Tooth and amber amulets – magic elements of clothing in Danish Stone Age burials

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Zusammenfassung

Zahn- und Bernsteinamulette – magische Kleidungsbestandteile in dänischen Steinzeitgräbern

Ein Überblick über Zahnperlen und Bernsteinschmuck aus der südskandinavischen Steinzeit zeigt eine starke Kontinuität in der Verwendung von Tierzähnen und baltischem Bernstein über den gesamten Zeitraum hinweg. Obwohl Zahnperlen bis zum Ende der Bronzezeit verwendet wurden, sind deutliche Verschiebungen in der Artenzusammensetzung zu beobachten. In der frühneolithischen Trichterbecherkultur finden sich auch Bernsteinkopien von Kupferschmuck, wie spiralförmig gewickelte röhrenförmige Perlen und buckelverzierte Kupferblechscheiben mit Doppellochung.

Tragespuren und die Lage von Bernstein- und Zahnanhängern in Gräbern zeigen, dass diese Schmuckstücke ein Bestandteil steinzeitlicher Kleidung waren. Die hohe Anzahl von Anhängern in Gräbern mit jungen Frauen und kleinen Kindern – wie Bøgebakken 8 – spricht für ihre magische Funktion als Amulette.

Am Ende der mesolithischen Ertebølle-Kultur kommt es zu bedeutenden Verschiebungen, die zweifelsohne Veränderungen innerhalb der steinzeitlichen Kosmologie widerspiegeln. Im Neolithikum ist das vorherrschende Material für Anhänger und Perlen Bernstein, aber Zahnanhänger tauchen im mittleren und jüngeren Abschnitt des Neolithikums erneut wieder auf. Am Ende der Bronzezeit verschwinden Anhänger aus Tierzähnen vollständig aus den archäologischen Aufzeichnungen, während Bernstein in der Eisenzeit und im Mittelalter weiterhin ein sehr beliebtes Material für Schmuck bleibt.

Schlagwörter Amulette, Steinzeitgräber, Skandinavien, Bernstein, Tierzähne

Summary

A review of tooth beads and amber jewellery from the South Scandinavian Stone Age shows considerable continuity in the use of animal teeth and Baltic amber throughout the entire period. Although tooth beads were used right up to the end of the Bronze Age, significant shifts in species composition are seen. In the Early Neolithic Funnel Beaker Culture, amber copies of copper jewellery, such as spirally wound tubular beads and boss-decorated copper plate discs with double perforation, are also seen.

Traces of wear and the location of amber and tooth pendants in burials show that such ornaments were integrated into Stone Age clothing. The high number of pendants in graves with young women and small children like Bøgebakken 8 speak for their magical function as amulets.

Significant shifts, undoubtedly reflecting changes within Stone Age cosmology, occur at the end of the Mesolithic Ertebølle Culture. In the Neolithic, the dominant material for pendants and beads is amber, but tooth pendants reappear in the middle and later parts of the Neolithic. At the end of the Bronze Age, pendants made of animal teeth completely disappear from the archaeological record, whereas amber continues to be a highly popular material for jewellery throughout the Iron Age and medieval period.

Keywords Amulets, Stone Age burials, Scandinavia, amber, teeth

Introduction

Southern Scandinavia, i.e. Denmark and Scania, constitutes a unique area in a geological, natural and cultural-historical sense. The area is largely covered by glacial moraine deposits, which partly consist of stone and gravel from glacier-eroded Scandinavian mountains and partly of chalk and clay that the ice pushed up from the sea floor during the advance of the glaciers through the Baltic Sea.

In the Postglacial period, the many shallow lakes of the moraine landscape attracted settlements from all three main groups of the Scandinavian Mesolithic: the Maglemose, Kongemose and Ertebølle Cultures. As well, during the last two millennia of the hunter-gatherer Stone Age in the Atlantic period, the global sea level rise created an archipelago with countless fjords and lagoons rich in fish and other marine resources. In addition to the resident fauna, the hunter-gatherers also had the opportunity to exploit large concentrations of birds and fish passing through the region during the migratory seasons.

The mild climate and the fertility of the moraine areas formed the basis for the extensive Neolithisation that took place after the emergence of the Funnel Beaker Culture around 4000 BC (Fig. 1). Although periods of renewed focus on hunting and fishing characterise the middle neolithic groups of the Limfjord and Kattegat area, agriculture and animal husbandry remained the dominant subsistence strategies of the South Scandinavian population through-

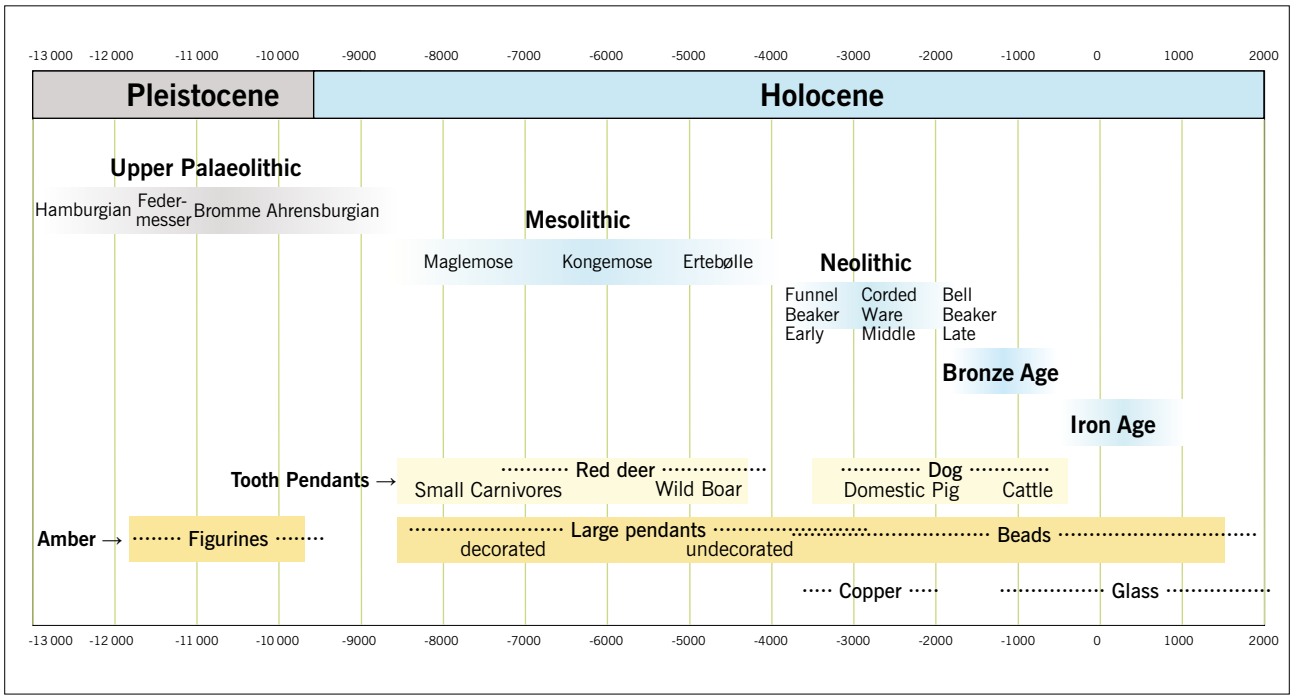

Fig. 1 Periods, cultures and finds of jewellery/amulets in South Scandinavien prehistory between 13 000 BC and 2000 AD.

Abb. 1 *Perioden, Kulturen und Funde von Schmuck/Amuletten der der südskandinavischen Vorgeschichte im Zeitraum von 13 000 v. Chr. bis 2000 n. Chr.*

out the rest of prehistory. The high content of Cretaceous lime in the soil means that bones and bone artefacts are often well preserved in South Scandinavian settlement layers and graves from the Mesolithic.

High lime content also characterises the water-saturated waste layers found at many inland settlements as well as on coastal settlements along the Littorina Sea. In addition to remains of bones and teeth, a number of well-preserved amber ornaments have also been found in these water-saturated settlement waste zones, which testify to the inhabitants' great interest in Baltic amber, which can be found along most Danish coasts.

The Neolithic Funnel Beaker Culture's introduction of agriculture and animal husbandry led to a radically changed settlement pattern. The farmers moved away from the coasts to higher-lying locations where preservation conditions in the settlement layers decalcified by precipitation were poorer. However, the Neolithic population left behind many burials in monumental mounds and megalithic chambers with dry and relatively good preservation conditions for bones and amber.

Unfortunately, most Neolithic amber found in graves comes from megalithic chambers, where the preservation of amber jewellery was rarely optimal and where human bones and burial equipment are so thoroughly mixed that it is impossible to link the jewellery found to specific individuals.

On the other hand, the Neolithic population deposited a number of amber hoards in inland wetlands, where peat exca-

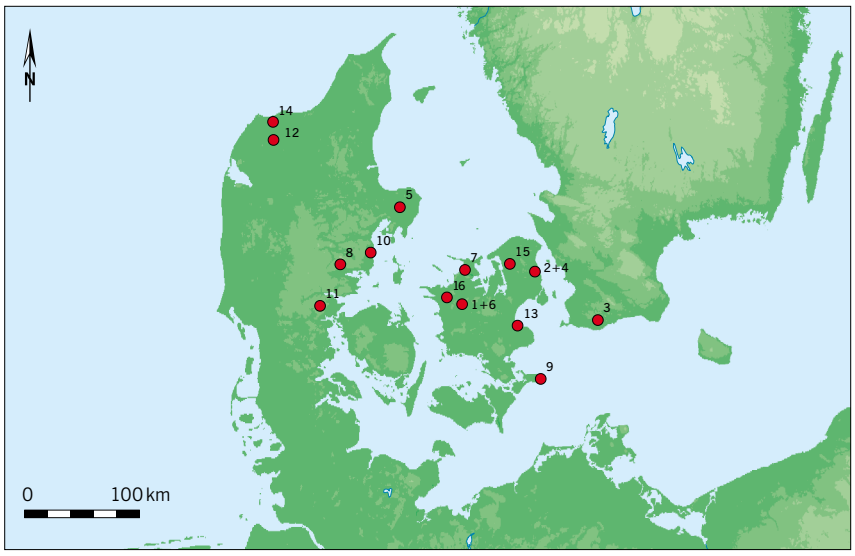

Fig. 2 Sites mentioned in the text: 1 Åmosen; 2 Vedbæk; Bøgebakken 8; 3 Skateholm; 4 Vedbæk Gøngehusvej 7; 5 Nederst; 6 Åmosen, Studedal; 7 Dragsholm 2; 8 Årupgård; 9 Timmesø Bjerg; 10 Rude; 11 Mejsling Mose; 12 Sejerslev Mose; 13 Avlebjerg, Strøby; 14 Abildgård; 15 Græse; 16 Låddenhøj.

Abb. 2 *Im Text erwähnte Fundstätten: 1 Åmosen; 2 Vedbæk; Bøgebakken 8; 3 Skateholm; 4 Vedbæk Gøngehusvej 7; 5 Nederst; 6 Åmosen, Studedal; 7 Dragsholm 2; 8 Årupgård; 9 Timmesø Bjerg; 10 Rude; 11 Mejsling Mose; 12 Sejerslev Mose; 13 Avlebjerg, Strøby; 14 Abildgård; 15 Græse; 16 Låddenhøj.*

Fig. 3a–b Two hoards – probably amulet belts – with pendants made of perforated teeth from aurochs, elk, red deer, badger, otter, wild cat and fox have been found in Åmosen on West Zealand. The presence of perforated canines from smaller carnivores indicates a date of both hoards to the Maglemose period (Sørensen 2017, 227). a Hoard of 98 tooth pendants from Øgårde, Åmosen (T. Mathiassen 1943, 91); b hoard of 21 tooth pendants from Mosegården, Åmosen (Sørensen 2017, 227). No scale.

Abb. 3a–b *In Åmosen auf Westseeland wurden zwei Horte – wahrscheinlich Amulettgürtel – mit Anhängern aus gelochten Zähnen von Auerochsen, Elch, Rothirsch, Dachs, Otter, Wildkatze und Fuchs, gefunden. Das Vorhandensein perforierter Eckzähne von kleineren Fleischfressern deutet auf eine Datierung beider Horte in die Maglemosezeit hin (Sørensen 2017, 227). a Hort von 98 Zahnanhängern aus Øgårde, Åmosen (T. Mathiassen 1943, 91); b Hort von 21 Zahnanhängern aus Mosegården, Åmosen (Sørensen 2017, 227). O. M.*

vation in historical times has brought about significant finds of excellently preserved amber jewellery (Ebbesen 1995).

Pendants of amber and animal teeth appear regularly in Danish Scandinavian Stone Age finds. Their traces of wear and the location of the ornaments in burials show that such pendants were part of people's personal dress gear.

Tooth pendants

We do not know the reasons why Stone Age people endowed tooth pendants with magical power. The shiny whiteness, hardness, and indestructibility of the tooth enamel were probably contributing factors. Also, the behaviour of animals showing their teeth to ward off threats could have been an inspiration.

Danish finds of tooth pendants (Fig. 2) show great differences in species composition throughout the Stone Age. Teeth of small predators, which are common in Maglemose (Fig. 3), are not used as pendants in Kongemose and Ertebølle times (Sørensen 2017, 227). Dog´s teeth, which are almost absent in the Mesolithic, tend to be dominant in the Neolithic. Red deer teeth are dominant throughout the late Mesolithic, and large pendants of pig incisors and bear canines are particularly common in graves with children.

As a member of B. Petersen's excavation team at Bøgebakken near Øresund, Sjælland Region, in 1975, the present author personally experienced the close relationship between tooth pendants, women and children (Petersen 2016). On this huge multiphase Mesolithic habitation site, a series of iconic burials were excavated, the most important being burial 8, which contained a very young woman, a newborn child, red ochre, animal tooth pendants and perforated river nerite snail shells by the hundreds (Fig. 4).

On the dorsal side of the woman's pelvis lay a line of perforated red deer teeth in small bundles, along with pierced snail shells in parallel rows (Fig. 5). This arrangement of tooth pendants is probably rightly interpreted as the remains of an amulet girdle or belt resembling the amulet belts of the Netsilik Inuits (Balikci 1989, 201–202)

Fig. 4 As a young student in 1975 the present author was entrusted with the excavation of the iconic Bøgebakken burial 8 (a young female and a new-born child [probably her son] placed on a swan's wing). This iconic find was the first Mesolithic burial in Scandinavia demonstrating the close relationship between tooth pendants, women and children.

Abb. 4 *Als junger Student wurde der heutige Autor 1975 mit der Ausgrabung des ikonischen Grabes Bøgebakken 8 (eine junge Frau und ein neugeborenes Kind [wahrscheinlich ihr Sohn] auf einem Schwanenflügel) betraut. Dieser ikonische Fund war die erste mesolithische Bestattung in Skandinavien, die die enge Verbindung zwischen Zahnanhängern, Frauen und Kindern zeigte.*

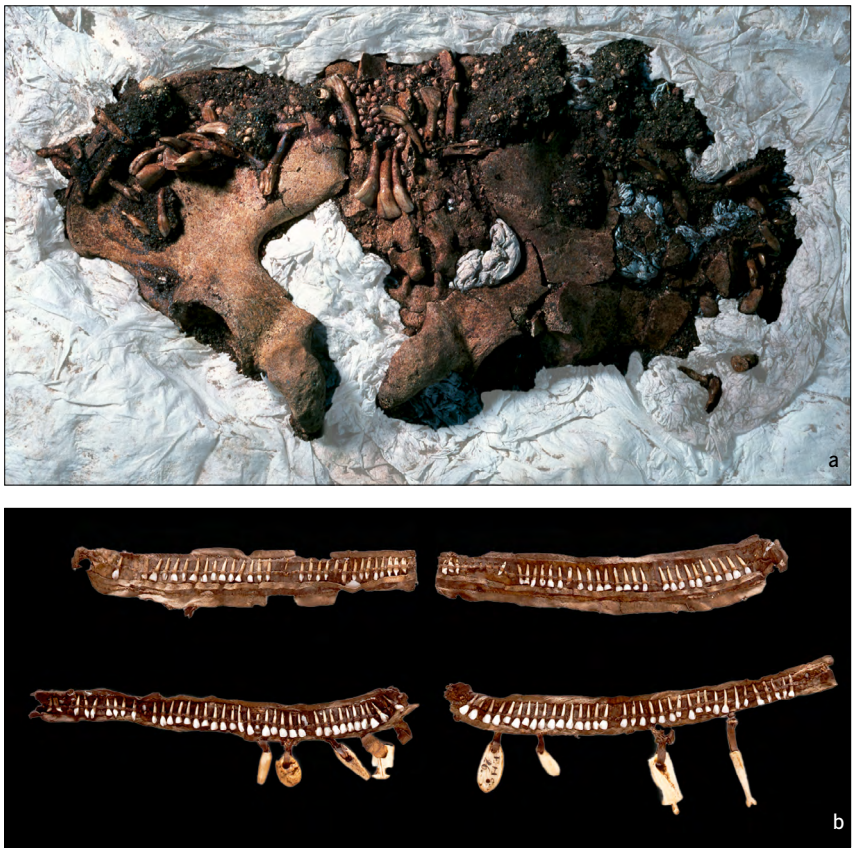

Fig. 5a–b a On the dorsal side of the pelvis of the woman in the Bøgebakken burial 8, a line of perforated red deer teeth in small bundles and pierced snail shells in parallel rows were found; b amulet belts from Western Greenland with 133 reindeer incisors. Brought to the King's collection (Kunstkammeret) in Copenhagen before 1690. No scale.

Abb. 5a–b *a Auf der Dorsalseite des Beckens der Frau in der Bestattung Bøgebakken 8 wurde eine Reihe von durchlöcherten Hirschzähnen in kleinen Bündeln und durchbohrten Schneckenhäusern in parallelen Reihen gefunden; b Amulettgürtel aus Westgrönland mit 133 Rentierschneidezähnen. Diese wurden vor 1690 in die Sammlung des Königs (Kunstkammeret) in Kopenhagen gebracht. O. M.*

and the Inuit amulet belts that entered the King's collection (Kunstkammeret) in Copenhagen in the 17th century (Fig. 5b; Petersen 2016, 113 Fig. 3). Similar waist belts with red deer teeth are found in women's graves at Dragsholm on Northwest Zealand and at Skateholm, in southern Scania, Sweden.

Next to the head of the Bøgebakken woman, there was a dense concentration of pendants with a similar combination of deer teeth and snail shells. But in this concentration, there were also larger pendants made from wild pig´s teeth (Fig. 6); such larger tooth pendants are not seen in the aforementioned amulet belts associated with young adult women but have instead been found repeatedly in burials with small children.

In most publications of the Bøgebakken finds (Albrethsen/Petersen 1977; Petersen 2015) this concentration of ornaments close to the head was interpreted as the belt decoration on one or several extra garments, placed as a pillow under the woman's head. Since then, this interpretation has been questioned (Petersen 2016). No pendants were found under the woman's head, and the concentration contains a higher number of teeth compared to any known amulet belts. To a greater extent, the concentration of pendants at the head of the woman in Bøgebakken burial 8

Fig. 6 Next to the head of the woman in Bøgebakken 8, there was a dense concentration of deer teeth pendants and perforated snail shells. The concentration also contained larger pendants made of wild boar incisors.

Abb. 6 *Neben dem Kopf der Frau in Bøgebakken 8 befand sich eine dichte Konzentration von Hirschzahnanhängern und durchlöcherten Schneckenhäusern. Die Konzentration enthielt auch größere Anhänger aus Wildschweinschneidezähnen.*

Fig. 7a–c Compared to the combination of different incisors attached to the girdle/belt of the Bøgebakken 8 woman (b), the concentration of pendants near the woman's head (a) consists to a greater extent of small lateral incisors compared to larger central incisors; c the perforated snail shells and animal incisors from Bøgebakken burial 8 probably served as protective amulets placed on the young woman's girdle belt and on a decomposed carrying bag (papoose) for her baby. No scale.

Abb. 7a–c *Vergleich der Kombination verschiedener Schneidezähne, die am Gürtel der Frau von Bøgebakken 8 befestigt waren (b). Die Konzentration von Anhängern in der Nähe des Kopfes der Frau (a) besteht zu einem größeren Teil aus kleinen lateralen Schneidezähnen, verglichen mit größeren zentralen Schneidezähnen; die durchlöcherten Schneckenhäuser und Tierschneidezähne aus der Bestattung Bøgebakken 8 dienten wahrscheinlich als Schutzamulette, die am Gürtel der jungen Frau und an einer zersetzten Tragetasche (Papoose) für ihr Neugeborenes angebracht waren (c). O. M.*

consists of smaller lateral incisors in comparison to larger central incisors (Fig. 7a). The snails are not mixed with the teeth but lie in a separate concentration.

Therefore, the present author has suggested that the pendants at the woman's head in Bøgebakken burial 8 constitute the decoration of a papoose (a carrying bag) for the baby (cf. Fig. 7c) – an extremely important form of dress equipment that we can only expect to encounter where women were buried with infants – as for example Bøgebakken 8 and the ›female shaman‹s' grave at Bad Dürrenberg, Saalekreis District, Germany (Petersen 2016, 122 Fig. 18). Another possible scenario is that dead infants occasionally might have been buried unaccompanied in the amulet-decorated papoose (i.e. a bag for child carrying ; cf. Friederich et al. in this volume) in which the living child was otherwise intended to be transported as for example the infant burials at Wilczyce, Lower Silesian Voivodeship, Poland (Irish et al. 2008), Arma Veirana (Hodgkins et al. 2022), and Vlasac H297, Danube Gorges, Serbia (Cristiani/Boric 2012).

Pendants and beads used as a protective decoration on papooses are known from cultures spread all over the globe, and the usefulness of a carrying bag in all kinds of climates makes it likely that we are dealing with women's oldest type of equipment. The use of the papoose probably goes back many hundred thousand years in human history.

At Skateholm in Scania, a burial was found where a 30-year-old female was placed in a seated position with a newborn child in her arms. The baby is covered with approx. 30 large pendants of wild pig's teeth – perhaps attached to a papoose (Petersen 2016, 120 Fig. 14)?

A grave at Gøngehusvej 7 in Vedbæk, Northeast Zealand, contained an approx. 3-year-old child and an adult, a approx. 40-year-old woman. A few dental pendants were found at the woman's head and chest. The child had a larger collection lying in a lump on his chest – mainly pig incisors, but also a perforated stone. Toe bones from a roe deer lying on the woman's chest have inspired B. Petersen to suggest that the woman was wrapped in a roe deer skin. Another possibility is that the deer skin formed a sling that the woman had used to carry the child and to which the amulet pendants were attached (Petersen 2016, 120)

Mesolithic burials of unaccompanied children are few in Denmark. In the burial of a 5-year-old child from the Ertebølle site of Nederst, Northeast Jutland, a 17 cm long knife blade indicates the child's male gender. On the child's chest were placed a cluster of six perforated wild pig's incisors as well as a single aurochs' tooth. Between the legs, a cluster of red deer incisors was found (Fig. 8).

Amber ornaments

Most Mesolithic amber ornaments are finds without context. However, there are a handful of settlement-dated pieces that permit a chronological division of the material, placing the ornamented pieces as generally older than the unornamented ones, and where figurative pieces of animal shape seem to belong exclusively to the Late Palaeolithic (Petersen 2021).

Amber jewellery appears rarely in Mesolithic graves. An exception is grave 41 at Skateholm, which contained the remains of a 60-year-old man and a 4-year-old child. On the child's chest lay a cluster of amulets: two perforated bear teeth and four undecorated amber pendants (Larsson 1988; Petersen 2016, 121 Fig. 15).

Mesolithic amber pendants often bear signs of long-term use. Traces of wear and broken suspension holes are

Fig. 8 This ochre grave with a child (probably a boy), c. 5 years old, was found at Nederst in Djursland, eastern Jutland. He had been given a magnificent 17 cm-long flint knife and several tooth beads from red deer, boar and aurochs. On the child's chest was a cluster of six perforated pig's teeth and one aurochs tooth. Between the legs was a cluster of red deer teeth.

Abb. 8 *Dieses ockergefärbte Grab mit einem Kind (wahrscheinlich ein Junge), ca. 5 Jahre alt, wurde bei Nederst in Djursland, Ostjütland, gefunden. Man hatte ihm ein prächtiges, 17 cm langes Feuersteinmesser und mehrere Zahnperlen von Rothirsch, Wildschwein und Auerochse mitgegeben. Auf der Brust des Kindes befand sich ein Bündel von sechs durchbohrten Schweinezähnen und ein Auerochsenzahn. Zwischen den Beinen befand sich eine Ansammlung von Rothirschzähnen.*

not removed. On the contrary – signs of advanced age seem to strengthen the amuletic value of the pieces (Fig. 9).

With the advent of the Funnel Beaker Culture, a profound shift takes place in the use of tooth and amber, the most important amulet materials. Unfortunately, only a very few Neolithic burials in Denmark have good conditions for amber and skeletal remains, and therefore only a little is known with respect to the placement of the amber ornaments.

One of the most interesting finds was made in 1973 when Brinch Petersen was excavating at Dragsholm. Earlier the same year a Mesolithic grave had been found containing two women – according to aDNA, mother and daughter (Allentoft et al. 2024, 331) – sprinkled with red ochre and provided with rows of red deer tooth pendants, suspended in lines – probably originally belonging to amulet belts worn around the hips (Price et al. 2007, 194).

In order to find additional Mesolithic ochre graves, trenches were dug over the adjacent area. No more ochre graves were found, but instead, a small oval depression (burial 2) was discovered, containing the skeleton of a young Neolithic warrior (Fig. 10; Price et al. 2007, 194). This man's grave from Dragsholm is dated to the early Funnel Beaker Culture (cf. Fig. 1) and, as such, is one of the earliest Neolithic burials found in southern Scandinavia. In the grave, elongated ellipsoid pendants were placed on the man's chest and upper arms. Smaller cylindrical beads for serial stringing on a cord were not seen.

Copper ornaments

Animal tooth pendants are absent in the Funnel Beaker Culture. Instead, amber ornaments appear in many different shapes, some of which clearly mimic continental copper jewellery types like boss- ornamented discs and spiral cylinders. The hoard find from Årupgård in East Jutland contained a Neolithic lugged vase stuffed with amber as well as copper ornaments (Sylvest/Sylvest 1960). The hoard clearly demonstrates how copper-wire spirals were imitated in amber as long tubular beads (Fig. 11).

A characteristic Early Neolithic copper ornament type is the perforated and boss-decorated disk made of copper

Fig. 9 Mesolithic amber pendants like this piece from Studedal in Åmosen, West Zealand, often bear signs of long-term use. Signs of advanced age apparently strengthened the amuletic value.

Abb. 9 *Mesolithische Bernsteinanhänger wie dieses Stück aus Studedal in Åmosen, Westseeland, tragen oft Spuren eines langjährigen Gebrauchs. Anzeichen von höherem Alter verstärkten offenbar den Stellenwert des Amuletts.*

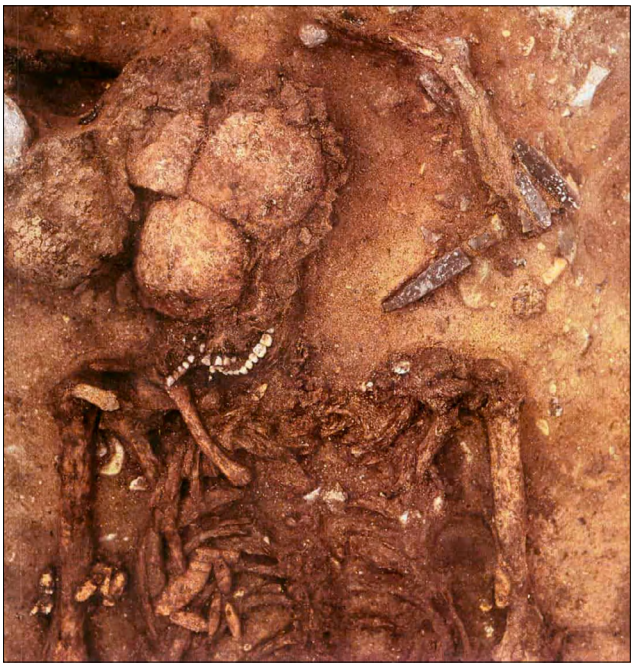

Fig. 10 In the Early Neolithic Dragsholm II grave, elongated ellipsoid pendants were placed on the man's chest and upper arms.

Abb. 10 *Im frühneolithischen Grab Dragsholm II wurden längliche ellipsenförmige Anhänger auf der Brust und den Oberarmen des Mannes angebracht.*

plate (Fig. 12a–b). This type of copper ornament has been found in a few Early Neolithic burials in Denmark. Such copper ornaments were also imitated in amber as so-called ›*ravsole*‹ (amber suns; cf. Fig. 12c; Glob 1952, 23; 88 No. 125; Ebbesen 1995, Type K,34). The two central perforations of the circular copper plates and amber disks correspond to the double perforations seen on several early Neolithic bone wrist guards (cf. Fig. 12d; Becker 1960). The discovery of a skeleton in a long-barrow burial at Rude south of Århus in East Jutland, which had a copper disk tied to the left forearm with copper wire (Madsen 1979, 80), suggests that such copper disks, and also their imitations in amber, probably functioned as wrist guards; which were worn as a status-marking accessory by bowmen throughout the Neolithic.

In the Late Neolithic Bell Beaker Culture, wrist guards were normally made of slate, but in earlier parts of the Danish Neolithic the wrist guards were apparently made from various kinds of valuable, magical material, such as bone/antler, copper and amber.

Revival of tooth pendants

After several hundred years of absence, tooth pendants reappear in the middle part of the Funnel Beaker period. Now, neither red deer nor other wild species provide teeth for the Neolithic pendants, but domesticated dogs and pigs instead. A selection of dog teeth pendants and amber beads (Fig. 13) comes from a hoard in a peat bog at Sejerslev, Northwest Jutland (Ebbesen 1995, 67).

Fig. 11 This Early Neolithic hoard of amber and copper ornaments stored in a lugged vase was found at Årupgård, Central Denmark Region. The long tubular amber beads probably mimic spiral cylinders of copper like the ones which are also present in the hoard (below).

Abb. 11 *Dieser frühneolithische Depotfund aus Bernstein- und Kupferschmuck wurde in einem Ösengefäß verwahrt in Årupgård, Region Midtjylland, Dänemark, gefunden. Die langen röhrenförmigen Bernsteinperlen ahmen wahrscheinlich spiralförmige Kupferzylinder nach, wie sie auch im Hort (unten) zu finden sind.*

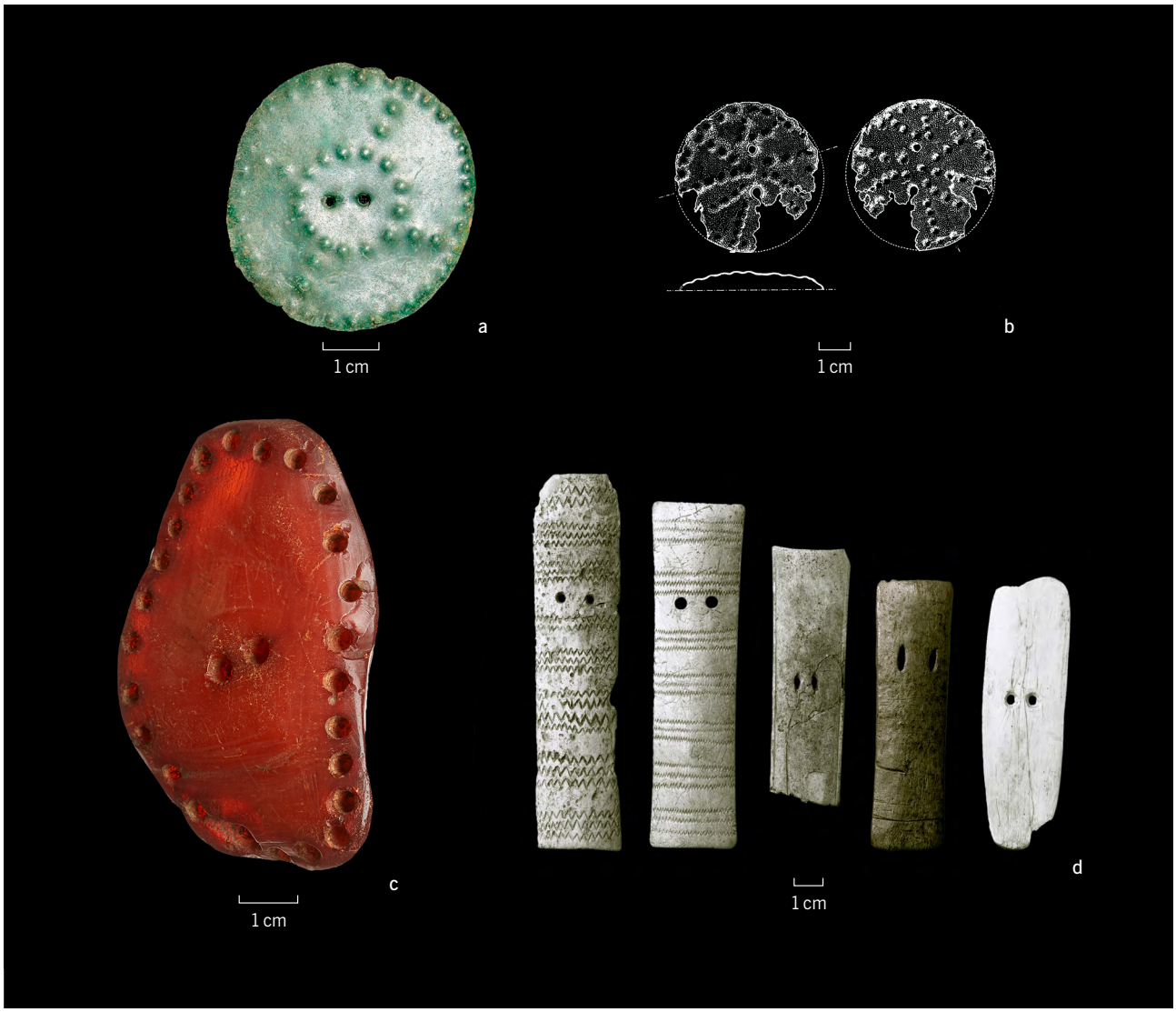

Fig. 12a–d a Double perforated, boss-decorated disc of copper from Timmesø Bjerg on Møn, Zealand; b double perforated, boss-decorated disc of copper from Rude, East Jutland; c double perforated, drill-hole-decorated plate of amber (a wristguard?) from Mejsling Mose, East Jutland; d double perforated, Early Neolithic wrist guards of bone from different locations in Southeast Jutland and Western Zealand.

Abb. 12a–d *a Doppelt gelochte, buckelverzierte Kupferscheibe aus Timmesø Bjerg auf Møn, Seeland; b doppelt gelochte, buckelverzierte Kupferscheibe aus Rude, Ostjütland; c doppelt gelochte, mit Bohrlöchern verzierte Platte aus Bernstein (ein Armschutz?) aus Mejsling Mose, Ostjütland; d doppelt gelochte, frühneolithische Handgelenkschützer aus Knochen von verschiedenen Fundorten in Südostjütland und Westseeland.*

In the Middle Neolithic, amber beads are often found as grave goods, but the state of preservation in the megalithic tombs is usually rather poor (Ebbesen 1995, 35). Due to disturbances from later burials, it is unclear how the age and gender of the deceased affected the distribution of different amulet types.

Unlike Mesolithic amber jewellery, which often acquired additional protective power through incised ornamentation (Petersen 2021), Neolithic amber jewellery is unornamented. On the other hand, the pieces are often carefully shaped as symbolic weapons. Double-edged stone axes and flat axe blades of copper seem to have inspired such amber copies (Fig. 14).

The spread of later-immigrating Neolithic groups, such as the coastal Pitted Ware Culture around the Kattegat/Limfjord area and the pastoral Corded Ware/Single Grave Culture in Jutland, influenced the development of a local East Danish Corded Ware Culture (Danish: Enkeltgravs-kultur; German: Einzelgrabkultur); within this group and in the succeeding Late Neolithic Dolktid (›dagger‹) period, jewellery made of animal teeth and bird bones reappears in the burials (Becker 1950).

An example of the Middle Neolithic renaissance of ›Mesolithic‹ pendants is a burial found in a small cemetery containing stone-packed graves at Avlebjerg on Stevns, East Zealand (Fig. 15a; Becker 1950, 203–207). One of the graves contained two children (cf. Fig. 15b), one of whom was richly adorned on the chest and pelvis with tubular bird-bone beads and pendants of pig's incisors (cf. Fig. 15c). At the child's chest, a pair of small amber beads and three lunular pieces of split pig´s tusks with perforations for suspension were found (Fig. 15d). Other lunular-shaped tusk ornaments are known from the Neolithic in Denmark. Mesolithic parallels to the tusk ornaments from Bad Dürren-

Fig. 13 Middle Neolithic hoard of perforated dog canines and amber beads from Sejerslev Mose in North Jutland. No scale.

Abb. 13 *Mittelneolithischer Depotfund von durchbohrten Hundezähnen und Bernsteinperlen aus Sejerslev Mose in Nordjütland. O. M.*

Fig. 14 Amber ornaments from the Låddenhøj passage grave in Western Zealand. Neolithic amber jewellery is rarely ornamented. Several types are shaped like symbolic weapons. Such amber copies seem to have been inspired by double-edged battle axes of stone and flat axe blades of copper. No scale.

Abb. 14 *Bernsteinschmuck aus dem Ganggrab von Låddenhøj in Westseeland. Neolithischer Bernsteinschmuck ist selten verziert. Mehrere Arten sind wie symbolische Waffen geformt. Solche Bernsteinexemplare scheinen von zweischneidigen Streitäxten aus Stein und flachen Axtklingen aus Kupfer inspiriert worden zu sein. O. M.*

berg (Orschiedt et al. 2023; Petersen 2016, 122 Fig. 18) have not been found in Denmark.

The child from Avlebjerg has been ^{14}C-dated to the early part of the Middle Neolithic. Its DNA was analysed within a large aDNA project carried out recently on Swedish and Danish Stone Age skeletons (Allentoft et al 2024). The analysis shows that the child from Avlebjerg had suffered from the plague (Seersholm et al. 2024, 2). Could the child's suffering from this deadly disease be the reason for the unusually rich assemblage of tooth and amber pendants?

Another remarkable example of a presumed Neolithic child's burial is a small stone cist (approx. 1,4 m long and 1,25 m wide) found in 2013 at Abildgård in Thy, Northwest Jutland (Fig. 16a–b; Bech 2014). The grave has an unusually high quantity of amber jewellery: eleven intermediary pieces, type h2 (after Ebbesen 1995, 34), approx. 40 smaller disk-shaped beads, and two tubular beads. Unfortunately, all traces of bones or teeth of the buried person were dissolved in the acidic soil. The many intermediary pieces of amber suggest an originally complicated jewellery composition with parallel chains of perishable beads such as animal teeth, bird bones, snail shells or seashells.

The distribution of intermediary pieces in the grave could indeed reflect the existence of a papoose (see also Friederich et al. in this publication), but in general, we have no concrete evidence for such baby-carrying equipment in the Danish Neolithic.

In the Late Neolithic Dagger period, rich assemblages of beads made from bird bone tubes, shell discs and perforated dog teeth are seen in some female burials (Fig. 17a–d; Kjær 1910; Ebbesen 2007, 37).

The use of amber continues unabated throughout the rest of Danish prehistory. Tooth pendants, on the other hand, seem to disappear in the late Bronze Age. The youngest Danish finds are pendants made of teeth from dog and domestic cow, which lay together with the cremated bones of a child in a face urn from the Late Bronze Age in Thy, Northwest Jutland (Mikkelsen 2000).

Conclusion

A review of Mesolithic and Neolithic tooth beads and amber jewellery from the South Scandinavian Stone Age

Fig. 15a–d Two stone coffins with well-preserved skeletons of children were found in 1937–1939 at Avlebjerg, near Strøby on Stevns, Eastern Zealand. One coffin contained a child with no ornaments (a). The second coffin or cist contained the remains of two children (b), one of whom was richly adorned with tubular bird-bone beads and pendants of pig's incisors (c). A pair of small amber beads was also found, along with three perforated lunular pieces of split pig´s tusks (d). This burial has been ^{14}C-dated to the Middle Neolithic: the aDNA analysis shows that this child suffered from the plague (Seersholm et al. 2024).

Abb. 15a–d *Zwei Steinsärge mit gut erhaltenen Kinderskeletten wurden 1937–1939 in Avlebjerg, in der Nähe von Strøby auf Stevns, Ostseeland, gefunden. Ein Sarg enthielt ein Kind ohne Schmuckbeigaben (a). Der zweite Sarg oder die Kiste enthielt die Überreste von zwei Kindern (b), von denen eines reich mit röhrenförmigen Perlen aus Vogelknochen und Anhängern aus Schweineschneidezähnen geschmückt war (c). Außerdem fand man ein Paar kleine Bernsteinperlen und drei durchlöcherte lunare Stücke aus gespaltenen Schweinsstoßzähnen (d). Diese Bestattung wurde mit ^{14}C auf das Mittelneolithikum datiert: Die aDNA-Analyse zeigt, dass dieses Kind an der Pest litt (Seersholm et al. 2024).*

shows considerable continuity in the use of animal teeth and Baltic amber throughout the entire period. Although tooth beads are used right up to the end of the Bronze Age, significant shifts in species composition are seen from the Mesolithic, when only teeth of wild species – especially red deer – are used, until the Neolithic, when mainly

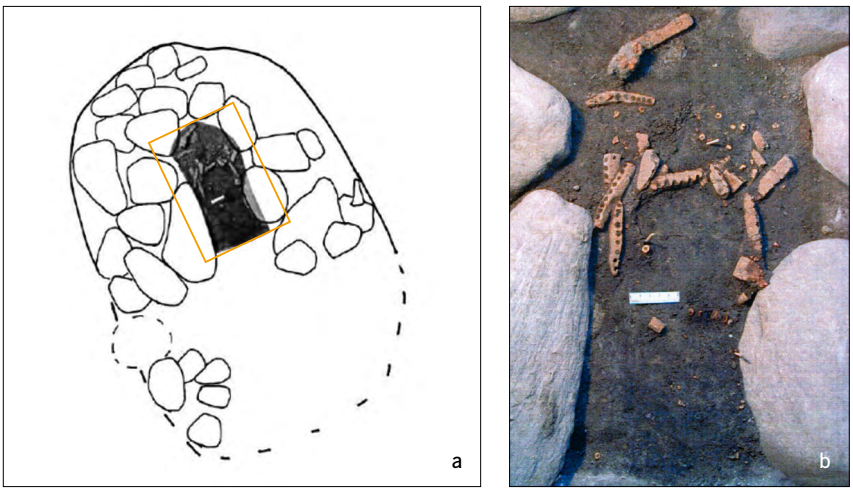

Fig. 16a–b a Presumed child burial from the Middle Neolithic period was found in a small stone coffin at Abildgård in Thy, North Jutland. b The grave has an unusually high quantity of amber jewellery: 11 intermediary pieces, approx. 40 smaller disk-shaped ornaments and two tubular beads.

Abb. 16a–b *a Eine mutmaßliche Kinderbestattung aus dem Mittelneolithikum wurde in einem kleinen Steinsarg in Abildgård in Thy, Nordjütland, gefunden. b Das Grab weist eine ungewöhnlich große Menge an Bernsteinschmuck auf: 11 Zwischenstücke, ca. 40 kleinere scheibenförmige Ornamente und zwei röhrenförmige Perlen.*

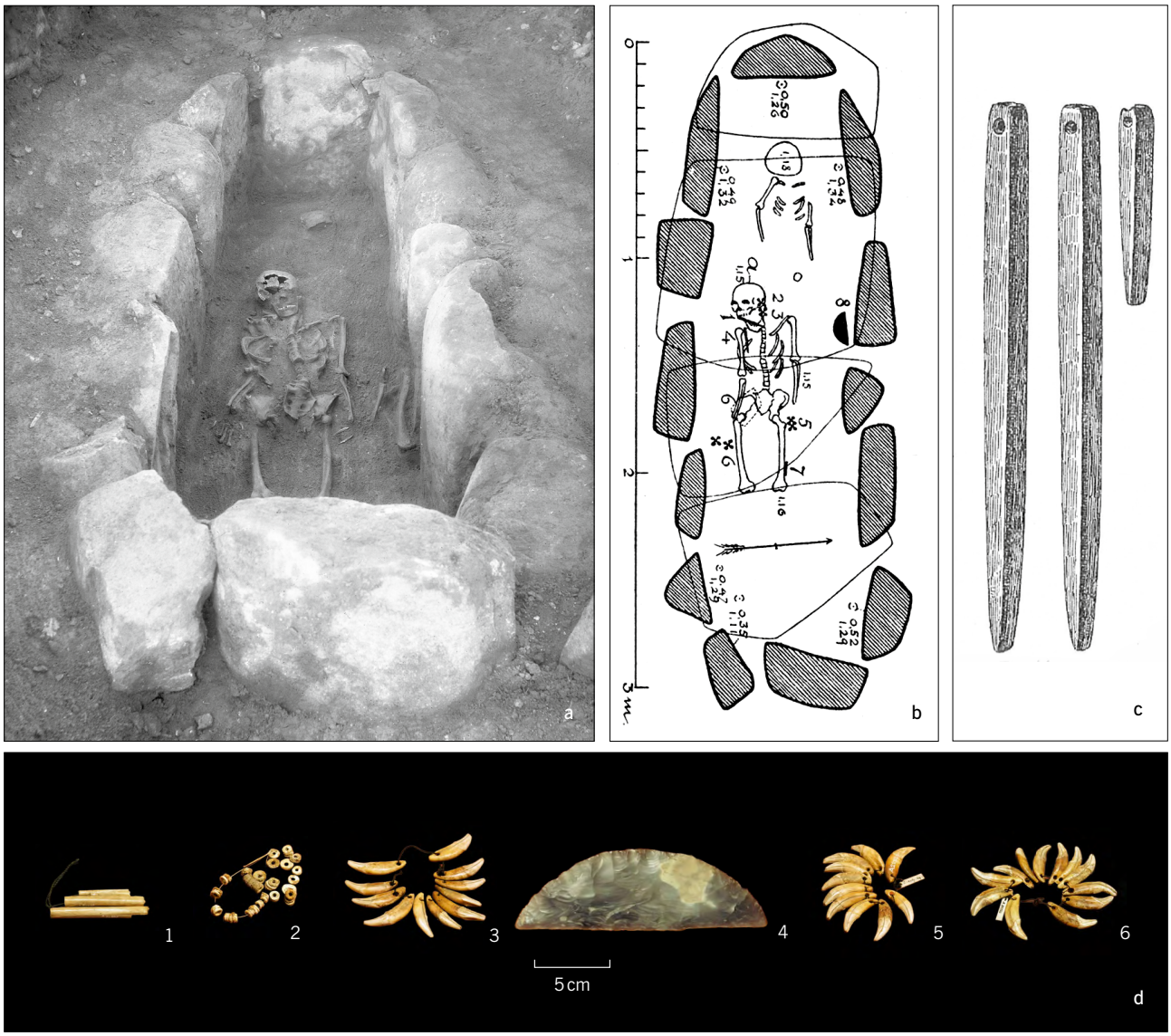

Fig. 17a–d The excavation of a Late Neolithic (Dagger period) stone cist at Græse in Northeastern Zealand revealed an undisturbed female skeleton situated on top of dispersed human bones from several earlier burials (a). The woman (b) was equipped with an unusual rich assemblage of ornaments: 3 slate pendants (c), 33 perforated dog canines (d3.5–6), 3 bird-bone tubes (d1) and numerous flat disc shaped beads made of shell from freshwater mussel (d2). A lunular, flat trimmed flint sickle (d4) found beside the skeleton might belong to an older burial.

Abb. 17a–d *Bei der Ausgrabung einer spätneolithischen (Dolchzeit) Steinkiste in Græse im Nordosten Seelands wurde ein intaktes weibliches Skelett gefunden, das auf verstreuten menschlichen Knochen aus mehreren früheren Bestattungen lag (a). Die Frau (b) war mit einer ungewöhnlich reichhaltigen Sammlung von Schmuckstücken ausgestattet: 3 Schieferanhänger (c), 33 durchbohrte Hundezähne (d3.5–6), 3 Röhren aus Vogelknochen (d1) und zahlreiche flache, scheibenförmige Perlen aus Süßwassermuschelschalen (d2). Eine neben dem Skelett gefundene lunulare, flach geschliffene Feuersteinsichel (d4) könnte zu einer älteren Bestattung gehören.*

dogs and domestic pigs supply teeth for jewellery. Amber appears in the Mesolithic mainly as larger pendants made of smoothly scraped lumps without much further shaping. Additional decoration with incised or drilled ornamentation particularly characterises the early Mesolithic phases, i.e. the Maglemose Culture and the Kongemose Culture. More intensively cut, flat, sack-shaped and undecorated pendants appear especially in the late Ertebølle Culture and in Neolithic times. Smaller amber beads for stringing in rows on cords seem to be a Neolithic phenomenon. In the early Neolithic Funnel Beaker Culture, amber copies of copper jewellery are also seen, such as spiral-wound tubular beads and boss-decorated plate discs with double perforations. The latter type is interpreted, based on a grave find from Rude, as part of an archer's wrist guard, in line with the bone wrist guards that appear in several Early Neolithic male graves.

Traces of wear and the location of amber and tooth pendants in burials show that such ornaments were often integrated into Stone Age clothing. The high number of pendants in graves with young women and small children speaks to their magical function as amulets to ward off evil. The ornaments were probably not intended to signal social status, and children with many pendants were not necessarily ›princes‹ but perhaps, rather, hopelessly ill kids. Significant shifts, undoubtedly reflecting changes within Stone Age cosmology, occur at the end of the Mesolithic Ertebølle Culture. In the Neolithic, the dominant material for pen-

dants and beads was amber, but tooth pendants reappeared in the middle and later parts of the period. At the end of the Bronze Age, tooth pendants completely disappear from the archaeological record. Throughout the Iron Age and medieval periods, amber continues to be a highly prized material, even though coloured glass is gradually taking over as the preferred bead material in Scandinavian Bronze and Iron Age societies.

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