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# A new type of semi-product with a rolled extremity in Ile-de-France (France)

## *Typological, metallographic and provenance study*

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In recent years, 3 deposits of semi-products with rolled extremity have been excavated by the Institut National de Recherche Archéologique Préventive (Inrap) in Ile-de-France and studied by the LAPA-NIMBE and LMC-IRAMAT. Six bars have been discovered and their morphological resemblances and exclusive localization in Ile-de-France suggest a possible local origin (Giorgi, 2016; Quenez, 2016; Rosenberger et al., 2010).

They are characterized by a U-shaped socket, a rectangular cross section at the socket / bar transition and a square cross section in the center of the bar. The distal end become thinner while keeping the back straight and its extremity get rounded.

Archaeometric (metallographic and chemical) analyzes were carried out on 4 of these bars. All the analyzes developed within the LMC-IRAMAT and the LAPA-NIMBE for several years (Bauvais et al., 2017; Disser et al., 2016; Leroy et al., 2012) made it possible to compare the manufacturing techniques, the composition of the alloys and the chemical signatures contained in the slag inclusions.

It thus appears that the shaping techniques are surprisingly close for the four bars with the presence of a systematic homogenization kneading and the installation of multiple transverse welds.

However, chemical analysis of the slag inclusions contained in the metal suggest that the bars were produced with different metal origins.

Finally, the signatures of the 4 bars were confronted with the different production spaces known in Ile-de-France in order to verify the hypothesis of a local production.

### **Reference:**

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