

The earliest evidence of Acheulian occupation in Northwest Europe: rediscovery of the *Moulin Quignon* site, Somme valley, France

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Abstract

The dispersal of hominin groups with an Acheulian technology and associated bifacial tools into northern latitudes is central to the debate over the timing of the oldest human occupation of NW Europe. The recent rediscovery of *in situ* archaeological lithic artefacts on the historic site of *Abbeville - Moulin Quignon* demonstrates that the first Acheulian occupation north of 50°N occurred at least 650 ka ago. This archaeological assemblage was discovered in 2017 into a fluvial sequence of sands and gravels overlying the chalk bedrock at a relative height of 40 m above the present-day maximal incision of the present-day River (Formation VII of the Somme stepped terraces system), at the exact place of the quarry excavated in the 19th century by Jacques Boucher de Perthes. These deposits have been dated using the ESR-quartz method to 672± 54 ka and can be allocated to early MIS 16 glacial period,, in good accordance with their stratigraphic position regarding to the subsequent Interglacial deposits of the Carpentier Quarry *Marne Blanche* (MIS 15) making the upper stratigraphic unit of the Somme system Formation VII in Abbeville.

More than 260 flint artefacts were recovered, including large flakes, cores and five bifaces. The corpus of bifaces is composed of a crudely-made tool and largely shaped tools indicating the management of the bifacial volume of the piece. The technological behaviour enters into what we observe on pene-contemporaneous sites located in the Southern part of Europe (la Noira, France; Notarchirico, Italy).

This discovery pushes back the age of the oldest Acheulian occupation of north-western Europe by more than 100 ka and bridges the gap between the archaeological records of northern France, England and Southern Europe. It also challenges hominin dispersal models in Europe showing that hominins using bifacial technology, such as *Homo heidelbergensis*, were probably able to overcome cold climate conditions as early as 650 ka ago and reasserts the importance of the Somme valley, where the 19th century allowed crystallizing knowledge coming from different scientific fields in France and UK.