

Metal-covered threads before 1600
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In the report on FoMRHI's 16th-century seminar, there is a passing reference to the use of metal-covered threads in embroidery, which seems to ante-date by a considerable time the use of covered strings on musical instruments. I have been asked to expand further this topic.

Gold embroidery in Britain dates back to at least the beginning of the 10th century; two pieces of church vestments of this date survive at Durham, and the workmanship is so skilled as to suggest that the craft was by then well-established. There is a sizeable stock of English embroidery from later Mediaeval periods, mainly the justly famous *Opus Anglicanum* of the late 13th and 14th centuries. This was for church use and makes lavish use of metal thread, usually gold but sometimes silver also. Similar work was produced in most European countries at this date, less fine in workmanship but using similar materials. Byzantium had its own tradition of gold embroidery; surviving specimens date from the 13th century to the Turkish conquest. There is also work in the same style from other Eastern European countries, where Byzantine styles lasted on into the 17th century. In Western Europe, particularly in England, there was a great expansion in the use of embroidered fabrics for dress and furnishing through the 16th century. It should be noted also that gold threads were used in woven fabrics, as part of brocade patterns on silks and velvets and to highlight designs on tapestries. This type of fabric seems to originate in Italy in the 14th century, and is also found Spain and France.

Two kinds of gold thread were used for these various fabrics: either a fine wire, or, very much more commonly, a very thin narrow strip wound round a core of silk. I have checked a number of specimens of embroidery and woven fabrics at the V&A. There is some difficulty in doing this as carefully as one would wish; most of the finest specimens are in cases in the mediaeval galleries, so that one cannot look very closely at them. The gallery is also rather ill-lit. In the textile study rooms one can take specimens out of their racks, although one is still working through glass. It is, however, quite easy to see that all of them show metal covered threads. A few also show the use of wire threads. The fabrics examined include: English embroideries of the 14th, 15th and late 16th centuries, Italian, French, Flemish, and Spanish embroideries of the 15th and 16th centuries, gold brocaded silk velvet from 15th-century Italy, Spanish silk damask with gold brocade of similar date, and a French 15th-century tapestry. The thickness of thread used has to be estimated rather than measured; it seems to range from about 1/50th to about 1/100th of an inch. On the whole, earlier threads tend to be finer than later, and English finer than Continental ones. However, the finest of all are those on the Italian velvets, about 1/120th of an inch. The metal covering is usually wound very closely and evenly round the core. It is clear that the makers had a high degree of control over the process, since threads are sometimes intentionally wound more loosely in order to vary the pattern by showing glimpses of silk cores of different colours.

I have not so far been able to find any information on where the threads were made. From the late 6th century, when silk production was established in Byzantium, that city maintained a strict monopoly. At first, this included both thread and finished fabric, but by the 12th century, thread was being exported to Italy and Spain to be woven there. Gold was more readily available. It was mined in both Eastern and Western Europe, and it was always customary to re-use metal from melted down coins or art objects. There was therefore little problem about the availability of raw material for gold-covered threads. One may guess that metal threads were first made in or around Byzantium and traded to the West, and that the manufacture later moved westwards also, but the guess would be difficult to confirm. Coming to the end of the period, we find one harder fact. There exists a letter from Mary Queen of Scots to the French Ambassador in London, asking him

to get for her, among other goods, "one pound of the thinner and double silver thread, which you will be able to get spun". It is not quite clear whether she expected it to come from London or Paris.

Threads used for embroidery need not have any very high tensile strength. They are not normally stitched through the fabric, which would involve a sharp tug for each stitch, but laid on it and attached by stitches in another thread. Threads wound on a shuttle and used for weaving would need to withstand rather more strain. It is also worth noting that in much Eastern European peasant work, admittedly of much later date, metal-covered threads are normally stitched through the rather coarse cotton fabric. Such threads are also sometimes used for bobbin-lace edgings on gloves of Tudor date, which would be under a fair tension in the working. Clearly, it is not possible to examine in detail the qualities of mediæval or renaissance thread, or to subject lengths of it to experiment. Since modern embroidery thread is very similar in superficial appearance to that of earlier date, it seemed worth trying some of it as a violin string. It could be tightened sufficiently to produce a note, and held its tension reasonably well. It has been left on the instrument, a Mexican folk fiddle, for some three months without noticeable deterioration.* It is a little rough for bowing, but the tone it produces is tolerable, and is better when plucked.

None of this provides any evidence that metal-covered strings were used on instruments much earlier than so far supposed. It does make it clear that the technology to produce such strings had been available for a very long time. It is perhaps worth noting that the 16th century saw a widespread fashion for embroidery as a domestic craft, whereas earlier work seems to have been done mainly in professional workshops or the seclusion of convents. It might therefore be suggested that metal-covered threads could then be more readily observed in use by other people, such as musicians. I must confess to being tempted by a picture of David Riccio replacing a broken guitar string with a thread from Mary Stuart's work basket; I gave it up, with regret, but perhaps some writer of romantic fiction would like to take up the idea.

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* The thread is still on the fiddle, still holding its tension, in September 2003. [And it still holding tension in January 2006. JM]