

Review of: Parker Pearson, M., Sheridan, A., Jay, M., Chamberlain, A., Richards, M. P. & Evans, J. (2019). *The Beaker People. Isotopes, mobility and diet in prehistoric Britain. (Prehistoric Society Research Paper, 7)*. Oxford: Oxbow Books. Hardcover, 590 p. ix-xxv., 230 figures and 82 Tables, Appendix 1-6 with 4 figures and 2 tables. Appendix 7-10 online available at https://books.casematepublishing.com/The_Beaker_People_isotopes_mobility_and_diet_in_prehistoric_Britain.pdf. Hardcover ISBN 978-1-78925-064-0; epub ISBN 978-1-78925-065-7.

Heide Wrobel Nørgaard

With the publication of *Beaker People*, Mike Parker Pearson, Alison Sheridan, Many Jay, Andrew Chamberlain, Michael Richards and Jane Evans produced a volume which could become the ultimate reference regarding the Beaker Culture, both in Britain and beyond. *The Beaker People – Isotopes, mobility and diet in prehistoric Britain* is the capstone of the Arts and Humanities Research Council-funded *Beaker People Project* (BPP) led by Parker Pearson. In close cooperation with the Leverhulme-funded *Beakers and Bodies Project* (B&BP) by Neil Curtis, it presents a nearly complete overview of the material culture, radiocarbon dates, osteological investigations, dental microwear and isotopic analyses of carbon, nitrogen, sulphur, strontium and oxygen which have been done on material from this important period in European history in Britain to date. The long period between the initial foundation of the project and the final publication (2006-2019) further allowed for the inclusion of the latest aDNA studies on the Beaker People, thereby making the tome even more comprehensive in scope.

In May 2002, the now-famous Amesbury archer was excavated in a dramatic overnight excavation by the light of car headlights (see GILBERT ET AL., 2002). The discovery of this wonderful grave was the inspiration for *The Beaker People Project* (BBP), as the analysis of the individual indicated Central European origins, thereby sparking questions about the origins of the Beaker package. The examination of this theme has been the common thread throughout the *Beaker People Project*. The volume presented here aims to answer questions that focus primarily on mobility, diet and change from the Neolithic to the Early Bronze Age in Britain within its twelve chapters. By presenting past research and integrating it with discussions of material culture, human remains and the evaluation of new scientific results, it also represents

an excellent contribution to the field of archaeological science.

The book could be divided into three topical sections; chapters 1-5 address the archaeological record, chapters 6-7 concentrate on biological and osteological examinations of the human remains, and chapters 8-11 present and evaluate the isotopic investigations carried out within the *Beaker People Project*. Finally, chapter 12 synthesises these results.

The analysis of the archaeological record begins with an extensive discussion of the research history of the Beaker Culture. The detailed description of historical debate includes an account of the process by which the “*Beakers*” were given their name by John Abercromby at the start of the 20th century as well as various theoretical approaches to the Beaker phenomenon. The first part of chapter 1, *Introduction*, presents past discussions, such as that between the cultural-historical and invasionist methodologies that grouped Neolithic and Beaker societies in Britain based on craniological studies; this provides the reader with the necessary background knowledge for subsequent reading. Several maps and typological figures illustrate the rich research history of the European Beaker Culture, highlighting the focus on mobility throughout both historical and recent debate. The detailed description of investigations carried out on Beaker populations in the Netherlands, France, the Iberian Peninsula and Central and Northern Europe are supported by scientific analyses which provide an overview of most recent research results. The second part of the introduction focusses particularly on the British Beaker phenomenon. The characteristics which define what the “*Beaker package*” actually is are effectively summarised and explained: a new pottery style, the arrival of copper and gold objects, a new funeral tradition with gender differentiation, the display of status, the display of specific identities (e.g. warriors) and the appearance of new fashions in ornaments, tools and technologies. Finally, the authors present the data and methodologies used within the *Beaker People Project*. Seventeen maps and detailed descriptions of individuals, their contexts and associated material culture are included in appendices 1-5, and provide an in-depth insight into the project.

As chapter 1 already presented selected radiocarbon dates for the European Beaker Culture, chapter 2 included 196 new radiocarbon dates from 191 individuals within the Beaker People Project databases. The dates are published on 16 pages within chapter 2 as well as within an area

database in appendix 6. Mandy Jay, Michael P. Richards and Peter Marshall present a structured overview of this large amount of data. The latter was responsible for the Bayesian modelling of the dates. This extensive dating exercise resulted in an unexpected extension beyond the core period, defined between 2500-1500 BC (Chalcolithic and Early Bronze Age). Twelve individuals were found to be older than 2500 BC, and 16 individuals were dated significantly younger, such as the adult found near the House of the Binns (short cist burial) and the male adult from Gourdon (long cist) in Scotland which date from the medieval period. These last two burials highlight the importance of obtaining new scientific dates within a multi-isotope study. Both individuals were consumers of a marine diet (as is intensively discussed in chapters 8 and 9). Moreover, they represent the only such individuals in the entire database (see appendix 2); without these new radiocarbon dates, their inclusion would have changed the overall outcome of the project. The remaining 163 individuals dated within the core period of the project allowed for the definition of the first recorded use of beakers in Britain within a funerary context (!) to 2460-2330 cal BC. The last dated use of beakers appears to have been between 1805-1650 cal BC. Furthermore, the radiocarbon dates suggest that beakers may have been used earlier in Scottish funeral practices than they were in Wales.

Within chapter 3, *economy and society in Beaker-period Britain*, Mike Parker Pearson turns once again to the archaeological record. Based on the evaluation of Chalcolithic and Early Bronze Age settlements and material culture, the economic and social changes connected to the Beaker culture in Britain are illuminated. The thorough review of the state-of-the-art research allows for some interesting conclusions. For example, during the Beaker period, pork was largely replaced by beef and mutton consumption. In addition, extensive farming resulted in increased woodland clearance. In turn, this discovery enabled the authors to revise previous assumptions in which Beaker people were thought to have been restless nomads. Of particular importance is the presentation of a large number of Beaker period houses which revealed distinct differences from Late Neolithic house structures with regionally-specific construction styles. Major research questions raised within this chapter intersect with themes from the following chapters, such as the apparent gender imbalance in Beaker graves and their relation to mobility, the appearance of a warrior iden-

tity in connection to metal and social hierarchy and regionally-specific changes in ceramic styles and funerary practices. These changes in ceramic style and funerary practices are discussed in the subsequent chapter: *The Beaker People Project individuals, their funerary practices and their grave goods* (by Mike Parker Pearson, Stuart Needham and Alison Sheridan).

In this chapter, the burial context and grave goods of the 371 individuals studied by both the BPP and the B&BP are investigated in the light of the new radiocarbon dates. This enables detailed insights into the chronological and regional development of the Beaker culture from a funerary perspective. Despite local varieties – the investigation is separated into location groups defined by the project (chapter 1, page 32) – some general statements result from this well-illustrated analysis: 1) the earliest Beaker forms found in British graves correspond to Continental types; 2) contrary to former assumptions, cremation seems to have been the dominant burial practice in the late Neolithic, a changeover from the Middle Neolithic's more common practice of inhumation; 3) individual inhumation with gender differentiation is a rite connected to Continental Europe and appears to have been unrelated to indigenous Middle Neolithic practices from 2460-2330 cal BC; 4) Beaker users seem to have arrived in different parts in Britain from different European regions based on burial custom and aDNA data.

Furthermore, a refined model is presented, which illustrates the main development stages from the Chalcolithic to the Early Bronze Age in accordance with Needham's phases of Beaker use (ALLEN ET AL., 2012). The various grave goods which were catalogued (including the different Beaker vessel styles) are categorised and allocated to the periods 1-3 as defined in the text. Period 1 is described as the first appearance of Beaker People (2450-2200 BC), period 2 reflects the earliest Bronze Age (2200-1950 BC) and period 3 is described as the final phase of British Beaker use (1950-1750 BC). Descriptions of these burials (such as the Bush Barrow grave near Stonehenge) and tables and photographs of the described artefact categories allow for a detailed overview of current research in the light of the new scientific data gathered by the BPP.

Chapter 5, *beakers and bodies in north-east Scotland* (by Neil Curtis and Neil Wilkin) presents a study of burial practices in northeast Scotland during the period of interest. Although this chapter only addresses a small region, it evaluates 120 well-dated graves. The inclusion of the Lever-

hulme funded *B&BP* allows a unique glimpse into the short-cists burials of the Scottish Beaker period. Detailed information on burial construction (accompanied by several illustrations) and a typo-chronological context-oriented classification of the beakers in northeast Scotland supports the idea that the beaker 'style' should not be discussed on an international level but rather on a regional-, lineage- and gender-related level. This approach reveals a close connection between Beaker forms in the most northeastern district of Aberdeenshire, Scotland and Ireland's Food Vessel Bowls in the earliest Beaker period (see above). Supported by the appearance of a none-too-small amount of copper from the mines at Ross Island, the authors concur with previous conclusions regarding the relationship between northeast Scotland and Ireland; namely, that their ties to each other may have been more intense than those which they may have had with Continental Europe.

An interesting deviation from the evaluation of archaeological material culture is the osteological examination of the short-cist graves by Margaret Hutchison. The approach utilised (determining the position of the deceased by examining traces on bones left by exposure to erosion) appears promising, especially since many recent research projects depend on excavation reports alone. Unfortunately, while the author concluded that the post-cranial skeleton was unsuitable for such ends, the skull nonetheless seemed a viable means of assessment. The investigation was able to confirm deviating orientations of the skeletons along gender lines; many skeletons could be allocated a deposition side due to the marks of erosion on a specific side of the skull. Interestingly, it seems as if male burials followed this pattern more clearly than did female ones. In chapter 6, *aspects of human osteology and skeletal biology* (Chris Deter, Patrick Mahoney, Sarah Johns and Sandra Thomas), the buried body was once more brought in focus. The examination of the skeletal remains secured a reliable age and sex determination for the 201 individuals chosen for isotope analysis (17 individuals were subsequently sexed via aDNA analyses; OLALDE ET AL., 2018). Secondly, juvenile skeletons were investigated for stress and, thirdly, 41 skulls from the Peak District, central Britain, were subjected to a craniological study aimed at identifying whether assumptions about the different cranial shapes associated with indigenous people and Beaker immigrants could be confirmed. Of high interest here were critical reflections on previous research concerning craniometrics and the well-framed arguments stating the continued importance of such research today.

Given the latest aDNA studies on the Beaker population (see OLALDE ET AL., 2018), this chapter concludes that the significant changes in cranial shape during the fourth to third millennium might be related to both environmental and genetic factors. Furthermore, this study highlighted a few cases in which cranial shape was distorted to cradle-boarding or head-binding, which may have been related to the appearance of different social groups.

Dental studies, as well as skeletal studies, were executed on the BPP material in chapter 7, *dental microwear: 2D and 3D approaches* (by Partick Mahoney, Laura Chiu, Pia Nystrom, Chris Deter and Christopher Schmidt). In this chapter, the authors used scanning electron microscopy (SEM) and dental texture analysis (DTA) to define the quality of food consumed during the Chalcolithic and Early Bronze Age in Britain. Here, 64 individuals spread over the entire research area provided the material for the study. The analyses revealed regional differences in food habits. Dental microwear reflects the diet consumed by individuals several weeks before death (a knowledge gained while reading the very detailed and usefully-illustrated description of the procedure), general conclusions describe a more plant-based diet in the north in contrast to a harder diet based on seeds and nuts in the south.

The next three chapters concern the project's core activities: the multi-isotopic analyses. Chapter 8, *carbon and nitrogen isotopic analysis* (by Mandy Jay and Michael Richards) is the first in the series which gives a detailed description of the research question, reflections, methodology and the results of the individual analyses. Carbon and nitrogen isotopes inform about general diet. To be more precise, their study enables the determination of the sources of the proteins consumed. In addition to protein source, carbon and nitrogen values can also be influenced by climatic and environmental conditions. For this reason, the *BPP* included "baseline" animal data from other contemporary sites (see CRAIG ET AL., 2015). The results reveal that the 370 individuals investigated were mainly omnivorous, though they consumed a high level of animal protein. As mentioned previously, the only two individuals whose diets were mostly marine were radiocarbon dated to Britain's medieval period. For 234 of those individuals, both dentine and bone collagen were used for analysis, to compare values obtained during childhood with values obtained during adulthood, thereby revealing dietary changes over a single human lifespan. Of these individuals, several showed a distinct differ-

ence between the bone and dentine samples. Such divergences are interpreted as either indications of long-distance mobility or the consumption of different diets between childhood and adulthood. At first glance, these divergences are not interpreted as indicative for lifetime mobility between different regions within Britain, as the $\delta^{13}\text{C}$ values do not differ between regions across Britain. Another important aspect of the $\delta^{13}\text{C}$ values was the evidence for a chronological shift during the Bronze Age/Iron Age transition. The changes observed led the authors to posit the presence of a change in the consumption of domesticated herbivores. These analyses reach their full potential when they are aligned with the other isotope analyses. In this way, each chapter builds on and refers back to its predecessors as well as integrating other relevant studies. Chapter 9, *sulphur isotopic analysis*, (by Mandy Jay, Olaf Nehlich and Michael Richards) presents the results of a relatively new method. In connection with the carbon and nitrogen isotopes, it allows for greater precision regarding the kind of aquatic diet that was consumed. However, the sulphur isotopes are used differently in relation to this dataset. Due to the fact that none of the samples revealed marine diets (with the exceptions mentioned above), the $\delta^{34}\text{S}$ (the ratio of the stable isotopes ^{34}S and ^{32}S compared to a standard, namely meteoric troilite) was mainly used for the detection of regional mobility. In other words, as sulphur isotope ratios mirror the geological environment and are absorbed by humans through the food chain, they can be used as indicators of the biosphere in which an individual nourished him or herself. Aside from to geological differences that also affect the sulphur ratios in the water, a significant difference is known between marine-influenced waters and geologically-influenced waters (sea-spray versus terrestrial rainfall). Thus, for example, the effect of marine-sulphates on the $\delta^{34}\text{S}$ values in coastal regions is recognisable in the archaeological material, and would allow for the identification of mobility between coast and inland in the comparison of bone and dentine material.

Another example highlighted within the chapter is the difference in the sulphur ratios between the Devonian and Carboniferous bedrock in Scotland and the chalk in Yorkshire. The 175 individuals from whom the bone and dentine measurements were compared allowed for the detection of mobility between the British regions in unexpected amounts. The possible mobility of Chalcolithic and Early Bronze Age individuals is further discussed in chapter 10, *strontium isotopic analysis* (by Janet Montgomery, Jane Evans and Jacqueline

Towers). This chapter addressed analyses of the tooth enamel of 286 individuals from the BPP database as well as a further 25 individuals explicitly analysed for the study. The data presented here can be used without touching upon the recent debate regarding the possible influence modern agriculture might have on strontium data (FREI ET AL., 2019; THOMSEN & ANDREASEN, 2019), as 241 individuals (plus 13 individuals on the Hebrides) are buried within chalk or limestone, and additional fertilisation through the use of lime is only relevant for noncalcareous soils.

In contrast to previous chapters, chapter 10 does not detail the sources of the baseline used in the study, which would be useful for comparability (see LADEGAARD-PEDERSEN ET AL., 2020). The interpretation of these new data is nevertheless based on baselines established for Britain by various authors in the last decade (i.e. EVANS ET AL., 2010) which are both well-accepted and well-known in the research world. As strontium isotope ratios are becoming an increasingly common means of estimating mobility and the origins of archaeologically-relevant individuals, it is refreshing that this chapter so carefully lists the advantages and disadvantages of the method. Moreover, it also repeatedly points out that not affirmative but only exclusive statements can be made regarding the origin of the individuals under investigation. This same caution extends throughout the last chapters of the volume; conclusions are only drawn when supported by one (or more) other isotopic analyses. The results are well-illustrated and are accompanied by several graphs, tables and maps (plus Appendix 10 online available), which allow the reader to follow the evaluation of the data.

Correspondingly, statements about mobility regarding the strontium analyses are discussed together with the results presented in chapter 11, *oxygen isotopic analysis*, (by Maura Pekkegrini, Mandy Jay and Michael Richards). In this chapter, modern $\delta^{18}\text{O}$ values for environmental water obtained over the last 25 years were compared with the human enamel $\delta^{18}\text{O}$ values of the Chalcolithic and Early Bronze Age individuals investigated here based on the statement that the values do not change substantially throughout the Holocene. Therefore, $\delta^{18}\text{O}$ values vary across lines of longitude in Britain, allowing for the establishment of mean values for archaeological individuals (based on EVANS ET AL., 2012) which distinctively differ from east to west.

In summary, the strontium analysis revealed that a majority of individuals exhibited ratios mir-

roring the chalk and limestone sediments typical for central and southern England. Only a few individuals displayed unusually high ratios and strontium concentrations which could come from northern England or Scotland. Over and above the general statistical evaluation presented in the chapters, the in-depth comparison between location groups and strontium values disproved some of the team's expectations. Namely, it was expected that a) the majority of the English burials were consistent with the values for chalk and limestone sediments (chalk and limestone are the dominant sediments in England) and b) that the highest values measured were related to burials in Scotland. However, 78 of the 241 English burials lie within the group of the highest strontium ratios measured within this study, a group which particularly includes individuals buried in Yorkshire and the Peak District (this also includes those individuals for whom the results of cranial deformation were noted). Such high ratios are untypical for the limestone sediments of those regions. Another group that stands out due to its unusually high values is a collection of burials from the Wessex chalklands (including the Boscombe Bowman). All of the location groups (defined in chapter 1) are intensively discussed both in chapters 10 and 11, and specific individuals or burials are highlighted. For instance, the individuals from the Peak District (mentioned above) show strontium values which are very rare for Britain. However, their high oxygen values would exclude a possible origin in regions such as northern or eastern Scotland (where similar strontium values might be obtained). In addition, the cranial deformations present within the group are also atypical for contemporary British individuals. Thus, the first statements about the origin of some of the individuals buried in the Peak District suggest that they may indeed have been immigrants.

Chapter 12, *synthesis, discussion and conclusion* (by Mike Parker Pearson, Mandy Jay, Janet Montgomery, Alison Sheridan and Stuart Needham) seeks to estimate the degree of mobility in Chalcolithic and Early Bronze Age Britain through the volume's multi-isotope approach. A very detailed summary of each investigation described in the previous 11 chapters enables readers under time pressure to rapidly glean an accurate overview of the project's results. The authors clarify that the individuals analysed do not represent the entire Chalcolithic and Early Bronze Age population of Britain and that, due to the advantages and disadvantages of the methods they used, deviations from the numbers presented are likely. How-

ever, they are able to present a creditable and well-founded thesis on mobility pattern in the third to second millennium in Britain. Beaker people from different places in Continental Europe were buried (2470-2210 cal BC) at different places in Britain. However, the actual number of immigrants seems to be far less than was previously assumed. Cultural change in Britain, therefore, was not due to the removal of the indigenous population but was instead the result of genetic mixing and the adoption of cultural practices (including the use of bronze). The osteological studies further indicate that the immigrants and their offspring were not just genetically different, but that they also differed in physical appearance. The male buried at Bee Low, Peak District, is an example of an individual who practised long-distance mobility even in the earliest Bronze Age. He not only had high strontium and oxygen values but also exhibited variations in craniometrics that might indicate a different cultural affiliation or – an alternate scenario favoured by the authors – the use of cradle-boards, which would have allowed his mother to engage in greater mobility. Both the archaeological record and the scientific analyses presented in this book highlight the fact that Beaker immigrants were both male and female. The proposed scenario that might have led to the genetic turnover by 1500 BC in Britain (see OLALDE ET AL., 2018) includes small-scale movement from Continental Beaker immigrants over several centuries to Britain (seven individuals, including the Amesbury Archer) with active mobility within Britain of indigenous and genetically mixed individuals (around 41 % of the individuals investigated).

In conclusion, this book is a highly valuable contribution to archaeological science. It presents material culture studies side-by-side with natural scientific studies for a successful integration of both domains to create an understanding of the big picture. The richness of the details and the background information provided is impressive. Even if the extensive tables and data presentation make some chapters challenging to read, every researcher, student and lecturer should have the opportunity to broaden, continue, develop and/or deepen his/her knowledge while reading this book. One fact that becomes very clear while reading this volume is that books can do more than articles; they allow for the inclusion of background knowledge, they allow for well-aimed and relevant expansion and enable the reader to take part in the learning process. They do more than just inform. *The Beaker People. Isotopes, mobility and diet in prehistoric Britain* is an excellent example of the benefits of a book!

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Dr. Heide Wrobel Nørgaard
Department of Archaeology
Moesgaard Museum
Moesgaard Allé 15
8270 Højbjerg
Denmark

<https://orcid.org/0000-0002-9349-7516>