

Beads and bead production in Scandinavia and the Baltic Region c. AD 600–1100: a general outline

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In Scandinavia glass beads were probably produced throughout the Final Iron Age corresponding to the Continental Early and High Medieval periods (c. AD 500–1050). This production saw considerable changes both in quality and quantity. Bead makers working for example at trading places and local political centers probably had various functions.

For an understanding of the development of political structures and exchange and trade in the Scandinavian Late Iron Age it is important to understand the role of specialized crafts¹ because many of the exchanged and traded goods were craft products. Traces of specialized craft production are well documented at trading places but also at other localities (see above). We do not know yet whether bead makers also produced other goods because the archaeological evidence is ambiguous. Production sites used for no more than a few weeks or months have been studied at Ribe in southwest Denmark (c. AD 700–750)² and in some cases bead production was the only activity. In most cases however debris of various crafts was mixed, a common feature at places so different as the highest level trading place Hedeby and the lower level trading site Åhus³. Similar observations have been made at important sites in Western Europe such as Hamwih and Dorestad⁴. The evidence suggests that bead production was not always an exclusive specialisation. It seems likely that at least some craftsmen executed several crafts and that they worked in close neighbourhood to others. So far no separate sectors exclusively devoted to a single craft have been observed at trading places.

There is little we know about the organisation of bead production up to c. AD 700. Beads were probably produced both at trading places and at some political centers. At present these places are little known and even less studied. From the products however we can be reasonably certain

that the production with regard to volume was not inconsiderable but technically rather simple and that the breadth of technical, formal and decorative variation was consequently small. A considerable part of the products is formed by barrel-shaped opaque reddish brown or orange beads⁵. So far only the products of the large island of Gotland in the Baltic show some signs of regional differentiation as early as in the mid-7th century⁶. Gotland will not be treated here in detail (see below).

¹ J. CALLMER, Hantverksproduktion, samhällsförändringar och bebyggelse. Iakttagelser från östra Sydskandinavien. In: G. Resi (ed.), *Produksjon og samfunn: om erverv, spesialisering og bosetning i Norden 1. årtusen e. Kr.* (Oslo 1995) 39 ff.

² U. NÄSMAN, Die Herstellung von Glasperlen. In: M. Benard, *Wikingerzeitliches Handwerk in Ribe*. Acta Arch. (København) 49, 1979, 124 ff.; L. FRANDSEN / S. JENSEN, Pre-Viking and Early Viking Age Ribe. Excavations at Nikolajgade 8, 1985–86. *Journal Danish Arch.* 6, 1987, 175 ff.

³ I. ULBRICHT, Die Geweihbearbeitung in Haithabu (Neumünster 1978); excavations by the author.

⁴ P.V. ADDYMAN / D.H. HILL, Saxon Southampton: a review of the evidence. *Proc. Hampshire Field Club* 26, 1969, 61 ff.; P. HOLDSWORTH, Excavations at Melbourne Street, Southampton, 1971–76 (London 1980); W. VAN ES, Dorestad centered. In: J. Besteman / J.M. Bos / H.A. Heidinga (eds), *Medieval archaeology in the Netherlands*. Studies presented to H.H. van Regteren Altena = Stud. in Prae- en Protohist. 4 (Assen 1990) 173 ff.

⁵ B. ARRHENIUS, En vendeltida smykkeuppsättning. *Fornvännen* 55, 1960, 73 ff.; M. ØRSNES, Form og stil i Sydskandinaviens yngre germanske jernalder (København 1966); B. PETRE, Arkeologiska undersökningar på Lovö IV (Stockholm 1984); K. HØILUND NIELSEN, Zur Chronologie der jüngeren Eisenzeit auf Bornholm. *Untersuchungen zu Schmuckgarnituren*. Acta Arch. (København) 57, 1987, 51 ff.

⁶ Cf. B. NERMAN, Gravfynden på Gotland under tiden 550–800 e. K. *Ant. Tidskr. Sverige* 22, Nr. 4, 1919.

Two sites in Southern Scandinavia have produced substantial quantities of early 8th-century production debris, Ribe and Åhus⁷ (*Pl. 15 A*). As the earlier 7th-century beads, these beads were produced in winding technique but unlike before blue and white were the main colours chosen for the body of the bead, red and white for – the mainly linear – decoration (*Pl. 15 B*). Lumps of blue glass and tesserae were imported as raw material. The decorative elements needed for the production of millefiori beads were probably also imported. Whether complete millefiori beads were imported from outside Scandinavia is difficult to say but if so they must have been very few.

Although the best finds and contexts are known from typical trading sites, there is now reason to believe that beads were also produced at some local political centers (in the last few years three sites have become known from Sweden)⁸. As these finds conform very closely to those from trading places, the argument for a mobility of the artisans is strengthened. In two of these cases there also is a very close link with bronze casting.

This Blue Period is typical of Scandinavia as a whole and probably also for Finland and Estonia⁹. Related finds reached at least one site in the Slavonic Southern Baltic¹⁰. A detailed analysis of this production reveals some differences between finds from Western, Eastern and Southern Scandinavia suggesting the existence of some closely related production groups. They were connected with Western Europe as far as certain techniques were concerned and the glass was imported from or via the West but the production must be understood as a largely independent phenomenon.

Some time after c. AD 750 the Blue Period came to a rapid end. However, a substantial Scandinavian production was continued. New colours were used, the range dominated by opaque green and light blue. The basic winding technique was the same but motifs mainly changed from linear to eye decoration. The increased import however rarely dominates in the various find contexts (*Pl. 16 A*). It is possible that some finds from Ribe and from the running excavation at Birka¹¹ can be connected with this continued production but from other places the evidence is meager (e.g. Kaupang, Åhus)¹². Production waste is difficult to find, possibly because of a change in manufacturing techniques and trade and exchange structures. Research on this phase therefore needs to concen-

trate on finished products. A formal analysis can give us direct information on the basic techniques employed and by analysing differences between finds from Scandinavia and the Baltic Region and from the neighbouring parts of Europe a number of Scandinavian bead groups can be defined¹³. As already mentioned, there is however no reason to doubt that Scandinavian bead production did continue. There was certainly a reorganization in bead production. It is of great interest to note that there was also a perceptible change in the production of bronze jewellery and decorated antler combs. Types were produced with less variation, series were produced for a longer period, and there was a marked standardisation¹⁴.

As has been pointed out, production waste is known from this as from later periods but consists of scattered finds of drops of glass, staves, chips, tesserae and a few end pieces showing traces of tools¹⁵. At 9th-century Hedeby there was a local production of wound and flattened

⁷ NÄSMAN (note 2); J. CALLMER, Platser med anknytning till handel och hantverk i yngre järnålder: exempel från Södra Sverige. In: P. Mortensen (ed.), *Fra stamme til stat II* (Aarhus 1991) 29 ff.; J. CALLMER / J. HENDERSON, Glassworking at Åhus, S. Sweden (eighth century A. D.). *Laborativ Ark.* 5, 1991, 143 ff.; cf. also A. LUNDSTRÖM, Bead making in Scandinavia in the Early Middle Ages. *Ant. Arkiv* 61 = *Early Medieval Stud.* 9 (Stockholm 1976).

⁸ L. LUNDQUIST / J. CALLMER / E. ROSENGREN, En fyndplats med guldgubbar vid Slöinge, Halland. *Fornvännen*, 88, 1993, 65 ff.; finds also from Gamla Uppsala and Valsta, both in the province of Uppland, Sweden.

⁹ Analysis of the collection of the National museum, Helsinki; cf. M. AUN, *Archeologičeskie pamjatniki vtoroj poloviny I. tysjačelija našej ery v Jugo-Vostočno (Estonii 1992)*.

¹⁰ F. WIETRZICHOWSKI, Untersuchungen zu den Anfängen des frühmittelalterlichen Seehandels im südlichen Ostseeraum unter besonderer Berücksichtigung der Grabungsergebnisse von Groß Strömkendorf. *Wismarer Stud. zur Arch. u. Gesch.* 3 (Wismar 1993).

¹¹ Analysis of the Posthus-excavation finds from Ribe and kind information from Mr. K. Svensson.

¹² E.-K. HOUGEN, *Glassmaterialet fra Kaupang*. *Viking* 33, 1969, 121 ff.; excavations by the author.

¹³ Cf. J. CALLMER, Trade beads and bead trade in Scandinavia ca. 800–1000 A. D. *Acta Arch. Lundensia* 4, II (Lund 1977).

¹⁴ For bronze work see J. CALLMER, Aspects on production and style: an essay with reference to Merovingian and Early Viking Period material of Scandinavia. In: *Festskrift til Thorleif Sjøvold på 70-årsdagen*. *Univ. Oldsaksamlings Skr. Ny Rekke* 5 (Oslo 1984) 57 ff.

¹⁵ For Hedeby see M. DEKÓWNA, *Szkoło w Europie wczesnośredniowiecznej* (Warszawa 1980) 172 ff.

blue beads but few have been found outside Hedeby¹⁶. There is also a 9th- or 10th-century so-called „glass furnace“ from Knorr's excavations¹⁷ but information on its construction and on the finds unfortunately is not available. Because of the lack of evidence we can only assume that bead production both at Hedeby and Birka (permanent or non-permanent) continued until these trading places were given up. From the Southern coast of the Baltic there is conclusive evidence for 10th-century bead production at Wolin¹⁸. Observations on a 9th-century production context at Szczecin have been discussed by Dekówna but the material is dated too early and the evidence not conclusive in respect to the activities carried out¹⁹.

We now return to our chronological exposé. In the first half of the 9th century Oriental beads heavily dominated (*Pl. 16 B*)²⁰, segmented beads was the most numerous type among them. Eighth and 9th-century Oriental import also included cut drawn beads, pierced beads and some Oriental millefiori beads. The earliest cornelian beads appeared already in the late 8th century. A few types of monochrome and polychrome beads however were doubtless produced in Scandinavia. The drop in Scandinavian and Baltic bead production in the late 8th and early 9th centuries is a very striking phenomenon especially in view of the continuing increase in the quantity and standardisation apparent in the production of bronze jewellery and decorated combs. The inflow of Oriental beads, which was a pan-European phenomenon, obviously made Scandinavian beads less attractive. Its gradual decrease is best explained as a result of competition.

From c. AD 820–30 onwards dominance changed from imported segmented beads to cut drawn beads and imports from the Orient (*Pl. 16 C*). By this time the cut in Scandinavian production had gone so far that perhaps no more decorated beads were made. In this phase artisans may have worked on bead production only part-time.

Some time in the mid-9th century or slightly later Scandinavian bead production saw a rapid and vital new development. The connection with the earlier Scandinavian production was not a close one. Decoration was now again mainly linear and the colours transparent light greenish, opaque brown and white. Blue and opaque green were rare. Decoration was applied mostly in white, reddish brown and yellow. Sizes and proportions were also much different.

The beads were bigger (diam. 1–2 cm) but also shorter in proportion (*Pl. 17 A*). This production must be understood as the work of a highly imaginative and innovative circle of artisans probably working mainly at large trading places. In this period Oriental import was almost or – less likely – completely interrupted. It is of great interest to note that the decrease in Oriental beads in Scandinavia went along with a rapid decrease of Arabic coins in Northern European money circulation²¹. A likely explanation lies in the destruction of the economical framework of the central part of the Caliphate in this period²². The Scandinavian output of trade and exchange goods was quickly adjusted to the new situation.

At the end of the 9th and the beginning of the 10th centuries Scandinavian bead production changed again. This time however it was a change that developed out of the tradition established in the preceding phase. Beads were produced in smaller sizes and shapes gradually changed to annular. There were also some changes in colour (*Pl. 17 B*). The corrosion of a certain type of glass indicates potash glass. The glass metal used both for the beads in this and the preceding phase was certainly imported from Western Europe. Additionally, Oriental imports became more frequent again. Some new types of Oriental beads echoed fundamental changes in Oriental bead production of the second half of the 9th century. The proportions between Scandinavian beads and Oriental imports vary in different contexts but there is no significant dominance observable of either group of beads.

¹⁶ Analysis of the Hedeby material and P. STEPPUHN, *Die Glasfunde von Haithabu* (Neumünster in press).

¹⁷ G. SCHWANTES, *Das wikingische Haithabu im Lichte alter und neuer Ausgrabungen*. *Zeitschr. Ethn.* 63, 1932, 243.

¹⁸ J. ÓLCZAK / E. JASIEWICZOWA, *Szklarstwo wczesnośredniowiecznego Wolina* (Szczecin 1963).

¹⁹ DEKÓWNA (note 15) 199 ff.

²⁰ R. ANDRAE, *Mosaikaugenperlen. Untersuchungen zur Verbreitung und Datierung karolingerzeitlicher Millefioriperlen in Europa*. *Acta Praehist. et Arch.* 4, 1975, 101 ff.; J. CALLMER, *The inundation of Oriental beads in Europe during the 8th century A.D.* In: U. Lund-Hansen (ed.), *Proceedings of the Nordic Glass bead seminar, Lejre 16th–18th October 1992* (København im Druck).

²¹ T. NÖÖNAN, *The first major silver crisis in Russia and the Baltic c. 875–c. 900*. *Hikuin* 11, 1985, 41 ff.

²² CALLMER (note 20).

Towards the middle of the 10th century an increased influx of Oriental beads led to an almost total dominance over Scandinavian products. As c. 150 years earlier, the Scandinavian production was much reduced and markedly changed. The majority of the characteristics of the earlier production of Scandinavian beads were lost and only very few decorated beads still produced. Almost all of them are annular beads with eye-decoration, often rayed. The majority of the Scandinavian beads was made of blue, white, yellow, and uncoloured glass (*Pl. 18 A*). About two decades after the middle of the 10th century the dominance of Oriental beads eroded again and annular beads of Scandinavian manufacture were more strongly represented. Blue beads were dominant (*Pl. 18 B*). This development went along with the decline of the trading system in Scandinavia and the collapse of Birka²³.

It is unlikely however that at this stage Scandinavian bead production was completely given up. It probably continued especially in Southern Scandinavia and in the Southern Baltic though with a reduced output. Decorated combs probably make a similar case.

At the very end of the 10th century or in about AD 1000 there was another part-change in South-Eastern import. Some objects were still imported, for example some types of segmented beads. There was however also a considerable number of barrel-shaped gold and silver foil beads presumably of Byzantine production. New types of Oriental millefiori beads were also imported. A number of types of Scandinavian annular beads was contemporary with this import. Almost all the decorated ones feature eye decoration (*Pl. 18 C*). In the second half of the 11th century the South-Eastern import became less numerous and mostly disappeared before the end of the century. The Scandinavian production of wound annular beads was continued to the end of the century. Some of these beads show special eye and line decoration. It is also likely that in Scandinavia millefiori beads were produced again. Although next to nothing is known about the places where these beads were produced it is most likely that the new urban centres in Southern Scandinavia as well as the important trading centers on the Southern coast of the Baltic were some of the places of production. In the 12th century the importance of beads as dress accessories declined rapidly and production was probably discontinued in the second half of the century or the beginning of the 13th.

The sequence described above is somewhat ambiguous. There are certain indications for a Scandinavian tradition of bead production. This production was firmly based on winding technique. From the second half of the 8th century onwards eye decoration was characteristic and for some phases also linear decoration. For the 8th and especially the 11th century special types of millefiori beads can also be listed.

We can also note a number of peaks in Scandinavian bead production in relation both to quantity and quality, a wide spectrum of shapes and motifs testifying to creativity and dynamism. The entire 8th century and again the second half of the 9th and the beginning of the 10th century are examples of this. Scandinavian beads of both periods produced only at certain trading places have been found together with Oriental and other imported beads. At times of increased import Scandinavian production was not only lowered in general but the production of decorated beads reduced in particular. The sensitivity of Scandinavian bead production is obvious and strongly indicates a small number of producers with close connections to trade. The evidence for competition at this relatively early date is of outmost general interest.

A few notes on Finland and the Baltic states as well as on the island of Gotland may be added. As I have already pointed out, a very distinct tradition of bead production was established on Gotland in the mid-7th century²⁴. A close connection to Continental bead production is likely. Often the core of a bead was covered with glass of a different colour. Later on simple millefiori elements were freely used for decoration. Gotlandic beads are only very seldom found outside Gotland and there seems to have been next to no import of beads to the island before the end of the 9th century. This was due to the extremely rigid rules of Gotlandic dress in the Late Iron Age.

Finland probably had no production of its own. What is important and interesting about

²³ I. JANSSON, År 970/971 och vikingatidens kronologi. In: M. Iversen (ed.), *Mammen. Grav, kunst og samfund i vikingetid*. Jysk Ark. Selskabs Skr. 28 (Århus 1991) 267 ff.

²⁴ NERMAN (note 6) and analysis of the collections in Stockholm and Visby.

Finland is that only certain Scandinavian bead types reached this territory²⁵. This suggests a specific organization of trade with Finland. Only in the 11th century there was a wider spectrum.

In the Eastern Baltic glass beads and beads made of semi-precious stones occurred very seldom before the 10th century. The very few finds of beads suggest that the range of types was the

same as in Scandinavia²⁶. In the later part of the 10th century beads became increasingly common and occurred in the same variations as in Scandinavia. In the Baltic and in Finland beads were widely used up to the 12th century. Some types were produced in Old Russia and some Latvian beads may be local products perhaps from trading places on the lower Dūna river.

²⁵ E. KIVIKOSKI, *Die Eisenzeit Finnlands* (Helsinki 1973); P.-L. LEHTOSALO-HILANDER, *Luistari II* (Helsinki 1982).

²⁶ E. MUGUREVIČ, *Vostočnaja Latvija i sosednie zemli v X-XIII vv.* (Riga 1965); A. TAUTAVIČIUS, *Prekybiniai-*

kultūriniai ryšiai V-VIII amžiais. In: M. Michelbertas (ed.), *Lietuvos gyventojų prekybiniai ryšiai I-XIII a.* (Vilnius 1972) 140 ff.; O. KUNCIENE, *Prekybiniai ryšiai IX-XIII amžiais.* In: *Ebd.* 180 ff.

Zusammenfassung
Perlen und Perlenproduktion in Skandinavien und im Ostseeraum
ca. 600–1100 n. Chr.: Ein allgemeiner Überblick

In Skandinavien sind Werkstätten für Glasperlen nur im 8. Jahrhundert n. Chr. eindeutig belegt (*Taf. 15 A*). Für alle anderen Perioden stehen hauptsächlich Grab- und Siedlungsfunde zur Verfügung. Die Formenanalyse (nach Größen, Farben, Herstellungstechniken) ergab eine Reihe eigenständiger skandinavischer Typen.

Untersuchungen über die Perlenproduktion der Zeit ab ca. 750 n. Chr. wurden zudem erst möglich, nachdem das Perlenmaterial des 8.–11. Jahrhunderts chronologisch gegliedert war (*Taf. 15 B–18*). Eine gewisse Kontinuität bei der Perlenproduktion ist für diesen Zeitraum sehr wahrscheinlich. Dabei treten jedoch große Schwankungen in Qualität und Quantität auf. Die wichtigste Periode der skandinavischen Perlenherstellung endete um 800 n. Chr., und eine weitere erstreckte sich über die zweite Hälfte des 9. und den Beginn des 10. Jahrhunderts. Bei ihnen handelte es sich um Phasen phantasievoller und kreativer Entwicklung. In beiden Fällen führte der massive Import orientalischer Perlen (*Taf. 16 A–B*) zu einer Reduzierung der Produktion und zum Verschwinden vieler Perlentypen, im besonderen der verzierten.

Charakteristisch für skandinavische Perlenherstellung sind gewickelte Perlen und Linien-

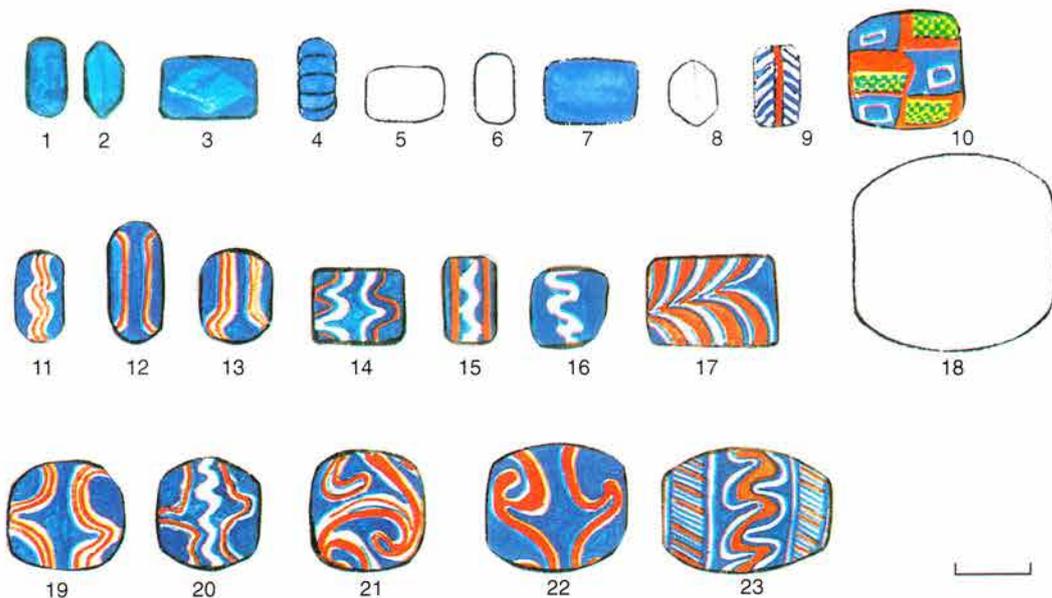
oder Kreisaugenverzierung, wie dies ebenso bei anderen nordwesteuropäischen Perlenspektren der Fall ist. Auf Gotland entwickelten sich bereits im 7. Jahrhundert eigenständige Traditionen bei der Anfertigung von Perlen, von denen nur wenige Typen außerhalb der Insel entdeckt wurden. Ein Kennzeichen für die gotländischen Perlen stellt das Umwickeln eines Grundkörpers mit andersfarbigem Glas dar. Lineare Verzierungen und einfache Millefiorielemente fanden auf den Perlen großzügige Verwendung. Diese eigenständige gotländische Produktion endete im 10. Jahrhundert.

Die Anfertigung von Perlen lag in Perioden großer Nachfrage wahrscheinlich in den Händen hochspezialisierter, zum Teil ortsgebundener Handwerker. Obwohl für die Zeit nach ca. 750 n. Chr. kaum archäologische Nachweise dafür vorhanden sind, ist zu vermuten, daß Perlen hauptsächlich in Handelsorten und einigen weiteren Zentren hergestellt wurden. Dagegen könnten in Zeiten geringerer Nachfrage die Perlenproduzenten zusätzlich andere handwerkliche Tätigkeiten ausgeübt haben und gleichzeitig mobiler gewesen sein.

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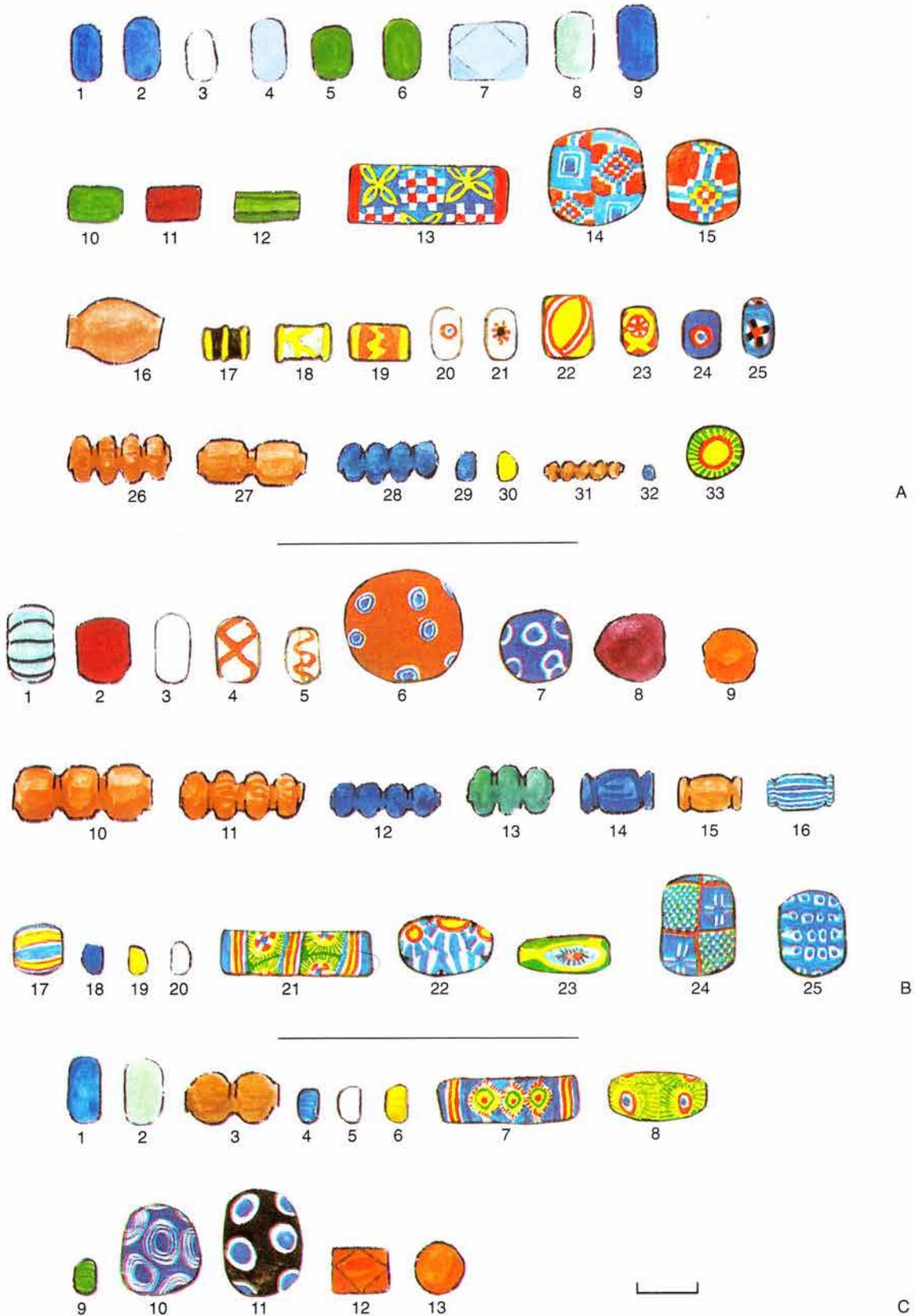
A



B

A) *Bead production waste from Åhus, Southern Sweden c. AD 710–750.* B) *Beads from Scandinavia and the Baltic Region c. AD 710–750. Wound: 1–9, 11–17, 19–23; millefiori 10; rock crystal: 18 (18 may be an import; the rest is Scandinavian).* B) *Scale 1.1.*

A) *Abfälle von der Perlenherstellung in Åhus, Südschweden ca. 710–750 n. Chr. – B) Perlen aus Skandinavien und dem Ostseeraum um 710–750 n. Chr.*



Beads from Scandinavia and the Baltic Region. A) Second half of the 8th century and c. AD 800. B) First quarter of the 9th century. C) Second quarter and middle of the 9th century. Wound undecorated: A1-12, B1-3, C1-2; wound decorated: A17-25, B4-7, C10-11; drawn segmented: A26-28.31, B10-17, C3; drawn cut: A29-30.32, B18-20, C4-6.9; blown: A16; pierced: B8; millefiori: A13-15.33, B21-25, C7-8; cornelian: B9, C12-13 (Scandinavian: A1-11.20-25, B1-5, C1-2; possibly Scandinavian: A13-15, B24-25; West European: A12.17-19; Oriental: A16.26-33; B6-23, C3-13). Scale 1:1.

Perlen aus Skandinavien und dem Ostseeraum. A) zweite Hälfte 8. Jh. und ca. 800. B) Erstes Viertel 9. Jh. C) Zweites Viertel und Mitte 9. Jh.



A

B

Beads from Scandinavia and the Baltic Region. A) Middle and second half of the 9th century. B) C. AD 900 and the first half of the 10th century. Wound: A1-27; B1-24, 26-36; drawn segmented: B40-42; drawn cut: B43-45; millefiori: B25; cornelian and rock crystal: B37-39 (Scandinavian: A1-27, B1-24, 26-35; possibly Scandinavian: B25; Oriental: B36-45). Scale 1:1.

Perlen aus Skandinavien und dem Ostseeraum. A) Mitte und zweite Hälfte 9. Jh.; B) um 900 n. Chr. und erste Hälfte 10. Jh.



Beads from Scandinavia and the Baltic Region. A) Middle of the 10th century. B) Last third of the 10th century. C) AD 1000 and the 11th century. Wound: A1-11.15, B1-16, C1-8.10-14; drawn segmented: A12-14.16-24, B17-20, C15-17; millefiori: C18; fayence: B21; cornelian: C9 (Scandinavian: A1-5,15, B1-11,15-16; C1-5; Oriental: A6-14.16-24, B12-14.17-21, C9.15-18; Byzantine: C6-8.10-14). Scale 1:1.

Perlen aus Skandinavien und dem Ostseeraum. A) Mitte 10. Jh. B) Letztes Drittel 10. Jh. C) Um 1000 und 11. Jh.