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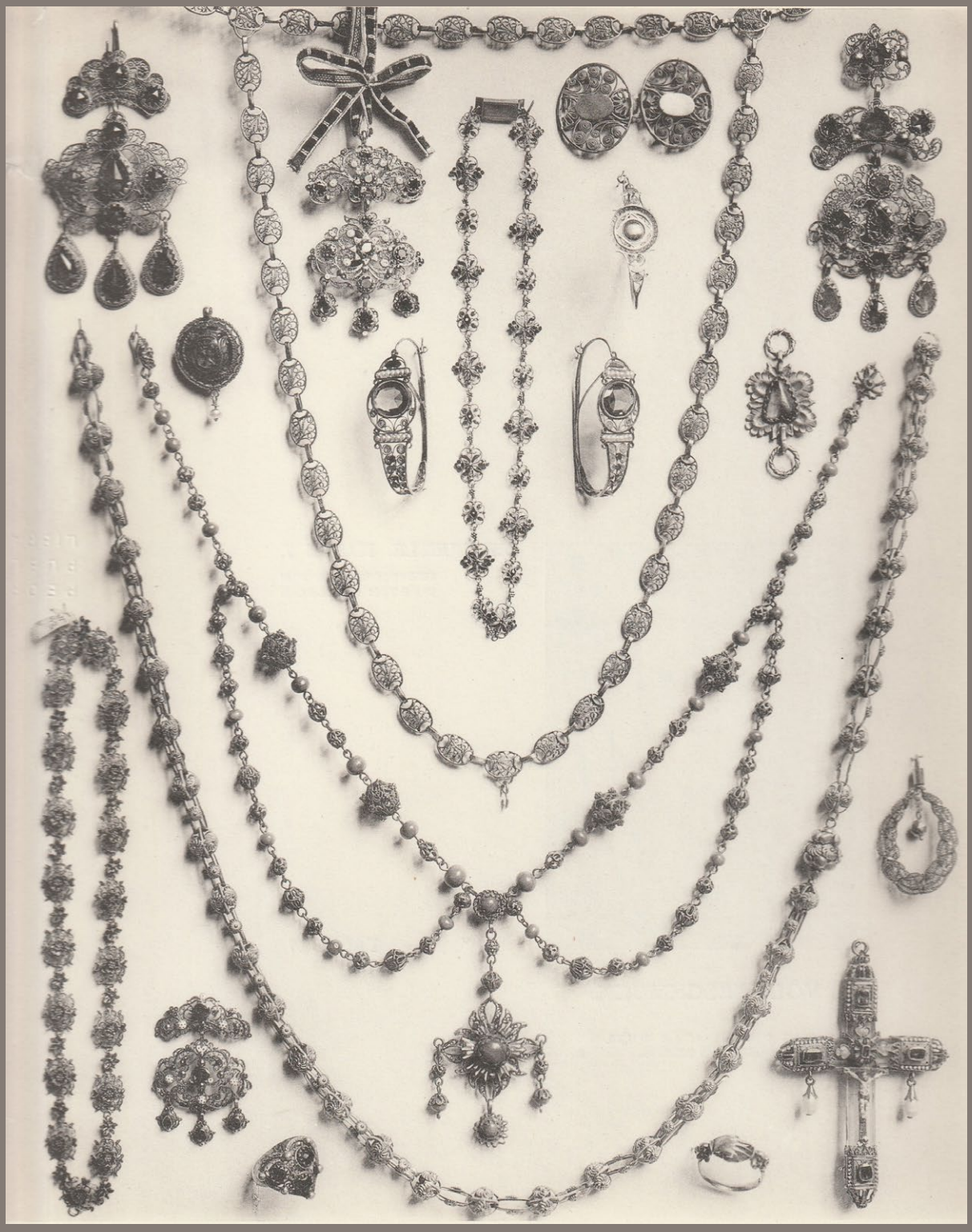

2024/1

JANE PERRY

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'A fairy dome of splendid architecture' A typology of the double-rosette construction in filigree beads

KEYWORDS:
filigree/ silver/ gold/ metalwork/ beads/ buttons/ motifs

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Front cover:

Swiss filigree in the Landesmuseum, Zurich.
Haberlandt, M., 1906, *Völkerschmuck: mit besonderer Berücksichtigung des metallischen Schmuckes*, Vienna and Leipzig: Verlag von Gerlach & Wiedling, plate 57.

'A fairy dome of splendid architecture'[1] *A typology of the double-rosette construction in filigree beads*

JANE PERRY

Beads and buttons were among the earliest articles made in the new type of filigree that appeared in Europe in the late Middle Ages. The characteristics of this filigree were peculiarly appropriate to the structure of beads, and the production of beads may, indeed, have influenced the development of filigree itself in that period. The most common design was, and continues to be, a double rosette.

Metal beads, least of all those made of filigree, have received little academic attention compared to that devoted to beads made of gem material and its natural derivative, glass. This article examines the widespread use of filigree in beads and buttons, and discusses how the designs and functions developed over time. Although filigree is made everywhere in much the same way, and with the most basic of tools, workers in different places and at different times have produced surprisingly different outcomes in terms of motif. The variations in these filigree motifs can help in identifying the origin of the objects which utilise them. The most common are described here in detail, and comparisons show the similarities and variations of motif in different times and places of production.

What is filigree?

In metal, the term 'filigree' is used for a decorative technique which originally always involved wire but is sometimes extended to any kind of openwork arabesque design. The wire-work can be either open, or applied to a supportive backplate.

Although the decorative use of wire extends back millennia, the word itself (there are many variations of spelling) is much more recent. Despite its Latinate base (*filum* = wire, *granum* = grain), it does not occur in classical or medieval Latin texts, and the European form of the word, '*filigrana*' is Italianate. However, the earliest Italian examples of this term appear to date only from the seventeenth century; the goldsmith Benvenuto Cellini (1500–1571) consistently uses the word '*filo'* (= wire), invariably translated as filigree. The first examples of the use of the word appear to come from Iberian sources. There are five attestations in the *Corpus del Diccionario histórico de la lengua española*[2] dating from before 1500 and it occurs intermittently in Portuguese and Spanish citations throughout the sixteenth century, for example in 1522 in the dowry of Beatriz of Portugal, Duchess of Savoy (1504-1538).[3]

The word 'filigree' appears at about the same time as a new variety of open wire-work was being developed somewhere along the trade route between China and Portugal during the sixteenth

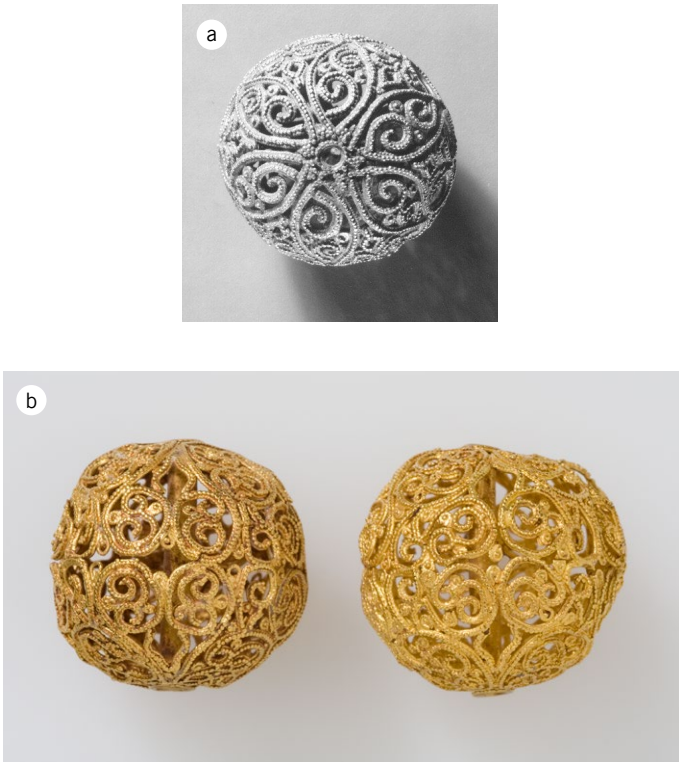

Fig. 1.
Fatimid gold beads using tie bar support. (a) 11th century, Egypt or Syria, d: 2.1 cm, The Metropolitan Museum of Art, New York, 1980.457 acc. no. 1980.457; (b) 11th century, Egypt or Syria, d: 2.63 cm (largest), (Spink and Ogden, fig. 68), acc. no. JLY 1017. The Nasser D. Khalili Collection of Islamic Art. © Khalili Family Trust

1 Title quotation taken from Henry Ward Beecher, 1855, *Star Papers: Or, Experiences of Art and Nature*, p.97, New York: J.C. Derby; Phillips, Sampson and Company.

2 Souza, p.445, Num.76. Dote da Duqueza Infante D. Brites. I am extremely grateful to Carlos Rocha for his help with Hispanic sources and linguistic explanations.

3 I am very grateful to Cláudia Pires for bringing this to my attention.

and seventeenth centuries.[4] The key difference between this type of filigree and earlier work is the use of flattened wire, mainly double-twisted but also plain ribbon wire, for the decorative curls, and its systematic employment, held in place by tension, within a frame. This strengthened the finished product and allowed the technique to be used across much larger open areas than previously, without the need of support, such as the tie bars found in Fatimid rope-and-grain filigree of the eleventh–twelfth centuries (fig. 1), or the spiral-filigree (fig. 2),

Fig. 2.
Spiral filigree. Appliqué, gold and garnet, Golden Horde, 3.1 x 2.5 cm, sold at Chiswick Auctions, 28 April 2023, lot 378, © Chiswick Auctions

Fig. 3.
Byzantine necklace with filigree terminals, AD 500–700, gold with amethysts, glass beads, and a pearl, The Metropolitan Museum of Art, New York, Gift of J. Pierpont Morgan, 1917, acc. no. 17.190.1663

visually similar to later filigree but without the consistent utilisation of tension and overlaid on a backplate, of Mongol origin, made for the Golden Horde in the thirteenth and fourteenth centuries.[5]

Another characteristic of this new work is that the majority was made in silver, rather than as previously in gold. By definition, wires used for filigree must be made from a ductile metal. The most common metals used for filigree beads are gold, silver, and silver- or gold-plated copper. The new technique also required less technical skill. Medieval goldsmiths only had bellows to control the heat of the fire needed for soldering, and thus could not focus on a specific area. The adoption of the blowpipe, developed from similar tools used in glass-blowing in the seventeenth century, allowed the heat to be concentrated and controlled more efficiently, reducing the complexity and risk of the operation (Carroll 1987:171; Ogden 2004:191; Wolters 1985, section V.D). As a result, filigree became affordable to a much wider clientele. By around 1660, open filigree was well established throughout Europe, and among European trading partners in Asia and Latin America.

Beads and buttons were some of the earliest products made from open filigree

The use of wire in the construction of bead necklaces dates back many millennia. It was the safest way to string together beads made from precious materials, and this purely functional use was extended in some late Roman and Byzantine necklaces to include flat filigree terminals (fig. 3). However, true filigree beads do not seem to occur before the late medieval period. Lightbown (1997) describes 'a set of paternosters [rosaries] of forty large pearls and eight marker beads of gold fashioned like "little cages"' owned by Marie de France, daughter of Charles V of France, who died in 1377 at the age of seven, as 'of filigree or openwork' (p.350); openwork seems more likely at this early period.

The earliest filigree beads were probably made for rosaries (the very word bead means 'prayer'), where variations in size, material or colour were necessary to distinguish the *aves* (Hail Marys) from the more prominent *paternoster* (Our Father) beads (Lightbown 1997:345). Wolters[6] dates the first appearance of silver filigree rosary beads to the late fifteenth century and it is possible that the way the infill wire was constrained by the lobed framework of a bead was a contributory factor in the development of filigree as we know it today. The use of wire as connecting links for the rosary beads of crystal and jet made in the town of Schwäbisch Gmünd in southern Germany may have been the origin of filigree production there (Scherer 1971:23; Gierl 1972), although this is disputed by Krause-Schmidt (1999:179-80). True filigree beads were not produced in Schwäbisch Gmünd until the

4 for a detailed consideration of the origins of filigree in the sixteenth and early seventeenth centuries see, for example, Crespo 2015; Veenendaal et al 2014:123–33.

5 Kramarovsky, 2000, pp.198–201, 2013, pp.404–12. For a description of the Fatimid filigree technique, see Rosen-Ayalon 1991, pp.9–19 or Ogden and Spink, 2013, pp.125–9.

6 Wolters1985 Section III.A.2, col. 1098.

late seventeenth century (Scherer 1971:98, plate VI caption). This was about the time when half rosettes of filigree replaced caps made of sheet metal on hardstone rosary beads, particularly on the large paternosters (ibid:96, fig. 9). After the Reformation in the sixteenth century, rosaries became exclusively associated with the Catholic faith, and filigree bead-making in Europe remained strongest in Catholic centres such as Porto in Portugal and Genoa in Italy. There is no tradition of filigree beads in major non-Catholic filigree centres such as Norway, or in Russia where spherical double-rosette filigree buttons are common.

Spherical beads, pomanders, and musk balls were intentionally made of pierced metal or other openwork, including filigree (fig. 4), to allow the scent of the enclosed material to circulate freely. The earliest mentions of pomanders in Europe go back to the thirteenth century and early surviving examples in collections date from the fifteenth century.[7] In Islamic regions, where the custom originated, their use is quoted in the Koran and Talmud.[8] In the early period, there is considerable overlap in function between these different objects where filigree is concerned. The Renaissance goldsmith Cellini states, in the context of how filigree was used, that 'divers manner of necklaces [...] are often worn with fillings of musk, as is also frequently the case with bracelets' (Ashbee 1967). Kontogiannis (2019:120) mentions that there were traces of cloth visible inside one of the filigree buttons in the Chalcis hoard (buried in Euboea, Greece before 1470) and the two mentions of filigree in the dowry of Beatrice of Portugal (see above) (Sousa 1742) are for rosary beads and a spherical container for musk.

During this early phase the construction of filigree beads and buttons was interchangeable; indeed, the word 'button' could be used for both buttons and beads in the Middle Ages (Lightbown 1997:351). Some of the buttons in the Chalcis hoard were clearly made initially as beads and converted to buttons by means of a central wire ending in a loop at one end forming a shank for attachment, and a pearl at the other forming the knop (fig. 5). The same applies to some of the buttons found in the wreck of the 'Nuestra Señora de la Concepción', a Manila Galleon which sank in 1638 off Saipan in the Northern Mariana Islands in the Philippines (fig. 6). This interchangeable use remained a feature of bead making in many important later filigree centres, including Schwäbisch Gmünd and Genoa.

Buttons came into general use in Europe following the introduction of fitted clothing in the early thirteenth century (Egan and Pritchard 2018; Dalton 1924). However, buttons made of precious metal, worn decoratively in large numbers, do not appear until the second half of the fourteenth century. The vast majority were initially round and formed like a bead, rather than flat as is more common today; the main western European names for button are derived from words meaning round or swollen.[9] Openwork metal spherical buttons from this period are rare in western Europe. Lightbown (1997:241), mentions gold buttons 'in the fashion of Genoa' in a French inventory of

Fig. 4.
17th-century pomanders. (a) silver-gilt, 1650–1700, d: 3 cm, Dutch wolf's head import mark, 1814–1853, French weevil import mark, 1835–1864, V&A 328&A-1864; (b) gold, 1600–1700, Europe, d: 2.9 cm, V&A 849-1892, both © Victoria and Albert Museum, London

Fig. 5.
Bead/button conversion. Silver-gilt and pearl, before 1470, Halkida, Greece, l: 2.2 cm, BM AF.2826.a, © The Trustees of the British Museum

Fig. 6.
Open-lobed button with appliqués, gold, before 1638, Philippines, d: 1.3 cm, (Chadour, 1990, cat. no.102, (BUTB)), © Beatriz Chadour. This button is of the same construction as bead no. 45 (BEAB), apart from the knop and shank.

7 For further references see Lightbown 1997: 351, 357; Chadour and Joppien 1985, no. 74.

8 Chadour and Joppien 1985, no. 74; Ogden and Spink 2013:133.

9 eg *knopf*, which is cognate with knop or knob, *bouton*, related to bud.

Fig. 7.
Buttons, silver, before 1470, Halkida, Greece, l: 1.8 cm, BM AF.2833.a, © The Trustees of the British Museum

Fig. 8.
Button fragments, silver, 13th to early 15th century, Belorechenskaya, Russia, d: 1.7 cm, © State Historical Museum, Moscow Оп.В 337/625

Fig. 9.
Buttons with applied filigree rings. (a) Silver-gilt, 16th–17th century, from Kopilovtsi Treasure, Bulgaria, (Sotirov, 1976, fig. 111), © ДИ „СЕПТЕМВРИ", СОФИЯ, 1984; (b) Silver, second half of 14th century, included in Nogales Treasure. D. 1.3–2.2 cm, Museo Arqueológico Provincial de Badajoz, inv. nos. 11927, 11933, 11928, (Labarta, fig. 9), photo © Ana Labarta; (c) Silver-gilt, 16th–17th century, Russia, d: 1.2 cm, acc. no. ОК 20352, © State Historical Museum, Moscow

1379–80, which he suggests may have meant filigree, although Genoa did not become known as a major filigree centre until the late eighteenth century. No medieval open filigree buttons have been recorded in the extensive records of the Portable Antiquities Scheme in England and Wales, or the Dutch PAN (Portable Antiquities of the Netherlands).

The earliest surviving European open filigree buttons come from eastern Europe; for example in the Chalcis hoard (fig. 7), or fragments from Belorechenskaya (fig. 8) in the Black Sea region of Russia. They are in a minority, as most of the double-rosette buttons from this period were not made of true filigree, but rather of wire rings applied to an underlying sheet metal base which could be pierced in the spaces between the decoration to give the appearance of filigree. Again, examples of these come mainly from eastern Europe, including the Chalcis hoard, Chiprovtsi in Bulgaria (fig. 9a), and Russia. Interestingly, three buttons of similar design were found in a group of fourteenth century jewellery from Nogales, Spain (fig. 9b). This particular design often resembles open filigree, and survived in Russia (fig. 9c) and the Nordic region until as late as the twentieth century.

In places where double-rosette filigree buttons are worn, the curved open filigree front element is often placed on a flat sheet metal back to create a cheaper domed button (fig. 10), or used on its own without any back to create a button with a curved front and open back. This type of open-backed filigree button is most common in Hungary.

Fig. 10. (Right)
South German domed (half sphere) button. Silver, before 1902, prob. Schwäbisch Gmünd, d; 2.2 cm, AV monogram with 'B' (Austrian import) mark, 1208091, © author

Typology of filigree motifs in double-lobed structures

Basic Structure

The double-rosette form is the most commonly found type of filigree bead, and is central to the discussion in this article.

In filigree, a rosette is a design that takes on the form of a stylised daisy with lobes formed either from separate lengths of wire, (fig. 11) or, more frequently, a single strip bent into the same design (fig. 12) (see also Behrmann 1985:22). Individual lobes are most common in Dutch filigree. An early predecessor of similar appearance but with lobes constructed from circular rings, dates from the Nineteenth Dynasty (1292–1189 BC) in Egypt (fig. 13). The two flat, lobed rosettes are then curved into hemispheres on a doming block, and soldered together at the circumference to form a sphere.[10] This basic form, as found in the Simferopol treasure of the fifteenth century (Malm 1987) (fig. 14), predates the introduction of decorative infill and continues to be used today. It is more common to add a filigree motif inside each lobe before the rosette is domed (fig. 15). Elaborations of the basic design include the introduction of a band at the circumference where the two rosettes join; caps or collars at each end; and various decorative appliqués (see below, 'Central Band' and 'Appliqués'). When the lobes are soldered to each other they usually touch at the extremities, which are sometimes flattened to facilitate the construction, but in some areas, notably the northern region of Italy, north Africa, and east and south-east Asia, the lobes are engaged with each other, creating a zigzag join (fig. 16) (Summerfield 1999). A rare variation on the standard petal-shaped lobe occurs in some beads from the wreck of the 'Nuestra Señora de la Concepción'[11] (fig. 17), which have a swirling lobe. These beads were made

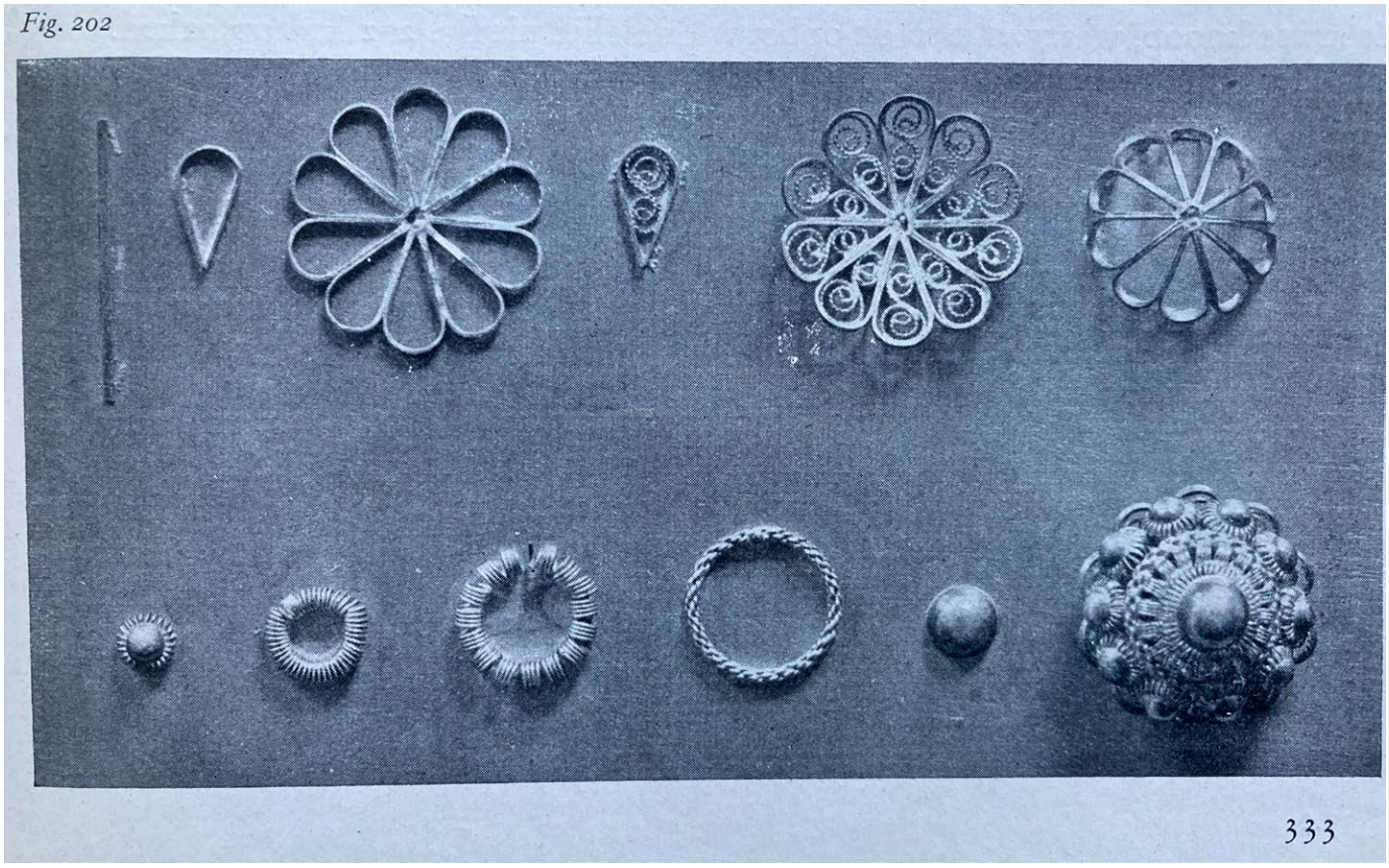

Fig. 11.
Construction of double-rosette button with separate lobes. The kite-shaped lobes are created separately, soldered together to form a rosette, filled with a filigree motif if required, and curved on a doming block. The two halves are then soldered together, and any appliques added. Dutch silver *braamknop*, (Hammes, 1942:333). For examples of buttons using this technique, see figs 20, 72, 104a below.

10 for examples, see any description of filigree making, eg, Untracht 1982:179; van der Stok 2022:4; Arnoldo 2019:38–53.

11 Chadour 1990, cat. no. 97 BUTA, 98 BTAA, and 99.

Fig. 12.
Construction of double-rosette button with continuous wire lobes.
The technique is the same as in fig. 12, but the rosette is formed from a single length of wire. Silver, 1880, Altes Land, Germany, V&A 160-1883, © Victoria and Albert Museum, London. Detail of back. For full button, see fig. 102a.

locally in the Philippines by Chinese craftsmen for the European trade, and this shape, possibly of Asian origin, survived in eastern Asia until recent times (fig. 18). Interlocking roundels, giving a similar appearance, are used in Fatimid work of the eleventh century (fig. 19). In a typical Dutch *braamknop* (button) (fig. 20) the rims of the two hemispheres do not touch; the lower slightly overlaps the upper with the lobes intersecting. This type of construction, which is otherwise unique to Dutch buttons, also occurs in some buttons which are most probably from south-east Asia and derived from Dutch buttons (see fig. 62 below)

In the nineteenth century, with increasing automation, the filigree lobes are sometimes replaced by stamped metal rosettes. For example, this can be observed on rosary beads from Spain (fig. 21) and Schwäbisch Gmünd (Krause-Schmidt 1999:149). This does not seem to occur outside Europe, where labour was cheaper and the use of dedicated machinery prohibitively expensive, until much later.

The double-rosette structure was popular due to its ease of construction, decorative appeal, and the strength conferred by the arched frame and infill characteristic of open filigree. These advantages were obvious from the earliest period (Chadour 1990:334), but there were many alternatives, such as trellis patterns, and unbroken navettes resembling the segments of an orange (see fig. 96, below). These alternative patterns continued in use in later periods, joined by beads made entirely of coiled wire, granules, or a mass of dense coil rings. Double-rosette spheres are used as beads, buttons, pendants, and, particularly in the nineteenth century, as elements of, or attachments to, objects such as hairpins and combs. The most elaborate hairpins come from northern Italy, where almost every possible variation of infill can be found in the spherical heads, including elements unknown in beads and buttons from the same region. The larger the sphere, the more elaborate the infill pattern can be.

The basic form of a double-lobed bead consists of plain open lobes without filigree infill. Beads of this type are widespread, and occur in the same places as beads with filigree infill when the bead is too small for the lobes to contain decorative motifs. Examples include rosary beads from southern Germany/Switzerland (fig. 22) (Scherer 1971, fig. IV, Köln, Diözesanmuseum, 1975, fig. 47), and attachments, such as the ends of cylinder beads in late medieval Spain (fig. 23a) and their successors in Morocco (fig. 23b), as well as earring elements in nineteenth century Spain (fig. 24). Villegas shows diagrams of bead forms of this design dating back to the fourteenth century in the Philippines (1983:121, tab.4). Larger beads of this type with open lobes are made in some contemporary centres in Africa (fig. 25) (Garrard 1990:25), and in Norwegian jewellery (fig. 26). Generally, open-lobed beads with a central band between the two halves, as with beads with filigree infill (see 'Central Band' below) come from eastern Europe, North Africa (fig. 27) or Asia. There are early examples in the Simferopol treasure (Malm 1987) (see fig. 14), and from Iran (fig. 28).

Open lobes are also common in buttons. There are examples of small buttons from the sixteenth–seventeenth centuries with plain open lobes from Chiprovtsi in Bulgaria (fig. 29), but the majority of buttons are larger and usually only have open lobes on the front. This mainly occurs when decorative infill is unnecessary due to numerous appliqués, often massed together, which make it almost impossible to see the underlying structure. The best-known examples are Dutch *braamknopen*, from the late seventeenth century to the present day, which have S-shaped infill on the visible back (see figs. 20 and 72 below) and an open lobed rosette on the front, entirely covered with coil rings (see fig. 11 above for their construction, and fig. 104a below). Other examples are found in the area around Hamburg in northern Germany; here the coil rings are smaller and arranged

in concentric circles interspersed with bands of elaborate double-twisted wire: see fig. 12 above for construction, and examples in figs. 101 and 108 below (Behrmann 1985:23). The lobes on the back of these German buttons are filled with stacked kidney shapes (see fig. 77a-b below). Along the Adriatic coast of the former Yugoslavia, most buttons have a loop (see fig. 47a below) or volute under the appliqués on the front, but some have open lobes (see fig. 47b below).

Fig. 13.
Precursor of double-rosette construction using rings instead of double rosettes. Necklace, gold, *c.* 1200–1186 BC, Egypt, d: 0.6–0.8 cm (beads), The Metropolitan Museum of Art, New York, Theodore M. Davis Collection, Bequest of Theodore M. Davis, 1915, Purchase, Edward S. Harkness Gift, 1926 (26.7.1346, .1348), acc. no. 30.8.66; (a) detail

Fig. 14.
Bead with plain double rosette. Gold, 14th to first half 15th century, Simferopol, d: 1.1 cm, acc. no. Оп.В 2013/81, © State Historical Museum, Moscow

Fig. 15. (Left)
Making of a double-rosette filigree bead. Silver, modern, Cortina d'Ampezzo, (Arnoldo, p.51d), © Bandion.it

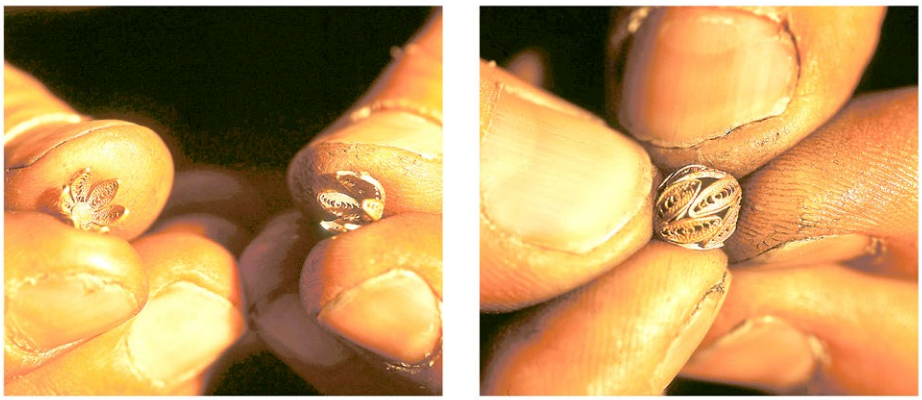

Fig. 16. (Below)
Beads, interlocking lobe construction.
(a) 800 standard silver, 1824–1872, Genoa, Italy, d: 1.4 cm, lion's head mark and French weevil import mark, 1864–1893, 700326 (see also fig. 93d), © author;
(b) silver, modern, Cortina d'Ampezzo, (Arnoldo, p.51d, detail), © Bandion.it;
(c) silver, 20th century, prob. N. Africa, d: 1.9 cm, 493148 (see also fig. 86a), © author;
(d) silver-gilt, late 20th century, China, d: 1.07 cm, 'SILVER. MADE IN CHINA' marks, Ebay July 2020

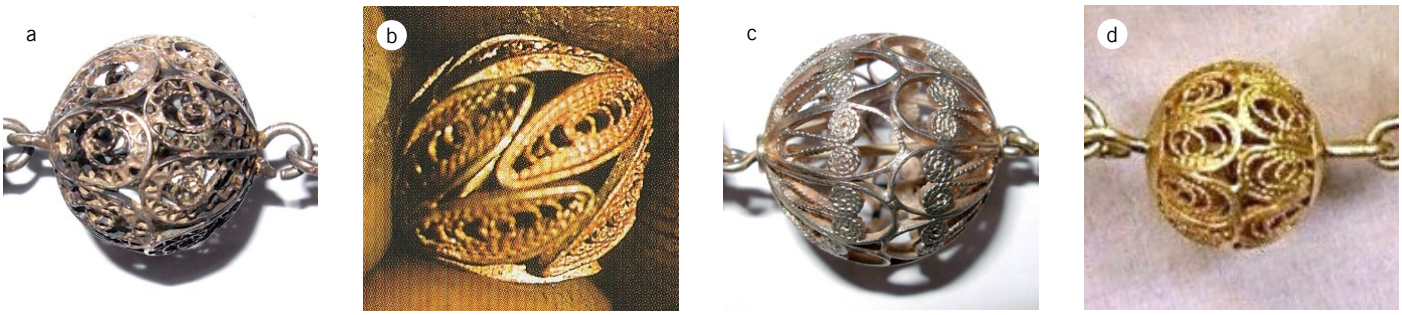

Fig. 17. (Far left)
Swirling lobe bead. Gold, before 1638, Philippines, (Chadour, 1990, cat.no. 99 (BUTJ)), © Beatriz Chadour

Fig. 18. (Mid-left)
Modern bead with swirling lobes. Gold, China, detail of a bracelet sold at Piers Motley Auctions, 7–8 August, 2023, lot 1192, image courtesy of Piers Motley Auctions

Fig. 19. (Centre)
Roundel construction giving double-rosette appearance. Bead, gold, 11th century, Fatimid Egypt or Syria, d: 2.25 cm, (Spink and Ogden, fig. 70), acc. no. JLY 716. The Nasser D. Khalili Collection of Islamic Art. © Khalili Family Trust

Fig. 20. (Mid-right)
Braamknop button with overlapping lobes. Silver, 2nd half 19th century, Netherlands, d: 3 cm, sword and illegible marks, 903283g (see also figs. 72, 105a), © author

Fig. 21. (Right)
Stamped metal lobe frame. Rosary bead, 750 standard silver, after 1934, Spain, d: 0.9 cm, shooting star mark, 1208145, © author

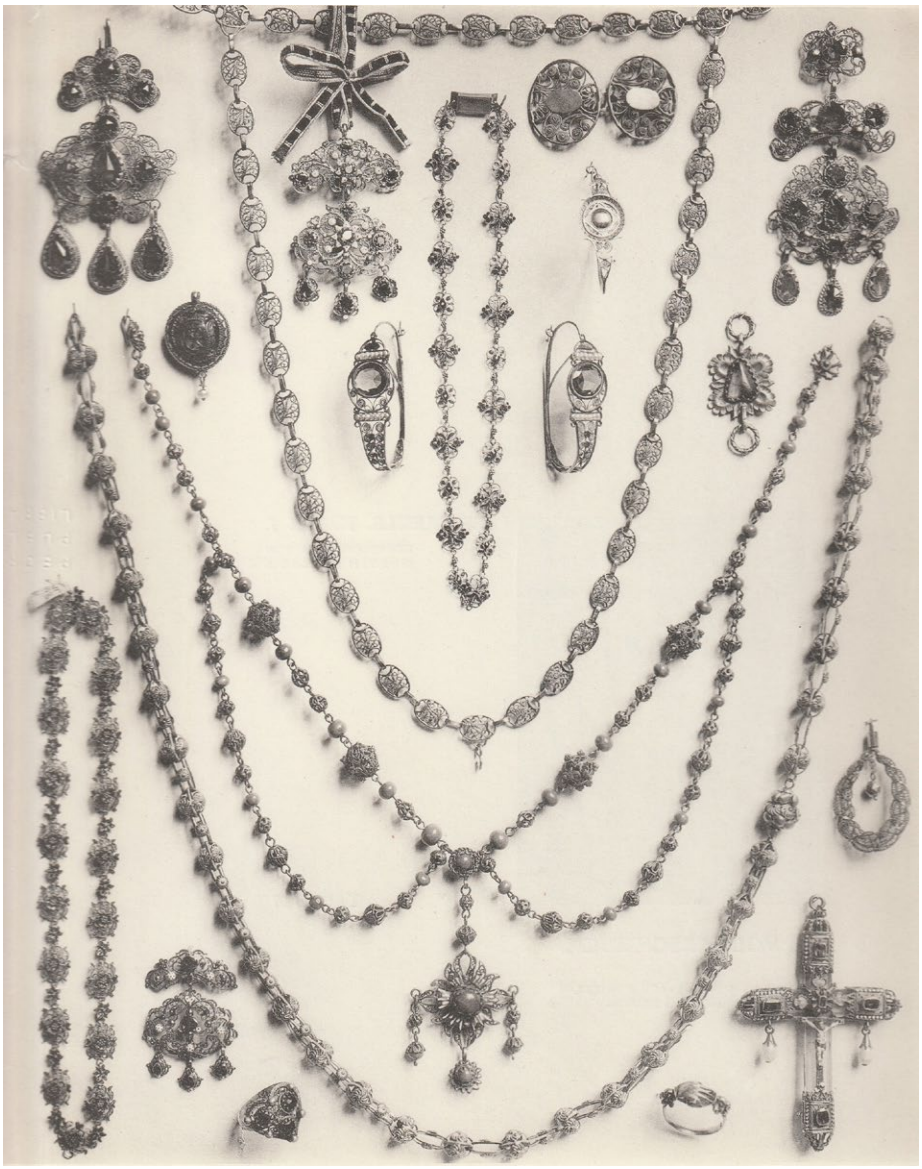

Fig. 22.
Open-lobed rosary beads. Parts of a rosary (centre, second from bottom), gold, before 1906, (Haberlandt, pl.57) (a) detail

Fig. 23.
Open-lobed beads as appendages. (a) On ends of a cylindrical bead, gold and enamel, late 15th–16th century, Granada, Spain, 2.5 x 1.3 cm, The Metropolitan Museum of Art, New York, Gift of J. Pierpont Morgan, 1917, acc. no. 17.190.161a; (b) On ends of a cylindrical bead, silver-gilt and enamel, 19th century, Morocco, d: 1.6 x l: 4.4 cm, 1312149a, © author

Fig. 24.
Open-lobed earring pendant. Silver-gilt, 1860–1870, Salamanca, Spain, 6.0 x 1.7 cm, V&A 1118a-1873, © Victoria and Albert Museum, London

Fig. 25.
Open-lobed bead, silver, late 20th century, Ghana, d: 1.2–2 cm, Ebay March 2016

Fig. 26.
Brooch with open-lobed bead pendants. Silver, 20th century, Norway, '830' and unknown maker's mark, 1107154; (a) detail, d: 1.3 cm (bead), © author

Fig. 27.
Open-lobed bead, silver, 19th century, Morocco, d: 1.3 cm, 1312149b, © author

Fig. 28.
Open-lobed beads on an earring, gold and garnet, 11th–13th century, Iran, w. of earring 2.2 cm, (Spink and Ogden, fig.115), acc. no. JLY 733. The Nasser D. Khalili Collection of Islamic Art. © Khalili Family Trust

Fig. 29.
Open-lobed buttons, silver-gilt, 16th–17th century, Chiprovtsi, Bulgaria (Sotirov, 1976, fig.112), © ДИ „СЕПТЕМВРИ", СОФИЯ, 1984

Fig. 30.
Spiral discs. The diagram shows the structure – in reality there is no space between the curves

Fig. 31.
Stretched spiral

Infill motifs

The following is an attempt to classify the varying filigree motifs used as ornamental infill to assist with description and identification. There are no standard terms in English to describe these patterns, as filigree has never been so widespread or long-lasting a technique in Britain as to allow the evolution of specific terms. For this reason I have used generic descriptions. In the countries where filigree is practised, the most common motifs usually have local, often archaic or dialect, names. The motifs used as infill in open filigree are not clearly defined, and tend to blend into each other.

The comma-shaped **curl** is the simplest filigree infill, the natural shape made by curving a piece of flattened wire. With more twists of the pliers it becomes a **scroll** and then a **spiral**. When a piece of wire is wound in a tight spiral so that there is no space between each turn, it forms a **spiral disc** (fig. 30). As is always the case with filigree motifs, there is no clear dividing line between a tightly wound scroll and a deliberate spiral disc.

A spiral is naturally circular in shape. When it is deformed by compressing the sides it creates a **stretched spiral**, usually oval (fig. 31) but sometimes pulled into other shapes to fill a specific space.

Several scrolls grouped together symmetrically form a **spray**, which can be one-sided, like a sprig of lily-of-the-valley, or doubled, with a central spine (fig. 32).

If the ends of a scroll are curved in opposite directions an **S-shaped** or **figure-of-eight** scroll is created. This becomes a **volute** if one end is noticeably larger than the other. This is the most efficient way to fill the lobe of a filigree rosette (fig. 33).

When the ends of the scroll are curved in the same direction to face each other, a **kidney**-shaped motif is created. This can become a **heart** when the central part of the wire is extended outwards in a V-shape, or like the '**eye**' of a hook and eye, when the central section is extended down in a loop between the two scrolled ends (fig. 34).

Another simple element, widely used in early filigree but less in double-rosette beads, is a basic **loop**, consisting of a single length of wire curved symmetrically so that the two ends are roughly equal. If both ends are turned back, it takes on the form of the Greek letter **omega** (fig. 35).

Rings, or small circles, generally made of twisted wire and dominant on applied filigree beads, appear occasionally in open filigree, but proved to be inefficient when made of flattened wire, and were thus superseded by elaborations of the basic curl.

Curls, scrolls and spirals

Examples of loose, almost random, **curl** designs are characteristic of open filigree in the sixteenth and first half of the seventeenth century. Few complex spherical objects employing this technique survive, examples including a silver pomander (later gilded), in the Victoria and Albert Museum, London (see fig. 4a above), and buttons from the wreck of the 'Nuestra Señora de la Concepción' (see fig. 17 above). These early curl patterns often include loops and occasionally feature later elements, such as S-scrolls or

Fig. 32.
Sprays. From left to right: single spray, single spray interspersed with loops, double spray

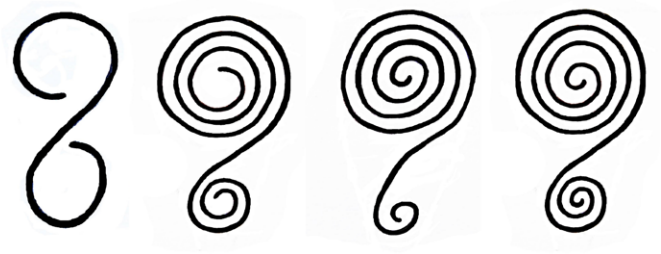

Fig. 33.
S-scrolls. From left to right: S-shape, volute with central space, volute, volute with double spiral discs

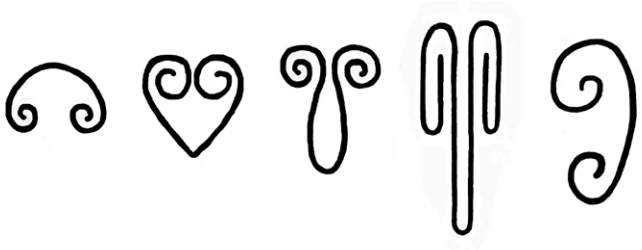

Fig. 34.
Kidney shapes. From left to right: plain kidney, heart-shaped kidney, 'eye' kidney, loop kidney, sideways kidney

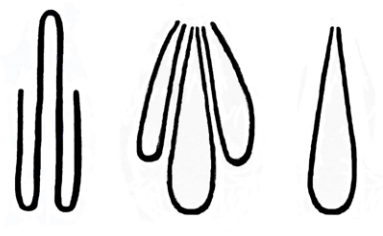

Fig. 35.
Loops. From left to right: omega loop, loop spray, plain loop

Fig. 36.
Button with fleur-de-lys motif, gold, before 1638, Philippines, d: 0.7 cm, (Chadour, 1990, cat. no. 96, BUTF), © Beatriz Chadour

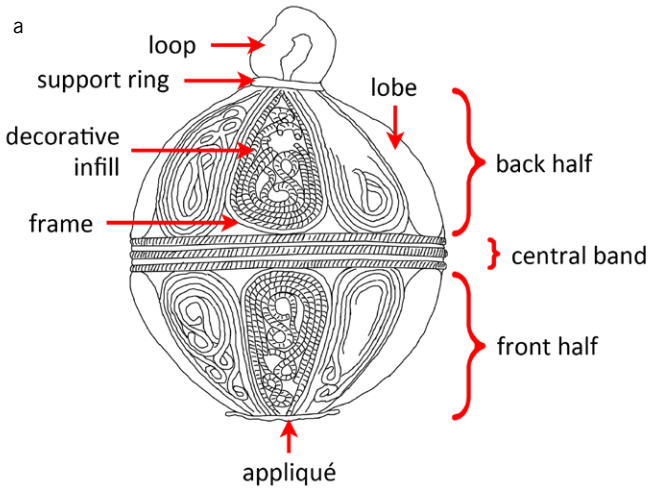

Fig. 37.
Button with complex basic scroll design. Silver, possibly gilded, 17th century, from a Dutch shipwreck, Province of Noord-Holland, (a) drawing © van der Stok-Nienhuis et al

Fig. 38.
Scroll motif beads. (a) Rosary bead, silver-gilt, 19th century, Spain, d: 0.9 cm, 1416019, © author; (b) Necklace bead, 800 standard silver-gilt, 1824–1872, Genoa, Italy, d: 0.5 cm, lion's head mark, 698375, © author

Fig. 39.
Brooch with pendant scroll-motif beads, silver, *c.* 1900, Oslo, Norway, David Andersen, 830S and tools mark (on back of brooch), 1107017; (a) detail, d: 1.4 cm (bead), © author

kidney shapes, but are more likely to consist of separate curls arranged in a way which resembles later designs made from a single length of wire. A design associated with this early phase consists of two curls with a loop between them forming a trefoil or fleur-de-lys, as found in beads and buttons from the 'Nuestra Señora de la Concepción' (fig. 36). From the same source, plain curls in varying patterns form the infill of swirling comma shapes.[12]

In this early period, the arrangement of curls often differs from lobe to lobe when there is more than one motif in each lobe. This most commonly appears in larger beads (see fig. 4a above), and also applies to other objects made of filigree from this period, such as a set of 12 Asian cups and saucers (1620-1630) in the Museum und Schatzkammer des Deutschen Ordens, Vienna (DO 88), illustrated in Veenendaal et al (2014, fig. 202). Towards the later seventeenth century, the patterns in each lobe become more consistent. Some large silver buttons from a Dutch shipwreck of the seventeenth century (fig. 37) may belong to an intermediate stage, in which the almost random curls of the earliest phase begin to be arranged into uniform designs in which the pattern continues to consist only of curls and loops of wire, but each lobe has the same repeated design.

At around this time, single curls or scrolls also become consistent from lobe to lobe. These are one of the most frequently applied motifs in small double-rosette beads of all periods, usually replaced by volutes in larger ones. Examples of scrolls can be found in rosaries from Spain, often with a slight curve at the base resembling a proto-volute (see fig. 21 above and fig. 38a), and from Mexico (eg Davis and Pack 1963), and in necklaces from northern Germany (eg Deneke 1982) and from Italy: Genoa (fig. 38b) and Sicily (eg Gri and Cantarutti 1988:65, 126–7). As elements of other jewellery, beads with scroll infill are used attached to nineteenth century Iranian earrings (Spink

12 Chadour 1990, cat. no.97 BUTA, cat. no.98 BTAA.

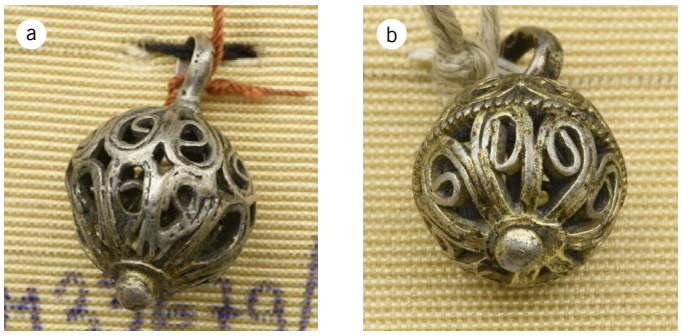

Fig. 40.
Russian buttons with scroll motif. (a) Silver, 17th century, 2.2 x 1.6 x 1.5 cm, inv. no. ОК 25367; (b) Silver-gilt, 18th century, 1.9 x 1.1 x 1.1 cm, inv. no. ОК 21835, both © State Historical Museum, Moscow

Fig. 41.
Scroll motif with granules. Button, silver-gilt, 18th century, Russia, 1.6 x 1 x 1 cm, inv. no. ОК 21824, © State Historical Museum, Moscow

and Ogden 2013 vol 2, fig. 493), and as pendants on Norwegian brooches (fig. 39). Norway is unusual in using filigree beads as parts of other jewellery, but not as necklaces. Numerous Russian buttons of this design from the seventeenth and eighteenth centuries are kept in the State Historical Museum, Moscow (fig. 40). Plain scroll motifs tend to be used for smaller beads and buttons.

Appliqués on the body of the sphere begin to appear in the eighteenth century, although the majority of beads have no added decoration. Their distribution on beads with plain scroll infill is much the same as for other patterns (see below, 'Appliqués'). In contrast, almost all buttons with plain scroll pattern infill have appliqués; these are mostly granules, possibly because their size precludes anything more complicated. The granules can be placed all over the button surface (fig. 41), or simply on the front.

The **spiral disc,** when made from flattened twisted wire, first appears in modern filigree in Europe at the end of the eighteenth century, although some Russian buttons with tightly wound wire spirals may be earlier. For double-rosette beads, the spiral disc usually forms part of a volute (see below, 'S-shapes, figures-of-eight and volutes'), with a second, smaller spiral disc, or a simple scroll, at the narrow end (fig. 42). There is often a space in the centre of the disc, frequently supporting a granule (fig. 43).

Double-rosette filigree beads in which spiral discs fill the lobe are widespread. In the wider Italian region,[13] spiral discs are frequently mixed with other motifs (see zigzag below, under 'Other'), However, plain spherical beads featuring spiral discs, usually without additional decoration and often found in rosaries or as pendants attached to other pieces of filigree, were used

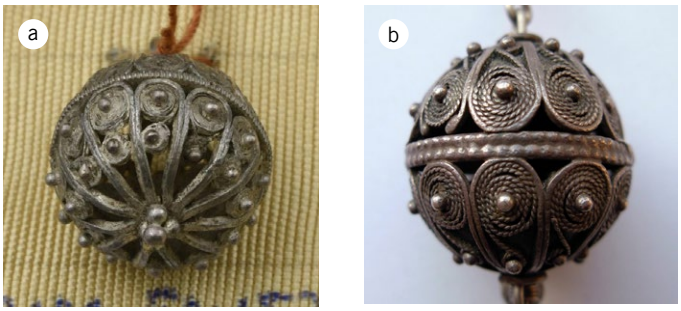

Fig. 42.
Spiral disc volute motif. (a) Button, silver, 17th century, Russia, 2.2 x 1.6 x 1.6 cm, inv. no. ОК 24771, © State Historical Museum, Moscow; (b) Bead, silver, 20th century, Israel, d: 2 cm, 289254, © author

Fig. 43.
Spiral disc volute motif, with central space for granule. 800 standard silver, 1824–1872, Genoa, Italy, d: 1.8 cm, lion's head mark, 1004101a, © author

Fig. 44.
Rosary bead with spiral disc motif, silver, 19th century, Sardinia, d: 1.4 cm, 802212, © author

Fig. 45. (Right)
Spiral disc motif of probable Ottoman origin. (a) Button, silver-gilt, late 19th–early 20th century, Albania or northern Greece, d: 2 cm, 1417061; (b) Bead, silver-gilt, Tunisia, d: 1.2 cm, 175432a, both © author

13 Where filigree is concerned, the region of Italian influence includes the Adriatic coast and Malta, as well as Italy itself.

Fig. 46.
Yemeni beads with spiral disc motif. (a) Bead pendant, silver, 20th century, Israel, d: 2 cm, 595139, © author; (b) Silver, late 20th century, 1.6 x 1.5 cm, Ebay August 2022; (c) Silver-gilt, 1930s–1940s, d: 2.3 cm, BM. 2012,6030.215, © The Trustees of the British Museum

in Malta (Bonello and Balzan 2013), and Dalmatia (eg Vrtovec 1985:58; Chadour and Joppien 1995, fig. 537). In Sardinian rosaries, they are often barrel-shaped or flattened, with a granule on the spiral disc (fig. 44) (Gometz 1995:99, Tavera 1987:157, 168, 173, 181). Spherical beads, similar to those made in Italy, are found in Mexico (Davis and Pack, 1963) and North Africa, particularly Morocco (Rabaté and Goldenberg 1999). In the Caucasus, plain spherical beads, with granules as ornament but without a central band, usually form parts of other objects, such as pendants on belts and clasps (Komleva 1988).

Beads and buttons with spiral disc infill, taking an often elongated, slightly oval or barrel-shaped form with a central band between the two halves and applied granules, probably originated in the Ottoman region.[14] They were part of the traditional costume in Dalmatia, where they were worn as buttons (fig. 45a), and are found as elements of necklaces in Cyprus (Ethniko Istoriko Mouseio 1995) (see fig. 67, below) and sporadically over a wider area, including Sardinia (Gometz 1995:101) and north Africa (Mzab in Algeria, Makilam and Kammere-Grothaus 2015; Tunisia, fig. 45b). The design also occurs as pendants in Palestine (Abed Al-Samih Abu Omar 1986:112, fig. F1), where they have become a typical element of the 'Yemenite' style of Israeli filigree (fig. 46a). In Yemen itself, these beads have a similar construction, but are often more spherical (fig. 46b), and are sometimes decorated with rows of granules placed on wire rings along the edges of the lobes (fig. 46c). Spiral discs also feature in double-rosette filigree buttons, often with a slightly conical front and flatter back, one of the many types typical of traditional costume in Dalmatia (fig. 47a-b). The front part is richly decorated with coil rings and granules, with a pyramidal knop resting on a ring of coiled wire, and a pronounced central,

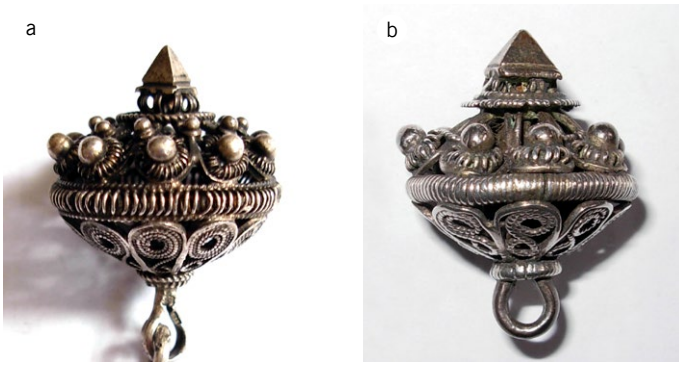

Fig. 47.
Dalmatian buttons with spiral disc volutes. (a) Toggle button, silver, 1872–1919, Dalmatia, d: 2.3 cm, lion's head, M7 (Cattaro) and S.G.? (maker) marks, 1415130; (b) Silver, late 19th–20th century, Croatia, d: 1.8 cm, 1208170; both © author

14 Ottoman influence on filigree is apparent in a wide area stretching from the Balkans through the Mediterranean and Levant to North Africa, as well as in Turkey and Armenia.

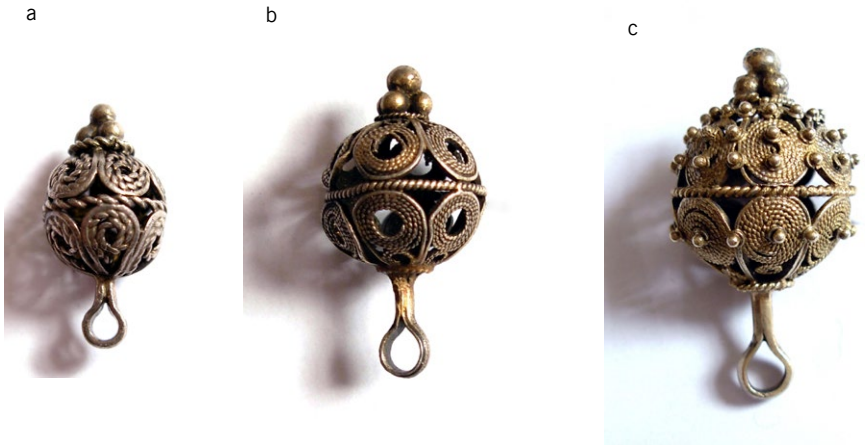

Fig. 48.
Buttons with spiral disc motif, silver, late 19th–early 20th century, Bulgaria? (a) d: 0.8 cm, 801100; (b) d: 1.3 cm, 1417057i; (c) d: 1.6 cm, 1417057p, all © author

Fig. 49.
Necklace of beads with spray motif, silver, 19th century, India?, 904195 (see also fig. 90) (a) detail, largest bead, d: 2 cm, © author

spiral band between the two halves. The lobes contain plain spiral disc volutes on the back; these can be repeated under the frontal decoration, or the lobes can simply be left empty.

Buttons with spiral disc lobes and a pyramid of granules as a knop are probably Bulgarian (fig. 48); they bear a clear resemblance to those made at Chipvrovtsi in the sixteenth and seventeenth centuries (see fig. 29 above).

Sprays can be made from all types of scroll design, with an open or densely-filled (spiral disc) head, and a long or short stem. Beads featuring a clearly defined single spray, of long-stemmed, densely-filled scrolls alternating with loops, occur in the largest beads of graduated necklaces of unknown origin, possibly Indian (fig. 49). Single sprays of short-stemmed scrolls with open heads are found in Russian buttons, and the same scroll type can be applied to more complex designs, such as groups of sprays facing each other in opposite directions, or elegant spirals decorated with granule rosettes which are typical of Tatar filigree from the Caucasus (fig. 50).

Scroll sprays also feature as the main element in hairpin heads and buttons made in the southern German region, particularly at Schwäbisch Gmünd. Here the workmanship is quite different. The sprays are ill-formed and difficult to identify (fig. 51a), and any free space is filled with whatever fits best, either shorter sprays, in the same or opposite direction, or simple scrolls (fig. 51b-c). The front or top is often decorated with applied coil rings, and where there is a prominent knop, of metal, paste or garnet, the filigree filling is often absent from the narrower part of the lobe, creating a wheel effect (fig. 52). South German buttons were more frequently made as a half-sphere with a sheet metal back (see fig. 10 above), however the filigree construction remains the same.

Fig. 50.
Russian buttons with spray motif. (a) Silver-gilt and paste, 1828–1846, Moscow, 3.1 x 2.3 x 2.3 cm, inv. no. ОК 20220; (b) Silver-gilt and turquoise, 18th century, 3.8 x 2.7 x 2.6 cm, inv. no. ОК 20221; (c) Silver-gilt and turquoise, 18th–19th century, Caucasus, 4 x 3 x 3 cm, inv. no. ОК 20197, all © State Historical Museum, Moscow

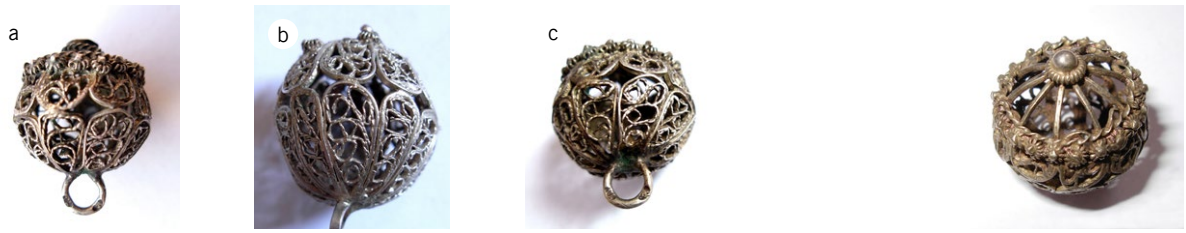

Fig. 51.
South German buttons with spray motif. (a) Silver and garnet, before 1884, Schwäbisch Gmünd, d: 1.8 cm, unicorn's head and illegible maker's marks, 1208112; (b) Silver, 19th century, d; 2.3 cm, 1417041; (c) Silver and garnet, before 1884, Schwäbisch Gmünd, d: 1.9 cm, unicorn's head and '13' marks, 1417073, all © author

Fig. 52.
South German button with spray motif and wheel-shaped top. Silver, before 1884, Schwäbisch Gmünd, d: 1.8 cm, unicorn's head and '13' marks, 389004, © author

Fig. 53.
Portuguese spray motif. Pendant bead, silver-gilt, 20th century, Portugal, detail of a bracelet sold at Alnwick Auctions, 8 August 2023, lot 154, image courtesy of Danci-Mina Baring

Fig. 54.
Italian spray motif. Hairpin head, silver-gilt, before 1872, Biella, Italy, d: 3.8 cm, lion's head mark, 1311114, © author

Fig. 55.
Maragatos earring with spray motif. Silver-gilt and red cloth, 1800–1870, Astorga, Spain, (a) detail, d: 3.2 cm, V&A 1116A-1873, © Victoria and Albert Museum, London

Fig. 56.
Hairpin head with spray motif, 950 standard silver-gilt, 1867–1872, Bosnia, d: 2.6 cm, Diana's head 1, S? (town) and JW (maker) marks, 1210022a, © author

The spray as a motif in double-rosette spheres is rare elsewhere in Europe. In Portugal, where sprays are the most common element in other types of filigree, beads are invariably made of stretched spirals (see fig. 59a–b below), though the typical Portuguese spray is occasionally applied in larger spherical objects (fig. 53). Similarly, in Italy, sprays are sometimes employed alongside other filigree elements in large, decorative hairpins (fig. 54), and from Astorga, Spain an earring in the Victoria and Albert Museum (fig. 55) shows pairs of scrolls backing each other. Sprays are rare in the Balkans; a hairpin with silver marks for Bosnia has a head with minimal sprayed curls either side of a stretched spiral (fig. 56).

Beads made from **symmetrical double sprays** appear to be mainly non-European. Examples are recorded from Mexico,[15] Iran,[16] Thailand (fig. 57a), and the Philippines (fig. 57b).

The **stretched spiral** is one of the most recent motifs found in filigree, and does not seem to have been used much before the

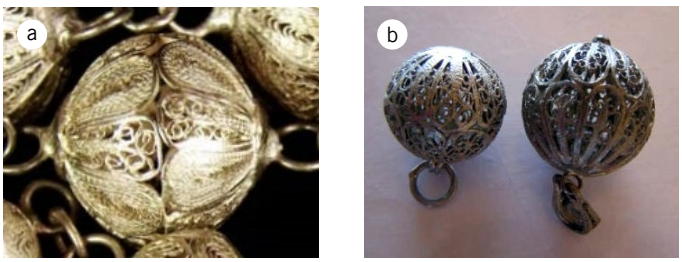

Fig. 57.
Double-spray motif. (a) Bead, silver, late 20th century, Chiang Mai, Thailand, Ebay August 2009; (b) Bead pendants, silver, 1960s, Baguio, Philippines, Ebay November 2010

15 Davis and Pack 1963.

16 Schmuckmuseum Pforzheim 1974, fig. 152.

mid-nineteenth century. It may have been introduced by the Genoese, who made spectacular use of the design in their exhibition work, for example a card case shown by Emile Forte at the 1867 Universal Exhibition in Paris (fig. 58). Due to its ease and speed of construction, the stretched spiral has become the most common filigree motif worldwide.

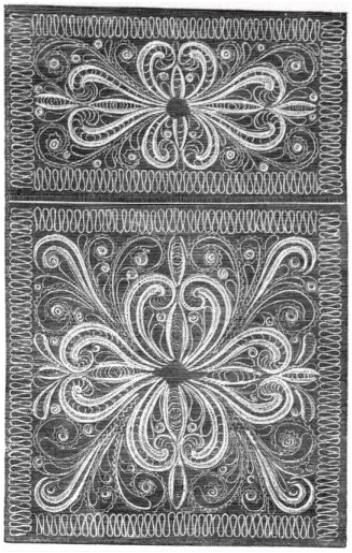

Fig. 58.
Engraving of a silver card case with stretched spiral motifs made by Emile Forte, Genoa, exhibited at the Universal Exhibition in Paris, 1867 (Art Journal, 1867, p.248)

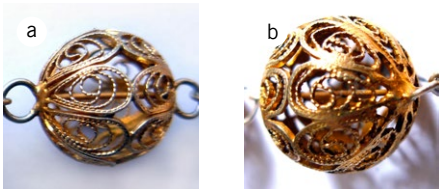

Fig. 59.
Beads with stretched spiral motif.
(a) Silver-gilt, 1913–1938, Gondomar, Portugal, d: 1 cm, boar's head II and maker's marks, 1208209; (b) Silver-gilt, after 1938, Porto, Portugal, d: 1.3 cm, chicken's head 833 and maker's marks, 1415023, both © author

Fig. 60.
Yemeni bead with stretched spiral motif. Silver, early 20th century, Yemen, d: *c*. 3 cm, © Courtesy of Michael Backman Ltd, London

Fig. 61.
Sulawesi bead with stretched spiral motif. Silver, late 20th century, Sulawesi, Indonesia, d: 2.5 cm, Ebay October 2013

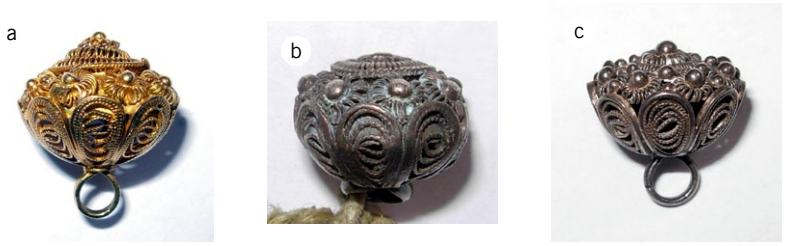

Fig. 62.
Buttons with stretched spiral motif, 19th–20th century, SE Asia. (a) Gold, 19th–20th century, south-east Asia, d: 1.2 cm, 700344; (b) Silver, 19th century, south-east Asia, d: 1.1cm, 904297; (c) Silver, 19th century, south-east Asia, d: 1.1 cm, 493083b, all © author (see also fig. 105)

Fig. 63.
Hairpin head with stretched spiral motif, squeezed in the centre. 800 standard silver, 1824–1872, Vercelli, Italy, d: 3.2 cm, lion's head mark, 1311152, © author

Fig. 64.
Linked pair of hairpins with stretched spiral motif, silver, 1877-1896, Malta, d: 1.8 cm (smaller), 2.5 cm (larger), slanting Z, maker's mark BC?, 1208260; (a) detail, © author

Filigree beads using the stretched spiral technique date from no earlier than the mid-nineteenth century with most from the twentieth century, although the small scale of the lobe in a double-rosette bead can give a mistakenly regular stretched-spiral appearance to what is simply a scroll. This may be the case for a necklace of filigree beads associated with Mary Queen of Scots (1542–1587) in the National Museums of Scotland (NMS H.NA 421). More recent examples of beads using the stretched spiral design come from Portugal (fig. 59), Yemen (fig. 60), China (see fig. 16d above), and south-east Asia (see figs. 57a, 61) (Summerfield 1999). Double-rosette buttons featuring stretched spirals are comparatively rare, but small compact examples, resembling Dutch *braamknopen* (Minderhoud 2010; Perry 2007) from the front but with a dome of sheet metal under the face and stretched spirals filling the lobes at the back, were probably made in south-east Asia in the nineteenth century, in imitation of the buttons worn by Dutch colonists (fig. 62).

Hairpin heads employing the stretched spiral motif mainly come from the Italian region: Piedmont, Cortina d'Ampezzo,[17] the Veneto,[18] Bosnia (see fig. 56 above) and Malta. The majority of stretched spiral designs have the starting point in the centre, at the widest part, with the loops of the spiral arranged symmetrically on either side so that there is a band of open spaces down the centre of the design, eg fig. 59a (Portugal) and fig. 16d (China) above. A variation, common in lobed designs, has the starting point at one end: fig. 56 (Bosnia), fig. 57a (Thailand), fig. 60 (Yemen). Another variation, much favoured by Genoese filigree workers and often seen in the large heads of hairpins (fig. 63), is to squeeze the space at the sides of the central point slightly, so that the solid area of wires forms a triangle and the central spaces form an hour-glass shape rather than a plain strip. This pattern is also found in Maltese filigree (fig. 64).

S-shapes, figures-of-eight and volutes

S-scrolls of all kinds are widespread in double-rosette beads across many areas since at least the sixteenth century. S-scrolls in beads from before around 1700 tend to have open scrolls at the ends. Examples include beads in the sixteenth/seventeenth century Skrwilno treasure, Poland; in the treasuries of the Sanctuary of the Madonna della Scarpello (fig. 65) and the Cathedral at Kotor, from the church of the Madonna del Rosario (fig. 66) in Montenegro; a bead cap from the Spanish 'Concepción' wreck;[19] and fragments of a bead or button from Belorechenskaya, Russia (see fig. 8 above).

Open S-scrolls continued in use in some rosary beads: from Switzerland, probably made in southern Germany,[20] from Italy[21] and from Malta.[22]In other places this type of bead more often has a dense spiral or spiral disc at the ends; sources include

Fig. 65.
Necklace beads, gold and enamel, with S-scroll motif.
Second half of 17th century, Dubrovnic, Croatia (Pazzi, p.83, fig. 14); (a) detail, © Piero Pazzi

Fig. 66.
Necklace beads, gold and enamel, with S-scroll motif. 17th century, Dalmatia, (Pazzi p.197, fig. 2) © Piero Pazzi

17 eg Fröhlich 1980:10, figs. 4–5.

18 eg Gri and Cantarutti 1988:23, fig. 3.

19 Chadour 1990, cat. no. 39 COMU.

20 Rusch 1974, fig. 32 ; Chadour-Sampson 1999, fig. 14.

21 ibid. fig. 20.

22 Bonello and Balzan 2013.

Fig. 67.
Necklace of beads with S-scroll motif. Silver-gilt, Cyprus, d: 1.1 cm each, V&A 1562-1888; (a) detail, © Victoria and Albert Museum, London

Cyprus (fig. 67), North Africa eg Morocco,[23] Palestine[24] and Israel/Yemen (see figs. 42b, 46a above).

In buttons, S-scrolls and their variants are the most common motif, and even though their use is geographically more limited than in beads, it is equally long-standing in both types of object. As with beads, the earliest S-scrolls in buttons have open ends. There are buttons from the Perm province of Russia with open volute infill which are dated to the ninth–thirteenth centuries (fig. 68), from Belorechenskaya village, Kuban, from the thirteenth–fifteenth centuries (see fig. 8 above), and from Chiprovtsi, Bulgaria from the seventeenth century (fig. 69), along with many more Russian examples in the State Historical Museum collections from the same period. As with other motifs, some of the early examples show variations on the later established pattern. The Belorechenskaya buttons have a backward twist in the centre of the volute at the larger end. An example in the Chalcis hoard (see fig. 5 above) from before 1470 appears to feature an S-scroll, but was made from two separate rings soldered together.

By the eighteenth century, buttons with S-scroll infill continued in use in Russia, but had also appeared in the Italian region of influence, the Netherlands, and Spain. In northern Italy, the S-scroll motif consists of a tightly wound volute, often with a clear space in the centre which is filled with a granule on the front of the button, and left empty on the back (fig. 70a, see also fig. 43 above).These buttons can have a ring of twisted wire surrounding the knop, as found on Spanish buttons of a similar design (fig. 70b), while those from Sardinia frequently include a collet-set glass paste as a knop (fig. 70c, see also fig. 107 below). Maltese buttons of this pattern (fig. 71) tend to be larger and heavier than the Italian and Spanish examples. Dalmatian buttons often have the same volute infill on both front and back, whilst the front can be so smothered with applied coil rings, granules and other appliqués, that the filigree infill is reduced or even completely absent (see fig. 47 above). The standard Dutch *braamknop* has a characteristic plain S-shape infill on the

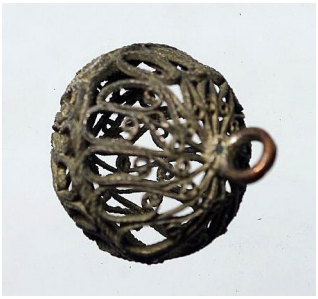

Fig. 68.
Button with open volute motif, silver, 9th–13th century, Perm province, Russian Empire, d: 2.8 cm, inv. no. Оп.В 1187/3, © State Historical Museum, Moscow

Fig. 69.
Button with S-shape motif, silver-gilt, 17th century, from Kopilovtsi Treasure, Bulgaria, (Sotirov, 1976, fig. 106 (detail)), © ДИ „СЕПТЕМВРИ", СОФИЯ, 1984

Fig. 70.
Buttons with tightly wound (spiral disc) volute motif.
(a) 800 standard silver, 1824–1872, Genoa, Italy, d: 1.8 cm, lion's head mark, 1004101b; (b) Silver, 19th century, Spain, d: 1.5 cm, 392140; (c) Silver and paste, 19th century, Sardinia, d: 2.2 cm, 1416072, all © author

23 Rabaté and Goldenberg 1999.

24 Abed Al-Samih Abu Omar, p.112, fig. F1.

Fig. 71.
Maltese buttons with tightly wound volute motif. (a) Silver, 1775–1797, crowned R mark d: 1.9 cm, 1418058 (see also fig. 106c); (b) Silver, 19th century, RO mark, d: 1.5 cm, 1312079c, both © author

Fig. 72.
Dutch button with S-shape motif on back, silver, 2nd half 19th century, Netherlands, d: 3 cm, sword and illegible marks, 903283g, (see also figs. 20, 105a) © author

Fig. 73.
Toggle button with open volute motif, silver, 19th century, Cordoba, Spain, d: 2.2 cm, lion rampant mark, 799137, © author

back (fig. 72); the front, covered with coil rings (see fig. 105a, below) usually consists of an open-lobed rosette, but the lobes can also contain a plain loop, or, by the late nineteenth century, be replaced entirely by a sheet-silver cap under the appliqués.

Buttons in Spain generally have open volutes and often include a ring of granules surrounding the knop. An unusual feature, found in some Spanish buttons, is the use of contrasting wire on the different halves; flattened twisted wire on the front, and plain ribbon wire on the back (see figs. 70b, 73). Large toggle buttons with fuller volutes, a single heavy granule as a knop, and a ring of granules on the front are Spanish (fig. 74).

A variation occurs in buttons from Thailand; these have quatrefoils, formed from a mix of S-scrolls, long-stemmed scrolls and rings (see fig. 91a, below), which fill the back lobes.

Fig. 74.
Heavy toggle button with spiral disc motif, silver, 19th century, Spain, d: 2.8 cm, 493077; (a) detail, © author

Fig. 75.
Button with kidney motif, silver, 17th century, Russia, 2.6 x 1.7 x 1.7 cm, inv. no. ОК 24814, © State Historical Museum, Moscow

Kidney-shaped motif

The basic kidney shape fits comfortably into the top curve of a lobe, and has been used in filigree double-rosette spheres since the seventeenth century, for example in a pomander of unknown origin in the Victoria and Albert Museum (see fig. 4b above), and several Russian buttons in the collection of the State Historical Museum in Moscow (fig. 75). In the nineteenth and twentieth centuries, kidney shapes were employed in many places, including Russia, central Europe, Germany, Italy, and Spain.

In small beads, for example those suspended from the heart-shaped brooches which belong to the traditional costume of the Altes Land in northern Germany (e.g. Behrmann 1985), a single kidney is used sideways (fig. 76). In the same area, the lobes on the back of large buttons are filled with numerous kidney shapes stacked on top of each other. The lowest is sometimes turned on its side, or replaced by a scroll, to fill the narrow space at the base of the lobe more efficiently (fig. 77). Appliqués often cover the front thus concealing the structure. This design of multiple kidney shapes, most common in north Germany, also appears on a double-ended hairpin from Lombardy (fig. 78) with an additional volute filling the space at the narrow end.

In larger spheres, the space below the kidney shape is often filled with a supplementary motif, such as a scroll, S-scroll or volute. Kidney shapes surmounting an S-scroll are most common in Russian buttons (fig. 79), but are also found in some buttons from elsewhere in eastern Europe (fig. 80), as well as some Italian hairpins (eg de Luca, 1986, tab.29, fig. 165).

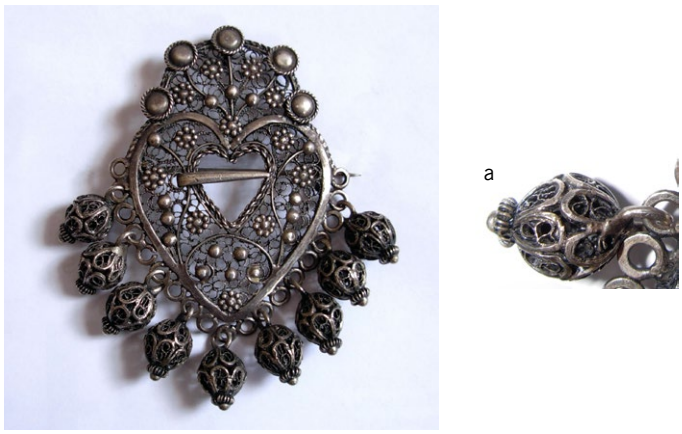

Fig. 76.
Beads with sideways kidney motif. Heart brooch with bead pendants, silver, 19th century, Altes Land, Germany; (a) detail of bead, d: 0.8 cm, 1521043 © author

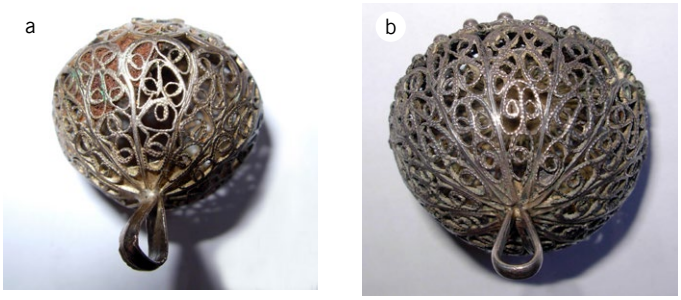

Fig. 77.
Multiple stacked kidneys motif. (a) Button, silver, 19th century, Altes Land, Germany, d: 2.5 cm, 1005376 (see also fig. 108b); (b) Button, silver, 19th century, Altes Land, Germany, d: 3.5 cm, 1312162 (see also fig.101b), © author

Fig. 78.
Head of a double-ended hairpin head with stacked kidney motif. Silver, before 1872, Lombardy, Italy, d: 4.1 cm, anvil, illegible, and maker's (BZ?) marks, 597097 © author

Fig. 79.
Button with mixed kidney motif, gilded copper alloy?, 19th century?, Russia, 2.6 x 2.2 x 2.2 cm, inv. no. ЛУ 2024/2, © State Historical Museum, Moscow

The heart-shaped kidney motif is rare in beads, as it does not conform to the shape of the lobe. However, it appears on an eleventh century bead of the Fatimid period (see fig. 19 above)[25] and in the applied filigree pendant of an elaborate Algerian earring (fig. 81).

A variation of the kidney shape, like the 'eye' of a dress maker's hook and eye, occurs when the central part of the curve is looped down between the two curls. This motif is found in a hairpin head[26] (fig. 82) and comb (fig. 83), from Dalmatia, as well as in buttons from Russia (fig. 84a), and the Balkans (fig. 84b) where it is also found surmounted by a regular kidney shape, often obscured by appliqués (fig. 84c). A kidney motif above an 'eye' appears in a Spanish earring in the Victoria and Albert Museum (fig. 85) and plain 'eye' motifs are found outside Europe, for example in West Africa (fig. 86a, also fig. 16c above) (Garrard 1990:37), and modern Indonesia (fig. 86b). The origin of some distinctive beads with two stacked 'eyes' topped by a ring is unknown, probably non-European (fig. 87). A gold bead

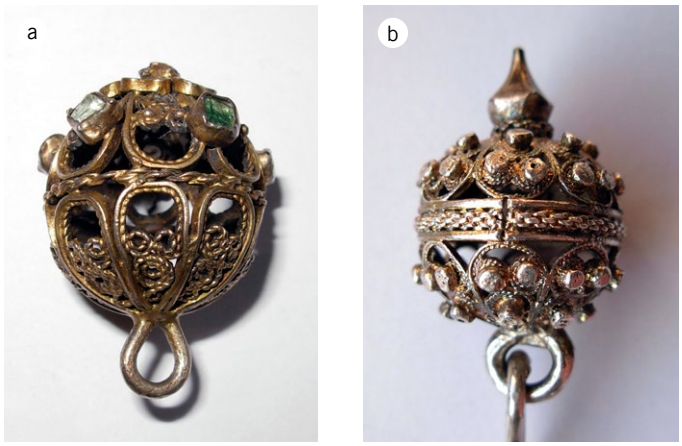

Fig. 80.
Buttons with kidney motif and volute. (a) Silver-gilt, emerald and garnet, 19th century, Hungary, d: 2 cm, 596333; (b) Silver, 19th century, Dalmatia, d: 2.1 cm, DB (maker) mark, 1521020; (c) Bead, silver, 19th century, Dalmatia, d: 1.8 cm, 1005297, all © author

25 Its construction is illustrated in Spink and Ogden 2013, fig. 29

26 Gri and Cantarutti, p.23, fig. 5.

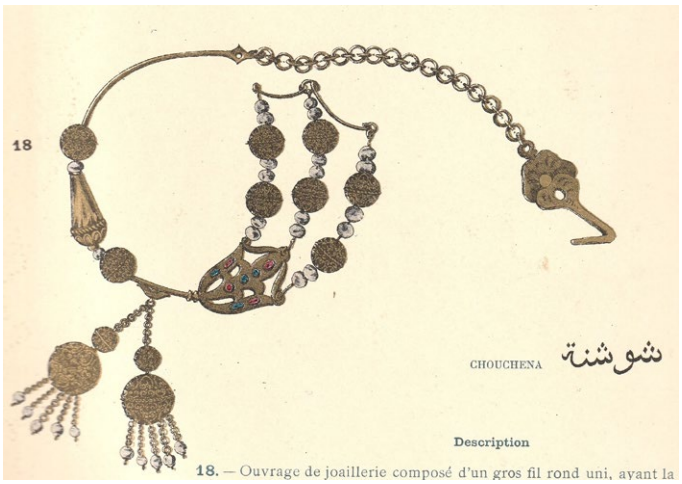

Fig. 81.
Bead pendant with applied heart-shaped kidney motif, gilt, 19th century, Algeria; (a) detail (Gouvernement général de l'Algérie, fig.18)

Fig. 82.
'Eye' motif on hairpin head, gold and pearl, late 18th century, Dalmatia, (Pazzi, p.236, fig. 64), © Piero Pazzi

Fig. 83.
'Eye' motif, resembling a dressmakers hook-and-eye on comb, silver-gilt, 19th century, Dalmatia; (a) detail, d: 0.8 cm, 493133, © author

Fig. 84.
'Eye' motif on buttons.
(a) Silver, 18th century, Russia, 2.5 x 1.5 x 1.5 cm, ОК 21822, © State Historical Museum, Moscow;
(b) Silver, 20th century, Balkans, d: 3.3 cm, 903282d, © author;
(c) Toggle button, silver, 19th century, Albania or northern Greece, d: 2.3 cm, 1417031, © author

Fig. 85.
'Eye' motif on earring pendant, silver, 1860–1870, Cordoba, Spain, 5.2 x 1.8 x 1.3 cm, V&A 1167-1871, © Victoria and Albert Museum, London

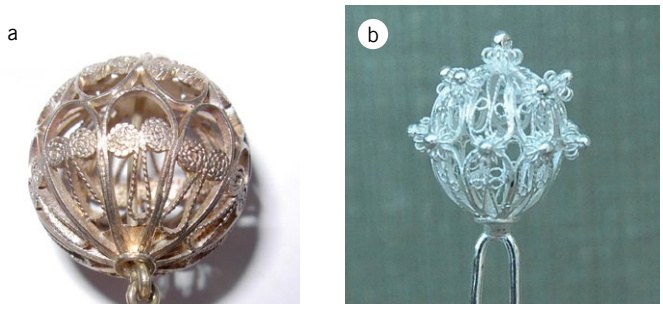

Fig. 86.
'Eye' motif on other beads.
(a) Silver, 20th century, prob. west Africa, d: 1.9 cm, 493148 (see also fig. 16c), © author;
(b) Hairpin head, silver, late 20th century, Kota Gede, Indonesia, d: 1.5 cm, Ebay September 2008

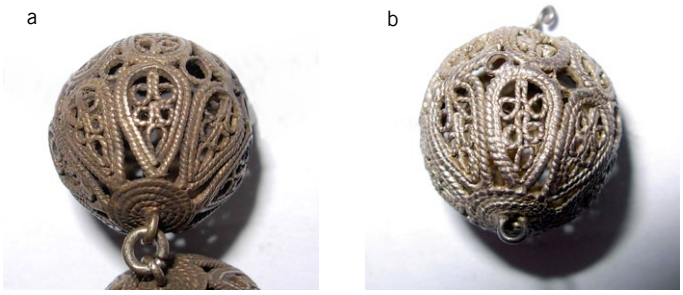

Fig. 87.
'Eye' motif on other beads.
(a) Silver, d: 1.1 cm, 493084b;
(b) Silver, d: 1.5 cm, 1417100, both © author

Fig. 88.
Bead with pre-'eye' motif, gold, 11th–13th century, Iran, d: 1.78 cm, (Spink & Ogden, fig.149). acc. no. JLY 280G. The Nasser D. Khalili Collection of Islamic Art. © Khalili Family Trust

Fig. 89.
Pendant bead, silver and glass, 20th century, Yemen, d: 0.8 cm, 700253, © author

Fig. 90.
Bead with simple loop spray motif. Necklace, silver, 19th century, India?, d: 0.8 cm (smallest bead), 904195 (see also fig. 49), ©

from Iran (eleventh–thirteenth century) illustrates a precursor of the pattern, made from separate wires rather than a continuous single wire, supported at the back by tie bars (fig. 88).

Loops

Loops are ill-suited as the infill of a lobe, and thus rarely form a major element after around 1700. In the early, experimental period before then, they are often combined with curls and scrolls (fig. 4a). The main exception after 1700 is Yemen. In some Yemeni beads, tightly compressed loops of various kinds are the main infill, where the large number of lobes restricts the possibility of anything more elaborate. The most common design, so compressed as to look like strips of wire, is made from a length of flattened twisted wire with the ends of the loop turned back to form a Greek letter omega (fig. 89). It is the standard infill for small pendant beads in Yemeni jewellery, and Israeli jewellery made in the Yemenite style. Ransom illustrates Yemeni beads with loop spray infill (2014: 46, fig. 37).

Loop sprays appear in necklaces of graduated beads of unknown origin, which may be Indian, as the pattern is common in other Indian filigree jewellery. The smallest of the beads have simple loop sprays (fig. 90), and, as the beads increase in size, spiral discs are added, ending with a full spray of spiral discs on long stems alternating with loops (see fig. 49 above). Some buttons from the Adriatic coast of the former Yugoslavia have single loops on the front (invisible beneath the appliqués), mirroring the shape of the lobe, to help support the decoration (see fig. 104 below).

Other ornamental motifs

Unusual patterns and mixtures of patterns occur most frequently in beads made in the earliest period of filigree making, namely in the sixteenth and seventeenth centuries, when goldsmiths were experimenting with the various possibilities of the technique.

Rings

Rings of twisted wire typically form appliqués on sheet-metal buttons from the Nordic countries and Russia up to the twentieth century, and occur also in filigree, in patterns that pre-figure open filigree motifs. For example, one type of button in the Chalcis hoard (see fig. 5 above) has a lobe filled with what would more frequently be an S-scroll in a later button, but is instead composed of two rings, side by side. Modern Thai buttons feature the same use of rings as alternatives to single-wire structures. From the front these buttons resemble those worn by early Dutch traders and colonists in the region, but their construction is totally different; the quatrefoil motifs in the lobes on the back consist of a varying mix of S-scrolls and rings (fig. 91).

Rings are also used to fill spaces in beads of unknown origin, probably non-European (fig. 87), and in a hairpin from Lombardy, Italy (fig. 92).

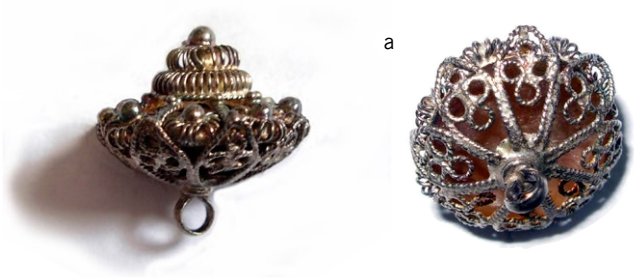

Fig. 91.
Button with a mix of ring motifs. Silver, 20th century, Thailand, d: 1.3 cm, 1106016b, (see also fig. 106e); (a) detail, © author

Fig. 92.
Ring motifs. Hairpin head, silver, before 1872, Lombardy, Italy, d: 2.3 cm, anvil mark, 1518045, © author

Zigzag wire

Characteristic patterns can be found on beads from the present regions of Liguria and Piedmont in Italy, centred on Genoa, the leading European centre for making filigree in the nineteenth century. One such example is the use of **zigzag wire** to line the lobe, between the frame wire and the infill. The latter consists of the usual lobe infill motifs, such as scrolls (fig. 93a), stretched spirals (fig. 93b-c), volutes (fig. 93d), and sprays (fig. 54 above — a particularly elaborate example). When the beads of an object are graduated, the central motif varies by size; the zigzag frame remains the common factor (fig. 94). The same zigzag design is found on hairpin heads (figs. 54, 95). A simplified version of this motif, where the double-rosette lobes were replaced by simpler navette-shaped one-piece segments, (fig. 96) continued to be used for beads until well into the twentieth century.

Fig. 93.
Examples of Italian zigzag motif. (a) Bead, silver-gilt, late 19th century, Italy, d: 1 cm, 1209175; (b) Bead, silver-gilt, late 19th century, Italy, d: 1.5 cm, 1313088; (c) Bead, silver, late 19th century, Italy, d: 1.6 cm, 1209024; (d) Bead, 800 standard silver, 1824–1872, Genoa, Italy, d: 1.5 cm, lion's head mark and French weevil import mark, 700326 (see also fig. 16a), all © author

Netting (*rete*)

A further distinctive feature in Italian filigree is **netting (*rete*)**, an overall pattern consisting of interwoven wire threads (Lenti 2006 and 2007), which is found in jewellery of the 1860s and 1870s made in Vercelli, Piedmont (Gandolfo and Lenti 2003). Netting is often used as the infill of large double-rosette heads of hairpins (fig. 97). Beads composed of netting are less common, but were occasionally used as pendants hanging from such hairpin heads.

Fig. 94.
Italian zigzag frame beads with detail varying by size. Bracelet, 800 standard silver, 1824–1872, Genoa, Italy, d: 1.2 to 1.8 cm, lion's head mark and French weevil import mark, 1519091, © author

Central band

In Europe in the sixteenth and seventeenth centuries, filigree beads were most commonly used in rosaries. These often included a decorative band round the centre which formed the join between the two hemispheres. This feature appears in beads from a necklace of the late sixteenth century, the 'Penicuik Jewels', which are said to have belonged to Mary, Queen of Scots (1542-1587), today in the National Museums Scotland, Edinburgh (NMS H.NA 421), and in rosaries from the treasuries of Onze-Lieve-Vrouw at Tongeren, Netherlands (Sterckshof 2011), St Rombouts cathedral at Mechelin, Netherlands (ibid.), the Cathedral at Kotor in Montenegro (from the church of the Madonna del Rosario, fig. 66 above), in some beads from the Skrwilno Treasure in Poland, and in a necklace buried with the Countess Palatine Amalia Hedwig of Pfalz-Neuburg in 1607 (Bayerisches Nationalmuseum, inv. no. T 4233) in which gold filigree beads alternate with agate beads and freshwater pearls. The filigree beads in a necklace from Norway, described by Riisøen (1959:24) as of late medieval origin (illustrated in Berge 1925, fig.124), also clearly have central bands, although the detail of the filigree infill itself is obscure.

By the eighteenth century, the central band survives in some rosary beads (Köln, Diözesanmuseum, 1975, fig. 39) but otherwise appears to be largely restricted to beads and buttons from Eastern Europe including Russia, and western Asia and North Africa. The hairpins made in northern Italy sometimes have a central band (fig. 92), but not the beads and buttons.

Fig. 95.
Hairpin head with zigzag frame, silver, late 19th century, Italy, d: 1.7 cm, French weevil import mark, 1005118, © author

Fig. 96.
Earring pendant with one-piece lobes and zigzag frame, silver-gilt, 20th century, Italy, d: 1.4 cm, ITALY and 800 marks, 1313018, © author

Fig. 97.
Netting. Hairpin head, silver, 1824–1872, Vercelli, Italy, d: 1.3 to 3.5 cm, lion's head mark, 1005362; (a) detail, © author

Fig. 98.
Coil ring appliqués on beads. Rosary, silver-gilt and coral, 18th century (medallion 1697), 52 x 4.5 x 1.6 cm, Germany, V&A 151-1872; (a) detail of beads, © Victoria and Albert Museum, London

Appliqués on beads

Appliqués of all kinds are comparatively rare on filigree beads. The addition of **coil rings** is largely limited to southern Germany[27] (figs. 98, 22a above) (Scherer 1971, tab. XXVII b; Köln, Diözesanmuseum, 1975, B112, figs. 47, 63) and some examples from Cortina d'Ampezzo (fig. 99); these may have been made in imitation of the German examples, from which they are almost indistinguishable.

Granules are more common as a feature in filigree beads, and have a much longer history. Examples occur in eleventh century Fatimid Egypt and Syria (see fig. 19 above) and on beads from the 1638 wreck of the 'Concepción',[28] (see fig. 6 above). After around 1700, they form an alternative to coil rings in southern Germany and Italy (fig. 100), and find a wider distribution in the neighbouring regions of Switzerland (Rusch 1974), the Dalmatian coast (see fig. 82c above, Vrtovec 1985:58), and further afield in Sardinia (fig. 44), the Levant (Cyprus, fig. 67 above; Syria, Abu Omar 1986), Yemen (Ransom 2014: 98, fig. 118), south-east Asia (Summerfield 1999), and Morocco.[29] Granules are a characteristic feature in Israeli Yemenite jewellery (figs. 42b, 46a-b above). Flattened granules, or discs, are found in Yemen (fig. 60 above),[30] but are more common in China (see fig. 18 above), and

Fig. 99.
Coil ring appliqués on beads. Necklace, silver, late 19th century, Cortina d'Ampezzo, Italy, (Arnaldo p.70), © Bandion.it

27 Scherer 1971, tab. XXVII b; Köln, Diözesanmuseum, 1975, B112, figs.47, 63.
28 Chadour, 1990, cat. no.45 BEAB.
29 Rouach 1989; Hasson 1987; Makilam and Kammere-Grothaus 2015.
30 Ransom 2014: 98, fig. 118.

south-east Asia, where the concept of filigree beads is thought to be of Turkish (Summerfield 1999) or European origin (Meng 1984). Some rosary beads from Weingarten in South Germany have granule appliqués arranged in rosettes (Chadour-Sampson 1999, figs. 15-16) as do some elaborate Yemeni beads (fig. 60 above), and Tatar buttons from the Caucasus (see fig. 50c above); however this feature is more typically found on beads from south-east Asia (Summerfield 1999).

Strips of beaded wire, running from the circumference to the ends between the lobes, are typical of Yemeni beads with various patterns of infill (figs. 46c, 60 above) (Ransom 2014: 46, fig. 37; Borel 1994:112). This feature also occurs on some nineteenth century Ethiopian filigree, for example a spherical knop on a crown presented to Queen Victoria in 1843 (Brus, 2011:184) and hairpins (fig. 101).

Fig. 100.
Granule appliqués on beads. Necklace, silver and glass, Cortina d'Ampezzo, Italy, © author

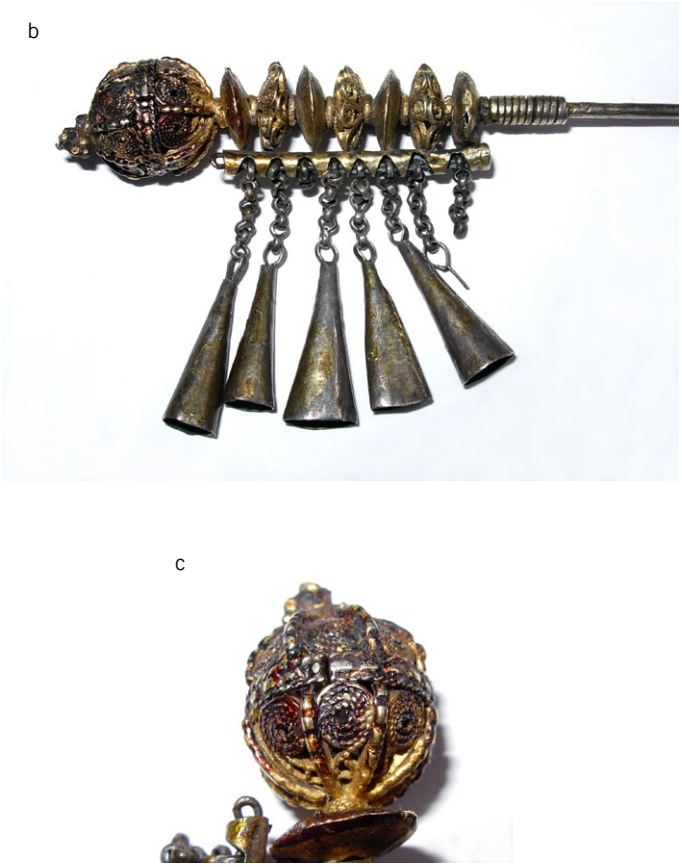

Fig. 101.
Hairpin heads with applied strips of beaded wire. (a) Silver-gilt, before 1868, Ethiopia, l: 21 cm, V&A M.444-1936, © Victoria and Albert Museum, London; (b) Silver-gilt, 19th century, Ethiopia, d: 1.4 cm (bead) 1415078; (c) detail, © author

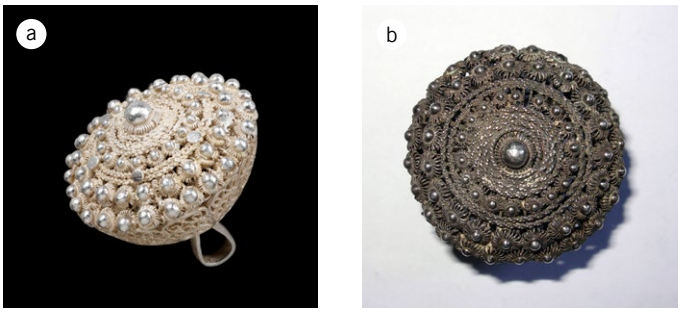

Fig. 102.
Buttons with circle of coil rings. (a) Silver, 1880, Altes Land, Germany, V&A 160-1883, © Victoria and Albert Museum, London; (b) Silver, 19th century, Altes Land, Germany, d: 3.5 cm, 1312162, (see also fig. 77b) © author

Fig. 103.
Hairpin head with circle of coil rings, silver and garnet, 19th century, south Germany, d: 2.2 cm, 1106033, © author

Fig. 104.
Dalmatian toggle button with circle of coil rings and granules, 750 standard silver, 1870–1919, lion's head 4 and M7 (Cattaro) marks, d: 2.1 cm, GV (maker's) mark, 1106137, © author

Appliqués on buttons

Appliqués are more common on buttons. Almost all filigree buttons have some kind of appliqué, if only the knop which forms the centrepiece of the front or top almost everywhere. Buttons with applied **coil rings** are characteristic of Germany, the Netherlands, the Balkans and south-east Asia. In Germany, especially in the Hamburg region (fig. 102) and Schwäbisch Gmünd (figs. 51c, 52 above), small coil rings are arranged in concentric circles on the front of buttons (see also fig. 109 below); as also on the heads of hairpins (fig. 103). On Dalmatian buttons, larger coil rings are interspersed with granules (figs. 104 and 47a). The coil rings on Dutch buttons fill the whole front of the button, along with circles of decorative wire (fig. 105a), as do those on south-east Asian buttons (fig. 105b-d). Modern Thai buttons (fig. 105e) have the same features and may derive from the same source, as mentioned above.

Coil rings also adorn elaborate hair pin tops from northern Italy (Cortina - Fröhlich 1980:32, Lombardy - fig. 78 above, Biella - fig. 56 above) and Dalmatia (Vrtovec 1985:24). A late twentieth-century example from Indonesia can be seen in fig. 86b above.

Similar to the observation on beads, granules on buttons are more widespread than coil rings, occurring mainly in Russia (fig. 106a), the Balkans (figs. 84c, 45a above, 106b), Spain (fig. 73 above), Malta (fig. 106c) and Italy (Genoa; fig. 70a, Sardinia; fig. 107). A late eighteenth century double-rosette button from Malta has faceted pyramidal granules (fig. 108).

Other appliqués include flat sheet-silver triangles, surrounding the knop in a star pattern, which are characteristic of buttons from the Altes Land in northern Germany (fig. 109a-b). Lozenge appliqués are comparatively rare, and usually found on half-rosette buttons (see fig. 10 above) and hairpin heads (fig. 110) from south Germany.

The occurrence of glass pastes and gems on the body of the sphere is most characteristic of Hungarian buttons (fig. 80a), but is sometimes also found on south German buttons, and south German (fig. 111) and Italian hairpins.[31]

31 Cortina – Fröhlich1980:10, Campagna - de Luca 1986, fig. 29.

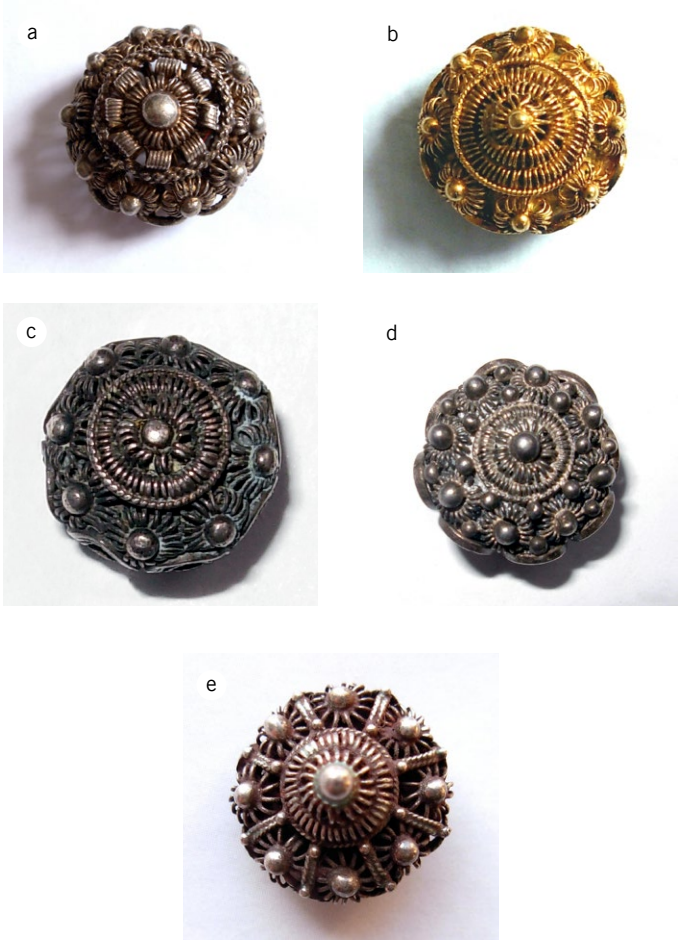

Fig. 105.
Dutch-type buttons with overall coil ring and decorative wire decoration on front. (a) Silver, second half 19th century, Netherlands, d: 3 cm, sword and illegible marks, 903283g (see also figs. 20, 72); (b) Gold, 19th-20th century, south-east Asia, d: 1.2 cm, 700344 (see also fig. 62a); (c) Silver, 19th century, south-east Asia, d: 1.1 cm, 904297 (see also fig. 62b); (d) Silver, 19th century, south-east Asia, d: 1.1 cm, 493083b (see also fig. 62c) (e) Silver, 20th century, Thailand, d: 1.3 cm, 1106016b (see also fig. 91), all © author

Fig. 106.
Buttons with applied granule decoration. (a) Silver, 18th century, Russia, 2 x 1.6 x 1.6 cm, inv. no. ОК 21766, © State Historical Museum, Moscow; (b) Toggle button, silver, 1933–1981, Yugoslavia, d: 1.6 cm, '900' and cockerel marks, 1107082, © author; (c) Toggle button, silver, 1775–1797, Malta, crowned R mark, d: 1.9 cm, 1418058 (see also fig. 71a), © author

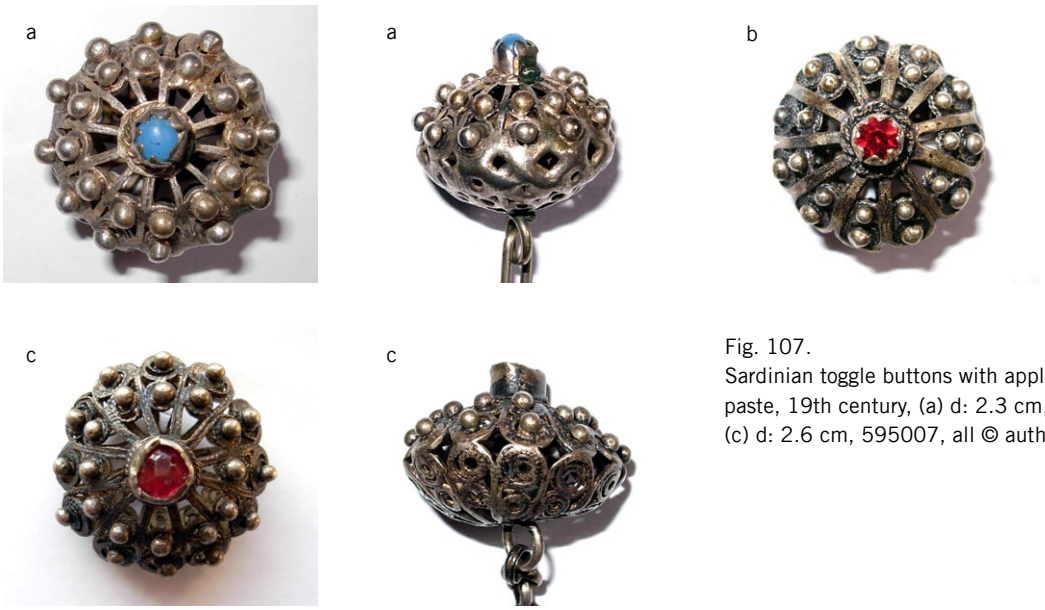

Fig. 107.
Sardinian toggle buttons with applied granule decoration, silver and paste, 19th century, (a) d: 2.3 cm, 1208136; (b) d: 2.4 cm, 1414110; (c) d: 2.6 cm, 595007, all © author

Fig. 108.
Button with faceted granule decoration, silver, 1775–1797, Malta, d: 1.8 cm, crowned R mark, 1312079d, © author

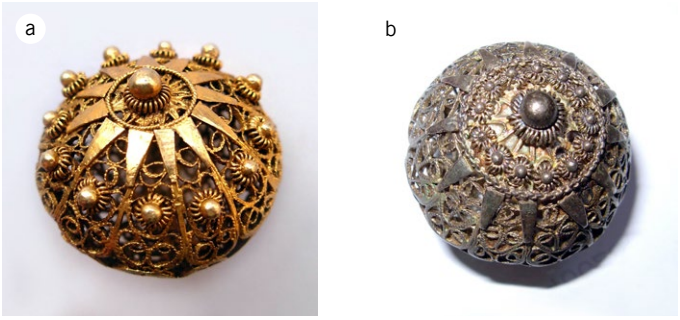

Fig. 109.
Buttons with applied 'star' decoration (a) Silver-gilt, 19th century, Altes Land, d: 2.6 cm, 1209239a; (b) Silver, 19th century, Altes Land, Germany, d: 2.5 cm, 1005376, (see also fig. 77a), both © author

Conclusion

In *Om Filigran*, overall still the best book I know on filigree, Riisøen et al (1959:108) conclude by saying 'that everything remains to be done where research on European filigree is concerned'. This remains true today for filigree as a whole, and perhaps even more so for filigree beads. There is very little archival or archaeological evidence to provide secure dating and provenance for early work, and filigree beads are even less likely to carry marks than other kinds of filigree object. This scarcity of firm documentary or physical evidence must inevitably lead to errors and omissions in this paper. Nevertheless, the tentative conclusions made here will hopefully encourage future research.

Filigree, of the kind described in this paper, developed in Europe during the sixteenth century under the influence of trade with the Indies. Filigree beads first occur in the late Middle Ages and are probably European in origin, derived from the rich heritage of rosary beads. Filigree buttons may have been made even earlier in eastern Europe. The two forms merge, together with musk balls and pomanders, to become almost indistinguishable. These open spheres were among the first objects to be made in filigree, and may have contributed to the development of the technique for other objects.

The motifs used as lobe infill are mainly determined by the shape of the frame, and are widespread both geographically and over time. Even so, there are some elements which are more limited in scope. In the earliest filigree double-rosette beads and other spherical objects, the only motifs used are combinations of loops and scrolls, often in a haphazard or random pattern. By the second half of the seventeenth century they had become more regular, and more intricate shapes appeared: S-scrolls, volutes and spirals. Tightly scrolled discs were introduced in the late eighteenth century, stretched spirals in the mid-nineteenth century. Decorative central bands, between the two halves, were routine everywhere in the sixteenth and early seventeenth centuries, but became largely restricted to eastern Europe, north Africa and Asia by the nineteenth century. By the second half of the twentieth century, few filigree workers continued to make filigree beads due to the increased cost of labour required. Beads from this period are either cast from earlier examples, or have much simpler infill motifs.

Untracht, referring to open filigree, wrote 'There is no other jewelry technique that uses such a minimum of metal material to achieve such a maximum of extraordinarily light form. The wire may be less than half of the actual surface of a form; the rest is air.' (1982:173). This elegant fantasy, that so charmed Europe in the second half of the seventeenth century, is produced everywhere with the most basic tools, leading to a superficial similarity between different workshops and different periods which has confused many jewellery historians. It is hoped that closer examination of the design elements may help to clarify identification.

Fig. 110.
Hairpin head with applied lozenge decoration, silver, late 19th–early 20th century, south Germany, d: 1.9 cm, 1417015, © author

Fig. 111.
Hairpin head with applied pastes, silver, 19th century, south Germany, d: 3.2 cm, 1520018, © author

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