

## THE MANUFACTURE OF BEADED WIRE IN THE POST-ROMAN PERIOD

### *FABRICACIÓN DE HILOS TRABAJADOS EN EL PERIODO POST-ROMANO*

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Beaded wire, which originated in antiquity, consists of a round wire which has been mechanically altered to look like a row of minute beads. Two different types of tool seem to have been used to manufacture it in ancient times, both described by Theophilus in the 12<sup>th</sup> century AD: (i) A pair of opposed swage blocks to which a hammer is applied while the wire is rotated with the fingers; this is suited to thicker wire and is called an *organarium* by Theophilus. (ii) A hand-held rolling swage which may have a single cutting edge or, alternatively, one or more grooves flanked by cutting teeth; this is suited to fine wire and is called a beading 'file', '(*lima*)' by Theophilus. The latter is the more versatile tool, as it can be used to produce right-angled and spiral-beading. A further variation is that beaded wire and spiral-beaded wire may be hammered flat to produce a scalloped ribbon set on edge. Each type of tool produces characteristic manufacturing marks which can be identified under the microscope.

This paper reports the incidence of these various types of wire in Europe in the post-Roman period. It is based on examination of filigree dating from the 5<sup>th</sup> to 12<sup>th</sup> centuries in museums in the USA and Europe (in Ireland, Britain, Scandinavia, Italy and France), although only the Irish *corpus* has been examined in full. The author has not yet had the opportunity to examine Spanish filigree of this period at first-hand.

Beaded wire produced by the *organarium* seems to be the later technique. There is evidence of its use in the late Roman period and also in Byzantium in the 6<sup>th</sup> to 7<sup>th</sup> centuries AD. It has also been found on Lombardic work from Italy dating to the period of Byzantine influence. The survey found less evidence for the technique thereafter, but it has been reported by Duczko on Viking-age filigree and has also been reported on 12<sup>th</sup>-century work from Germany.

Right-angled beaded wire formed by a beading 'file' appears to be almost universal, although an ungrooved swage with a single cutting edge appears to have been rarely used. It is the most common form of beaded wire on much Western European filigree of the 5<sup>th</sup> to 9<sup>th</sup> centuries. There is clear evidence of a tool with a single groove flanked by two teeth (Theophilus's '*lima inferius fossa*') on filigree from Ireland to Byzantium, but tools with more than one groove were difficult to identify.

However, spiral-beaded wire appears to be the most popular form of beaded wire used on late 6<sup>th</sup> to 7<sup>th</sup>-century Lombardic and Merovingian filigree. Spiral-beaded wire also occurs, alongside wire beaded at right-angles, on Viking-age filigree.

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Flattened beaded wire seems to have yet another distribution. Just two examples were found on Lombardic work, but more was found Celtic filigree dating to the late 7<sup>th</sup> to 9<sup>th</sup>-centuries. From the 9<sup>th</sup> century onwards it seems to replace right-angled beaded wire as the most popular form of beaded wire in many parts of Europe.

This paper aims to make a start in identifying changes in fashion in this, the most common form of ornamental wire on European filigree of the post-Roman period. However beaded wire cannot be looked at in isolation and needs to be considered in the context of the history of metalwork generally and broad cultural changes across Europe.