

to define in detail the life cycles of the analysed specimens, and provide direct (organic and inorganic residues) evidence related to the use of stone tools at Qesem Cave during the Middle Pleistocene. Through the application of such methodological framework, we can reconstruct the different activities performed, along with the materials processed through the exploitation of both scrapers and recycled items, providing innovative and detailed data about the behaviours characterising the early human groups occupying the site between 400.000 and 200.000 years ago.

Searching for early traces of fire production on flint tools

Andrew Sorensen

*Leiden University, Faculty of
Archaeology, the Netherlands
a.c.sorensen@arch.leidenuniv.nl*

Veerle Rots

Two primary fire production methods are known from antiquity: wood-on-wood friction and stone-on-stone percussion. The more durable elements of the latter system (i.e. flint and pyrite/marcasite, aka sulphuric iron) are more likely to preserve in archaeological contexts. Yet, known evidence of fire making using flint “strike-a-lights” and sulphuric iron drops off

precipitously the further back in the archaeological record one looks, especially as one enters the Palaeolithic. This is most true for the Middle Palaeolithic (and earlier), when evidence of artificial fire making is virtually unknown, though often assumed due to the regular presence of fire traces on Neandertal sites. Is this paucity of fire making tools attributable to an inability to make fire, taphonomic bias, or perhaps technological variability? We propose it is the latter via the “expedient strike-a-light model”, which asserts early fire-making tools were likely used on an ad hoc basis for only a short period of time prior to being discarded. This stands in stark contrast to the more “classic” curated strike-a-lights recovered from Neolithic and Bronze Age contexts that show very heavy use traces, indicative of multiple episodes of use. To lend credence to this model, we look to an atypical Levallois point from the Middle Palaeolithic (MIS 5) site of Bettencourt (northern France), which is the oldest known tool described in the literature as bearing fire-making traces (after undergoing modern microwear analysis). Until now, systematic testing of the veracity of the interpretation of the Bettencourt piece as a strike-a-light against experimental data has not been performed. Our data show that the use traces observed on the Bettencourt piece can be closely replicated experimentally, both macro- and microscopically, by striking the lateral edge of an elongated flake against a sulphuric iron nodular fragment to produce sparks.