



Book Reviews

STAR CARR VOLUME 1: A PERSISTENT PLACE IN A CHANGING WORLD BY NICKY MILNER, CHANTAL CONNELLER AND BARRY TAYLOR

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STAR CARR VOLUME 2: STUDIES IN TECHNOLOGY, SUBSISTENCE AND ENVIRONMENT BY NICKY MILNER, CHANTAL CONNELLER AND BARRY TAYLOR

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Star Carr is one of those iconic type sites that we all know, or think we know. Graham Clark's ground-breaking excavations of the late 1940s and early 1950s, after the site's discovery by John Moore, provided new insights into Mesolithic life, some aspects of which are still being debated and discussed today. Clark's excavations revealed what he subsequently interpreted as a brushwood living platform associated with rich assemblages of artefacts including the antler frontlets that the site is so famous for, as well as barbed points, other pieces of worked bone and antler, worked flint and faunal remains. These discoveries influenced Mesolithic studies in Britain and the site is rightly described as one of the most important of its date in Europe. So, it was with great enthusiasm that I opened these two volumes on the excavations undertaken by the Star Carr project team between 2003 and 2015. They did not disappoint.

Work within the Vale of Pickering from the 1970s onwards by Tim Schadla-Hall, firstly with the Seamer Carr Project and then the Vale of Pickering Research Trust, enabled Clark's findings to be put into their wider context and also showed that Star Carr was not a typical site, rather it seems to have been a special place in the landscape. Small-scale excavations in the 1980s demonstrated that Mesolithic activity was much more extensive than Clark had originally thought, extending across both the wetland and dryland areas. The opportunity to acquire new data, particularly stratigraphic and environmental, as well as developments in radiocarbon dating using Bayesian modelling provided exciting potential.

Thus, a multi-disciplinary team embarked on new small-scale investigations to answer several research questions, which aimed to characterise the nature and extent of the dryland deposits and their chronological range. However, it soon became clear that the site was actually being

threatened due to degradation of the wetland deposits, and seasons of larger open-area excavations ensued to excavate the site in its entirety in order to recover as much information as possible before the site's inevitable destruction. In addition to the extensive radiocarbon dating programme, wider landscape studies were undertaken to investigate Lake Flixton – the name given to the ancient lake. This work was initially funded by English Heritage (now Historic England), the British Academy, the Natural Environment Research Council and the Vale of Pickering Research Trust, with a second phase funded by the European Research Council (the POSTGLACIAL project) and Historic England.

Volume 1 is divided into six parts (Introduction; Climate and Environment; Spatial Patterning; Interpretation; Star Carr inside and outside Mesolithic Europe and Conclusions) and into 14 chapters covering the history of the site, fieldwork, various specialist topics (lithics, wood, animal bone), and chapters putting the site in its local and international setting. Volume 2 presents the detail that underpins Volume 1. Helpfully the second volume contains an introductory section which repeats the necessary site plans and trench information from Volume 1; each volume has its own bibliography. Thus, each volume stands alone and can be purchased separately.

In Part 1 of Volume 1 the scene is set with a detailed introduction outlining previous excavations and how the Star Carr team's work relates to those earlier investigations, and the reasons behind the return to site. This is admirably demonstrated by a photograph showing how peat shrinkage is threatening the site – a field that was flat in the 1980s now slopes (Fig. 1.3). Following the introduction is a detailed history of the site from its initial discovery by John Moore to Graham Clark and the Vale of Pickering Research Trust excavations; archive photographs and quotes from Clark are evocative and create a real link with the past. Reinterpretation of this archive material runs through the whole volume. The final chapter in this section details the investigations which comprised fieldwalking, auger survey and excavation. A reflexive approach was adopted enabling the excavation strategy to develop and evolve from one season to the next. Clearly the excavation team and the specialists worked extremely closely allowing initial results to be fed back into the overall strategy for the site.

Although traditional excavation methods were employed, the reflexive approach and support and advice from Historic England/English Heritage, advisory board members, numerous specialists and colleagues have resulted in a wealth of new information being recovered, interpreted and presented in these two volumes. Modern surveying techniques and the use of GIS has enabled spatial patterns to be interrogated, teasing out the maximum information from relatively modest excavations (the new work has shown that Star Carr covers an area of approximately 19,000 m² of which all investigations have examined around only 10% (p.36).

This leaves open the exciting possibility that different areas of occupation and use remain within the wider site.

Chapter 4 details the climate and environment putting the site into its context. This relatively short chapter is accessible and clearly written making full use of maps, diagrams and photographs of contemporary vegetation to illustrate what Star Carr and its immediate environment would have looked like. A high point of the chapter is an excellent reconstruction of the landscape accessed through a QR code reader or a weblink. This fly-through is an evocative and thought-provoking piece which really brings the archaeology to life. This clever use of a different medium will surely appeal to a wider audience than more traditional methods of dissemination.

In Part 3 (Spatial patterning) the ‘meat’ of the volume is presented with chapters on the wetland and dryland structures, animal remains and an examination of the spatial distribution of worked flint. Each of these chapters presents the detailed archaeological evidence supported by just the right level of specialist analysis.

At least four structures on the dryland site were identified comprising postholes, stakeholes, hollows and other features. The ephemeral nature of these dryland structures reminds us but for the preservational circumstances of the site our knowledge of this period would be much poorer. Indeed, these are the earliest known built structures in the Mesolithic period and indicate a certain level of permanence which challenges the accepted view of society at this time.

Star Carr is famous for its wooden structures, the origins of which have been much debated – man-made structures, lakeside accumulation of driftwood or the product of beavers – and the recent excavations have shed further light on them and confirmed their human origin. Just over 4500 pieces of waterlogged wood were recovered, of which 1602 are worked. This is a truly remarkable assemblage being the earliest and largest from the UK with whole trees to small woodchips, and everything in between being recovered. The assemblage has been divided into six analytical groups (brushwood area; detrital wood scatter; central platform; eastern platform; western platform; Clark’s area); everything else being assigned to an ‘other’ category. Items were also assigned analytical categories (artefacts; timber; roundwood; root; debris), some categories being further subdivided. The approach aims to be as objective as possible during the recording process and has been developed over many years by one of the country’s leading wood specialists. Detailed technological analysis and examination of spatial distributions of this material has revealed a wealth of information illuminating so many aspects of the lives of the Mesolithic community who lived at Star Carr. Artefacts include a bow, digging sticks, vessels/containers, stakes, a wedge, ad-hoc tools and a decorated piece. Numerous replication

experiments add a further level of understanding of this material, the details of which are further explored in Volume 2.

Of course, one cannot think of Star Carr without picturing those iconic antler frontlets, however, the faunal assemblage is so much more than just those extraordinary objects. The faunal remains had previously been used to determine the season of occupation and the size of the population at Star Carr. However, Clark did not keep all of the material, some was deposited in the backfill on site, and the bone that was kept was dispersed to various museums, making re-examination and reinterpretation more difficult. Additionally, spatial information was not recorded in the earlier excavation. The original analysis made some pretty wide-ranging assumptions and it is now clear that Clark's material reflects activities in a specific area at a specific point in time. Thus, the assemblage recovered from the recent excavations have enabled Clark's material to be reinterpreted and have provided the spatial information that was previously lacking.

The new material has added four new species to the dataset, and it appears that animals were killed year-round. Evidence for the butchery and processing of animals, including red deer, elk, aurochs, was found; some of this material was then deposited at the edge of the lake. Much of this activity reflects the processing of carcasses for meat and craft activities including bone and antler working. However, there is evidence for practices that do not simply reflect the reduction of animals for eating or using other parts for various craft activities. Of course, the epitome of this is the series of antler frontlets, representing ritual activities but whole animals or parts of animal appear to have been 'reassembled' and deposited in the lake or at its edge.

A detailed analysis of flint distribution and use is presented in Chapter 8 Making Space through Stone. The large area excavated has produced an exceptional lithic assemblage of just under 25,000 pieces. Changes in both fieldwork and lithic analyses since the first excavation at the site have provided new ways of looking at material, and other techniques and innovations have produced results that literally bring the stones to life. The size of the excavations has enabled the debris from the relatively long occupation to be teased out and understood. This simply would not have been possible if smaller areas had been excavated. Refitting and usewear analyses have revealed details of individual knapping episodes and have provided information about the uses to which the flints were put, which in turn has aided the interpretation of the occupation and activity zones.

The final three parts of the volume (Interpretation, Europe, Conclusions, Chapters 9 to 14) put the findings into a wider context. The scale of the excavations and the resultant datasets and assemblages have enabled a history of occupation, which spanned some 800 years, to be

established. Critical here is the extensive radiocarbon dating programme and Bayesian modelling which has enabled the nuances of the chronology to be established. This detailed analysis has revealed differences in activity areas and changes in focus from wetland to dryland.

This section of the monograph showcases some of the reconstruction and experimental work which has been undertaken in order to get closer to the people who inhabited Star Carr and understand their world. The complexity and intensity of occupation has been ably demonstrated by the excavations, the dating programme and the various specialist analyses. However, for me some of the most fascinating insights come from the replication work which has provided technological information and a better understanding of how tools were produced, used and discarded. An exploration of how the red deer skull 'masks' were made and used is particularly insightful. Setting Star Carr within its British and European context provide important and very timely reviews which will be of interest to students, specialists and researchers. Much more on the replication work can be found in Volume 2.

The detailed specialist reports are presented in Volume 2, which is divided into six parts (Fieldwork; Climate, Environment and Dating; Sediments; Animals; Vegetable and Mineral). Preceding these is a short section providing the necessary site information, key plans and details on radiocarbon calibrations. This volume covers the immense amount of detail that has been teased out of the new artefacts, sediments and environmental remains recovered from the investigations. It begins with various methodologies, moving on to climate, environment and dating. Artefactual and ecofacts are presented in parts paying homage to Clark's 1954 publication (animal, vegetable and mineral), and range from the expected – worked flint and stone and animal bone – to the more unusual finds such as fungi.

The chapters on fieldwork and geophysical survey provide details of methods used and start by setting out the aims and objectives of the project. Selective methodologies are also presented, although much supporting data is available on the Archaeology Data Service (ADS) (project designs, assessment reports and specialist reports – <https://doi.org/10.5284/1041580>). What's clear is that whilst standard methods were employed throughout, the integration of specialists on site with post-excavation analyses being undertaken in an on-site laboratory allowed results to be very quickly fed back to the field team. This reflexive approach has clearly worked exceptionally well and there is much to learn from it. The difficulties of traditional geophysical survey methods in detecting ephemeral traces left by hunter-gatherer communities is examined. Despite the difficulties of interpretation associated with sites of this date, the use of geophysical survey as part of a wider landscape approach and used in conjunction with other techniques has some merit.

The extensive radiocarbon dating programme (Chapter 17, 223 radiocarbon dates including 76 from previous investigations) has been at the heart of the analyses – the key question of chronology running through all of the work at Star Carr. Fundamental questions include what time of year was the site occupied and when was it occupied? The radiocarbon dating programme was not without challenges given the degraded nature of many of the organic finds. Thus, the resolution that has been achieved is of real significance not only for the site of Star Carr but of the British Mesolithic as a whole. The results of the dating programme have shown that the position is much more complex than originally believed, with an occupation span of over 800 years. There is much detail here for the specialist, which although somewhat dense for the general reader, does provide fascinating details by drawing out the chronology. The numbers of dates obtained, many on short-life, single entity samples (p.83), greatly adds to the database for the British Mesolithic. Although of immense importance the 26 pages of code defining the chronological model could perhaps have been made available via a QR code to a digital OxCal file on the ADS rather than in the printed book.

A number of relatively short chapters explore the landscape setting of site using a variety of techniques and methods. Information on local climatic conditions (Chapter 18) uses a range of palaeoenvironmental indicators – such as chironomid remains and isotopic analysis of lake carbonates – and pollen analysis for comparison to infer summer temperatures (p.116). Detailed palaeoenvironmental analyses are presented in Chapter 19; these complement the body of work already undertaken on environmental material from the earliest examination of the site (p.123).

In Chapter 22 the rather alarming details of the deterioration of deposits and loss of organic artefacts is presented. The noticeable deterioration of the deposits during the project in comparison with the results of Clark's excavations makes sobering reading. However, important lessons have been learnt which can be used to better protect other waterlogged sites.

Animals were so central to the occupation at Star Carr and it is no surprise that nearly 150 pages of Volume 2 are given over to the animal remains (Chapter 23), osseous technology (Chapter 24), barbed points (Chapter 25), antler frontlets (Chapter 26), and animals in a wider context (Chapter 27). This section of the volume moves from a detailed examination of the animal bone assemblage, comparing the results with previous investigations, to studies of the bone and antler artefacts. The detailed examination of these artefacts will provide a benchmark for future studies. Underpinning these analyses are extensive experiments to recreate artefacts and processes, some of which are available via QR codes as videos. In my view this experimental work is one of the great aspects of these publications and using a variety of media these are presented alongside the archaeological evidence. As noted above, the animal bone

analyses have provided new information on the composition of the faunal assemblage, the type of site and the question of seasonality.

Part 11, Vegetable, covers woodworking technology (Chapter 28), wooden artefacts (Chapter 29), birch bark (Chapter 30), fungi (Chapter 31) and palaeoethnobotanical evidence (Chapter 32). Each one of these chapters provides new insights and information (the many uses of fungi or birch bark, for example), which on a dry site would simply not survive, enriching our understanding of the hunter gatherer way of life. Experimental and replication work explore ancient craftsmanship putting back the human element into the site.

The final section (Part 12 Mineral) covers beads and pendant (Chapter 33), stones (Chapter 34) and worked flint (Chapter 35). Detailed examination of the beads and unique pendant from the recent excavations and those objects from Clark's trenches that could be traced together with much replication work and scientific techniques has shown how the objects were made and puts forward ideas of how they were used and deposited.

Given the nature of the deposits all stones will have been brought on to the site, and indeed nearly 600 were recovered. In Chapter 34, 295 stones from the 2013 and 2014 excavations have been analysed in detail. Such close scrutiny, albeit of only part of the assemblage, is very welcome as this category of material is under-researched and a wider review is somewhat overdue (p.490). Needless to say, this diverse group of objects reflect a wide variety of tasks including use as hammerstones, for working wood, antler or bone, and use in cooking. Again, replication experiments have shed much light on this understudied category of material and the close-up photographs of damage will be of particular use to researchers.

Unlike the stones examined in the previous chapter, worked flint (Chapter 35) is ubiquitous and well-studied. However, the size and nature of the assemblage and its particular preservational history at Star Carr has enabled further insights to be made. Detailed analysis, establishing 'life histories' of certain objects brings insights such as resharpener of axes after use so that they were maintained for their next task (p.533). This brings us closer to organisation and mindset of the Mesolithic inhabitants of the site.

These two volumes represent a huge body of data – Volume 1 is just under 400 pages and Volume 2 almost 600 pages. Congratulations are therefore in order for the prompt publication, even more impressive when the final field season was only undertaken in 2015. It takes drive and dedication to pull large multi-disciplinary projects to fruition. The stats speak for themselves as I write this review Volume 1 has been downloaded 6456 times with 1026 views and Volume 2 has 5854 downloads and 455 views. In line with some other publishers White Rose University

Press have chosen to make these volumes free to download and operate on a print on demand basis, aiming to deliver printed volumes in 10 working days.

These volumes are excellently produced with numerous colour photographs and line drawings. In particular, the reflectance transformation images (RTI) are to be commended. There are frequent reminders of Clark's work from the reproduced quotations and photographs from the original publication, which tie the old excavations into the new project. Although a few criticisms include the lack of consistency with scales in some drawings and the presentation of the text in a single column can be somewhat dense. Table captions are slightly curiously positioned at the end of the table, which means flipping forwards for those tables covering several pages. Whilst the QR codes do provide access to some really interesting and important work (the fly-through Volume 1 and the antler frontlets replication, Volume 2), I found the four reconstructions (Vol 1, pages 233, 235, 237, 239) very similar, a commentary over them would have been an excellent addition. I could not get the QR code on page 329 (Vol 2) to work at all, although it is accessible via the Volume 2 download. However, these are minor points.

In addition to these two handsome volumes the project has also generated numerous articles on aspects of the site (High *et al.* 2016) or important finds such as the Mesolithic pendant (Milner *et al.* 2016), and experimental work (e.g. Little *et al.* 2016) (see ADS for a detailed bibliography of not only publications generated by the project but other work on Star Carr https://archaeologydataservice.ac.uk/archives/view/postglacial_2013/publications.cfm). A more accessible book was produced in 2013 (Milner *et al.* 2013) which brings the story of Star Carr to a different audience (see Cobb 2013 for a review of this book).

The volumes are full of superlatives: the earliest evidence for Mesolithic carpentry; the earliest form of Mesolithic art in the form of a shale pendant; the earliest built structures. Underpinning these publications is the impeccable fieldwork, excellent analysis and replication work which has so enriched our understanding of this particular site, but also of the Mesolithic period. Other researchers should be inspired by this project and its prompt publication.

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