen.

Sjøvold, Th. 1974: *The Iron Age Settlement of Arctic Norway II. Late Iron Age (Merovingian and Viking Periods)*. Tromsø Museums Skrifter X. Tromsø/ Oslo/Bergen.

Wallace, P.F. & O. Floinn, R. 1988: *Dublin 1000. Discovery and Excavation in Dublin, 1842–1981*. Dublin.

Wamers, E. 1985: *Insularer Metallschmuck in wikingerzeitlichen Gräbern Nordeuropas. Untersuchungen zur skandinavischen Westexpansion*. Offa-Bücher 56. Neumünster.

Waterman, D.M. 1959: Late Saxon, Viking and Early Medieval Finds from York. *Archaeologia* 97, p.59–105.

Weber, B. 1986: Vesle Hjerkinn – en fjellgård(?) med mange ben å stå på. *Viking* 1985/86, p.181–201. Oslo.

Widding, O., H. Bekker-Nielsen, Å.G. Blom, N.M. Saxtorph, Å. Nisbeth & B.C. Lange 1969: Rosenkrans. *Kulturhistorisk leksikon for nordisk middelalder*, vol. XIV, coll. 414–420. Oslo.

ABBREVIATIONS:
BMÅ: Bergens Museums Årbok, Bergen
SMÅ: Stavanger Museums Årbok, Stavanger

Sammendrag: Arkeologiske funn av jet fra Norge Tegn på kontinuerlig kontakt vestover i vikingtid og middelalder?

Artikkelen tar utgangspunkt i en halv fingerring av jet som kom fram ved arkeologiske utgravninger på Vesle Hjerkinn, Dovre, Oppland (Fig. 1). Funnlokaliteten tolkes som et overnattingssted på hovedruten over fjellet mellom Østnorge og Nidaros (Weber 1986, Weber under trykking). Her fantes levninger av flere hus fra perioden 10.-13. århundre. Jetringen som stammer fra en avfallshaug tett ved en av bygningene, har sine nærmeste paralleller blant jetsmykker av antatt britisk opphav fra norske vikingtidsgraver (Fig. 2, Shetelig 1946). Spillebrikker og perler av jet fra utgravninger i middelalderbyer og perler fra stavkirketufter tyder på at jet var i bruk i Norge godt inn i middelalderen (Fig. 3). Spørsmålet er om de sene funnene stammer fra de samme områder som vikingtidsfunnene og vitner om kontinuerlig kontakt vestover eller om de har annet opphav.

Jet er en type brunkull av fossilt tre fra Juraperioden, for ca. 180 millioner år siden. Under påvirkning av planterester i oppløsning foregikk en kjemisk forandring av treet til jet. I likhet med rav er jet meget lett, det har en intens, svart valør og bearbeidete flater kan poleres til høyglans. Jetforekomster kjennes i mange regioner, men Yorkshire i England, Galicia i Spania, Schwäbisch Alb i Tyskland og områder i tsjekkisk Nord-Böhmen har oftest vært tolket som opphavsområder for europeiske jetfunn fra bronse- eller jernalder. Engelske paralleller til de norske funnene gjør det i første omgang naturlig å søke opphavsområdene der.

Jetringen fra Vesle Hjerkinn er relativt smal, av rundt-ovalt tverrsnitt og har en ytre diameter på 2,4 cm. Blant gravfunnene fra vikingtid kjennes foreløpig bare en enkelt ring på størrelse med en fingerring, nemlig den fra en rikt utstyrt kvinnegrav fra annen halvdel av 9. århundre e.Kr. fra Gausel i Rogaland (Fig. 2.15). Gauselringen skiller seg fra Hjerkinn-ringen ved sin store bredde og sitt D-formete tverrsnitt. Blant de ennå upubliserte boplassfunnene fra tettstedet Kaupang i Vestfold inngår også noen ringer av fingerrings størrelse. Funnmaterialet fra Yorks rikholdige, anglo-skandinaviske bosetningslag verifiserer ved funn av råmateriale, produksjonsavfall og ferdige fingerringer at slike ringer

bl.a. ble produsert der. Og det ble stadig fremstilt fingerringer av jet i England i middelalder.

En foreløpig mikroskopisk undersøkelse ved professor Unn Plahter av alle jetfunn fra vikingtid og middelalder i Kulturhistorisk museum, Oslo, viser så stor materiallikhet mellom disse funnene at det er grunn til å tro at opphavsområdene ikke kan ha ligget fjernt fra hverandre.

En rekke andre kulturspor (redskapsmerker på katedralen i Trondheim, engelskinspirerte treskulpturer, anlegg av cistercienserklostre i Norge utfra engelske klostre) viser en kontinuerlig kontakt mellom norske og engelske områder i vikingtid og middelalder. Jetringen som havnet i avfallshaugen i høyfjellet er et tegn fra hverdagslivets sfære på denne hyppige kulturkontakten.

Heid Gjøstein Resi (født 1939) er professor ved Kulturhistorisk museum, Universitetet i Oslo, Frederiksgate 2, Postboks 6762, St. Olavs plass, 0130 Oslo. Hennes publiserte arbeider omhandler gravfunn fra eldre og yngre jernalder (gravfeltet Hunn i Østfold) og vikingtids eksportartikler fra Skandinavia (klebergjenstander og bryner funnet i Hedeby).