SIR GRAHAME CLARK: A PASSIONATE CONNOISSEUR OF FLINTS
(An Internalist Study of Clark's Early Publications)

by

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ABSTRACT

An internalist approach to Clark's early publications from 1927 to 1939 is used to examine his goals, methods, assumptions, definitions of archaeology, immediate academic influences, and intellectual change. Clark (1933h:232) defined archaeology as "the study of past distribution of culture-traits in time and space, and of the factors governing their distribution" and was especially astute when fulfilling the first part of this definition. His greatest early strength was his methodological exactness in creating typologies and chronologies based on the assumption that lithic and pottery forms evolved and can be arranged in chronological order by studying morphological changes. During his early career, Clark's primary goals were the establishment of relative dates for British assemblages and the definition of the Mesolithic as a unique period. He exhibited occasional difficulties when considering the factors which governed the distribution of cultures, and did not discuss diffusion in depth or detail. Clark used the term Mesolithic to indicate both a time period and a group of cultures.

Clark was a founding member of the interdisciplinary Fenland Research Committee, publishing with the Committee throughout the 1930s. During this association, his goals, typological methods, and definition of archaeology did not change. However, his methods broadened when he stressed the importance of excavating and promoted the study of wetland sites. His demonstration of the relevance to British archaeology of natural scientific techniques, such as pollen and faunal analysis, was a major contribution.

Clark's greatest strength was his ability to synthesize several independent lines of evidence forcefully and to demonstrate how information from varied sources converged to support a conclusion. When classifying an artifact, he studied morphology, function, type of material, patination, techniques of manufacture, and associated finds. When excavating, he correlated archaeological, botanical, geological, and faunal evidence to strengthen his argument.

He strongly influenced the establishment of the Prehistoric Society in 1935 and as Honorary Editor of its *Proceedings* until 1970 facilitated the publication of innovative research. In *The Mesolithic Settlement of Northern Europe*, he introduced the reconstruction of prehistoric subsistence patterns and social factors into the study of past cultural distributions and seemed to assume that economic activities were more basic to the survival of a society than social, ideological, or artistic endeavours. The weaknesses of his approach became evident when he used environmental determinism to explain assemblage change.

During the late 1930s, Clark was influenced by D.F. Thomson's seasonality study, A.M. Tallgren's re-evaluation of prehistoric archaeology's methods, and by German and Scandinavian settlement excavations. In *Archaeology and Society*, Clark redefined archaeology as the study of how humans lived in the past, theorized many different aspects of society were interrelated but continued to argue that typological analysis must precede interpretation. Throughout Clark's early career, he was concerned with how to apply innovative methods to enhance classifications, excavations, and economic and social reconstructions of prehistoric life.

The history of Clark's earlier research allows us to understand more clearly his later choice of sites, technique of excavation, and interpretation of Star Carr as an early Maglemose seasonal habitation.

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INTRODUCTION

Sir John Grahame Douglas Clark became interested in collecting flint artifacts while living at English boarding schools as a young child. About entering the University of Cambridge in 1926 to study history, Clark (1974:35) recently remarked, "As an undergraduate I had already been a passionate connoisseur [of flints] for more than a decade, a result, perhaps, of having attended boarding schools from the age of seven, each of them situated on chalk downs (Sussex and Wiltshire) which were rich in flint industries." When he matriculated in 1926, The Faculty of Archaeology and Anthropology had just been constituted and a one-part Archaeological and Anthropological Tipos, designed. Successfully completing a B.A. in 1930, Clark became the Faculty's first candidate to register for research in archaeology, publishing his Ph.D. dissertation, *The Mesolithic Age in Britain*, in 1932.

Clark began his long and distinguished academic career at the University of Cambridge with the tenure of a Bye-Fellowship at Peterhouse College in 1933. Following this, he became Faculty Assistant Lecturer 1935-46, University Lecturer 1946-52, Disney Professor of Archaeology 1952-74, Head of the Department of Archaeology and Anthropology 1956-61 and 1968-71, Fellow of Peterhouse College 1950-73, Master of Peterhouse 1973-80, has been a visiting lecturer at diverse universities, received many awards including the prestigious Erasmus Prize for 1990, presented by Prince Bernhard of the Netherlands, for his "long and inspiring devotion to prehistory" (Scarre 1991:10), and in June 1992, was knighted.

Grahame Clark is one of the pre-eminent archaeologists of our time. In *A History of Archaeological Thought*, B.G. Trigger credits him with pioneering an ecologically oriented, functionalist approach to prehistory, and with being the first scholar to apply Sir A.G. Tansley's concept of an ecosystem to archaeological evidence. Gordon Willey (1990:371) agrees that Clark developed the ecosystem concept, introducing to British archaeology a systemic view of culture which attempted "to say something about the interrelationship of environment, technology, social forms, and idea systems." Clark is also known for his detailed reconstruction of prehistoric subsistence practices, for his study of taphonomic processes in site formation, and for his innovative interdisciplinary excavations (Rolland personal communication 1993). His most famous excavation took place at Star Carr in Yorkshire, England, from 1949 to 1951. This was a very productive, waterlogged Mesolithic site, which yielded a variety of well preserved artifacts and added significantly to our knowledge of English prehistory. Clark's interdisciplinary work eventually led to the development of subdisciplines such as bioarchaeology, zooarchaeology, and palaeoethnobotany (Trigger 1989:270), and to the establishment of The British Academy Major Research Project in the Early History of Agriculture, which was directed by one of Clark's most acclaimed students, Eric Higgs. During Clark's tenure of the Disney Professorship of Archaeology, Cambridge was the main provider of archaeological teaching posts for the Commonwealth (Hodder 1989:22). Through training of numerous graduate students, Clark exerted "a strong influence on the development of archaeology in many parts of the world" (Trigger 1989:264).

Unfortunately, Clark's life and research has not been studied. Trigger, the only author who has assessed his work, remarks on the absence of any detailed evaluation of his contributions (Trigger 1989:424). In contrast, the life and publications of the renowned archaeologist, V.G. Childe, to whom Clark is often compared, have been extensively researched, for example, by P. Gathercole (1971, 1974, 1975, 1976, 1982) S. Green (1981), B. McNairn (1980), W.J. Peace (1988), B.G. Trigger (1980, 1982, 1984, 1986) and R. Tringham (1983). Perhaps as a consequence of this lack of available scholarship, Trigger's coverage of Clark's thought concentrates on mature, known publications from *Archaeology and Society* to the present. When discussing Clark's contributions, Trigger analyses the results of his post-1940, "functionalist" research, such as the 1952 publication, *Prehistoric Europe: The Economic Basis*. Although this analysis is very insightful and telling for the period covered, Clark's prefunctionalist, pre-1939 research is not discussed.

There is a need for research documenting Clark's early intellectual development. Little seems to be known about his first publications and few archaeologists realize that, prior to the years devoted to economic studies, Clark was deeply concerned with the typological analysis of lithic surface finds. As a young man, he quickly became recognized as a lithics expert, who was especially interested in describing the techniques used to manufacture microliths and other flint artifacts. This preoccupation remained central to his work throughout the late 1920s and 1930s. For example, in his 1928 study of discoidally shaped flint knives, he detailed how the knife was produced. Again, in his 1933 paper on Horsham flints, he technically described the knapping methods used to

make various microlithic forms. As late as 1939, in the last excavation reviewed in this thesis, Clark was delighted to find a detached flake which could be refitted to its parent core. Devotion to lithic analysis was an integral part of Clark's intellectual character, and it would seem important to know him as a younger archaeologist to more fully understand his later contributions.[1]

This thesis provides a background to Clark's later work by studying his early publications from 1927 through *Archaeology and Society* (1939). Unfortunately, there is no comprehensive bibliography for Clark's writings. Neither Cambridge University nor Clark have kept a full record. The most complete listing appeared in the foreword to *Economic Prehistory: Papers on Archaeology by Grahame Clark* (1989). Although, this included all Clark's books, it was by no means an exhaustive inventory of his articles and furthermore contained some inaccuracies. My first task was to compile as complete and authoritative a bibliography as possible for the chosen period.

When constructing a bibliography, it is important to have access to the entire journal in order to look through all the notes, reviews, summaries of proceedings, and indexes. Reference Divisions at several libraries were very helpful. All volumes of years 1925 to 1950 of the following journals were provided by the University of Victoria and were thoroughly searched: *The Antiquaries Journal, Antiquity, Archaeologia and Miscellaneous Tracts Relating to the Society of Antiquaries of London, The American Journal of Archaeology* (from 1936 onward), *Journal of the Royal Anthropological*

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[1]Clark gave permission to be studied in a 1987 letter in which he commented, "At my time of life it naturally happens that in a subject as a young as prehistory, one is willy nilly bound to become a historical monument" (personal communication 1987).

Institute of Great Britain and Ireland, Man, Nature, Proceedings of the American Philosophical Society, Proceedings of the British Academy, Proceedings of the Cambridge Antiquarian Society, Proceedings of the Prehistoric Society (1935 onward), *Proceedings of the Society of Antiquaries of Scotland, Surrey Archaeological Collections,* and *Sussex Archaeological Collections*; University of British Columbia had available, *The Archaeological Journal* published by the Royal Archaeological Institute of Great Britain and Ireland (from 1927 to 1934), *Archaeologia Cambrensis* (1933 to 1936), and *Transactions of the Royal Society of Edinburgh* (to 1939); the University of Calgary had *The Archaeological Journal* (from 1934 onward), *Economic History Review,* and the *Proceedings of the Royal Irish Academy,* Section C, (from 1928 onward). Interlibrary Loan was able to procure all reviews, notes, summaries of proceedings, and indexes of all volumes of the predecessor to the *Proceedings of the Prehistoric Society*, the *Proceedings of the Prehistoric Society of East Anglia*, from 1925 to 1934.

Several journals which Clark may have published in are not available in North America for the years 1925 to 1950, and I did not pursue these further: *The Derbyshire Archaeological Journal, Isle of Wight Natural History Society, Journal of the Royal Institute of Cornwall, Liverpool Annals of Archaeology and Anthropology, Proceedings of the Spelaeological Society of the University of Bristol, Ulster Journal of Archaeology,* and the *Wiltshire Archaeological Magazine*.

Clark was a prodigious writer and reviewer of books. Not all publications from 1927 to 1950 will have been found. However, the bibliography of his writing appended

to this thesis, is the most accurate list available, and provides a large, solid set of sources upon which to base research.

An internalist approach seems appropriate to study these sources and is used in this thesis. As explained by Trigger (personal communication 1993), "An internalist view examines how interpretations that already exist in a discipline are altered [or not altered] by new evidence and hence how . . . interpretations change over time." This type of approach investigates academic assumptions, methods, and goals. In contrast, an externalist view studies the influence that economic, social, political, or intellectual conditions outside of a discipline have on the practice of that discipline. Trigger (personal communication 1993) suggests that both perspectives are "complementary, not mutually exclusive," and it would be interesting, at a future date, to contextualize Clark's intellectual maturation by studying his broader political and social milieux.

The thesis is divided into four sections each corresponding to a major area of research from Clark's academic life. In the first section, I analyse Clark's early studies of English lithic surface finds, focusing on the intellectual strategy and typological methods he used to classify these remains. Clark's involvement from 1932 to 1940 with the interdisciplinary Fenland Research Committee is discussed in the second section. Thirdly, the transformation of the Prehistoric Society and Clark's study of *The Mesolithic Settlement of Northern Europe* are examined. Finally, I investigate Clark's emerging interest in settlement excavations and his much acclaimed publication, *Archaeology and Society*.

Within each section, I answer such questions as: how did Clark define archaeology; what were his goals and how did he reach them; what were the apparent strengths and weaknesses of his approach; was he changing intellectually; and what were his immediate academic influences? Other issues which arise from the study of these questions are addressed in the thesis conclusion. These include: can we consider Clark a functionalist by 1939; was he influenced by V. Gordon Childe; how did his goals change; how did the devotion to lithics affect other aspects of his work; and how does his early work relate to more mature research?

Clark published his first article, a study of the use, morphology, distribution, and evolution of "horned hollow-scrapers," when he was twenty years old (Clark 1927:274). He had found many surface remains, including these scrapers, while surveying the Downs, near Seaford, Sussex, England. Studying the distribution of the flints, Clark noticed they came from a very restricted area and concluded they were a local variety. From evidence of wear, he decided the tools had been used for scraping cylindrical objects such as spear shafts, and that the horned aspect of the artifact had been used for boring or drilling purposes. He believed horned hollow-scrapers had evolved from common hollow-scrapers, which had no awl-like protrusions. Attempting to trace the stages of this evolution, Clark studied subtle changes in the morphology of each artifact. "The phase which marks the evolution of the [horned] type from the common hollow scraper is the reduction of superfluous flint from the sides of the protrusions," he concluded (Clark 1927:276). He suggested the horned scraper had functional advantages over the more common scraper, such as a multiple scraping edge, maximum ease in handling, and maximum strength. Clark believed the evolution of the scraper had been determined by a human need for a more efficient tool.

In his next article, published in 1928, Clark studied the typology, use, and distribution of "discoidal polished flint knives" (Clark 1928:41). In order to create a typology, he divided the discoidal knives into various "forms" (Clark 1928:41). By "form," Clark meant the plane outline delineated by the artifact's most distinctive profile when viewed from above. Suggesting the first, most primary form retained the general

plan from which all other knives were descended, he arranged the differing forms into an evolutionary sequence, demonstrating gradual morphological change. He then studied the distribution of the various forms, finding the most advanced artifacts were confined to one area, East Anglia. He hypothesized the type, discoidal flint knives, may have originally diffused from this area to other parts of England. Clark noted the artifacts were generally considered to be knives, but suggested they might have been used as a knife/scraper to cut along instead of into objects. He observed, "the Esquimo employs similar knives for flensing whale blubber," and concluded that the discoidal knives may have been used in this manner in England (Clark 1928:44).

This is the first time in print that Clark used ethnographic analogy to facilitate interpretation of artifacts. His restrained yet creative use of ethnographic analogical reasoning was to become an intellectual trademark during the 1950s and according to the eminent American archaeologist, Walter W. Taylor (personal communication 1988), one of Clark's most important contributions to our discipline. In this early example, Clark's reference to ethnographic evidence was brief and not elaborated. As the decade proceeded, he became more sophisticated in his use of ethnographic material. Clark's concern with and use of ethnographic information has been competently examined by M. A. Wylie (1985:81-102).

After discussing the knives' use, Clark studied the global distribution of the parent type (not of the various forms), finding discoidal polished knives were indigenous to the British Isles. When mapped, the artifacts fell into marked geographical areas within Britain and their distribution remarkably coincided with that of beakers, the pottery

produced by the early Bronze Age Beaker civilization. The knives had also occasionally been found with fragments of beaker pottery. "There does seem to be some ground for attributing the diffusion [of this type of knife] which we have described, to the Beaker folk themselves," Clark (1928:53) reasoned. He theorized this diffusion accompanied the invasion of England by the Beaker civilization. When considering Ireland only, Clark suggested the type could have arrived as a flint trade item, because in Ireland, the knives did not appear with their usual associated Beaker artifacts.

In 1929, Clark helped with the Whitehawk Neolithic excavation conducted by Williamson, but R. A. Smith was asked to do the lithics work for the report (Williamson 1930:61).[2] By 1931, however, in E. C. Curwen's excavation in the Trundle, Goodwood, Clark was chosen to present the lithics report (Clark 1931a:137). E. C. Curwen was an accomplished excavator who is remembered as one of the champions, along with Wheeler, of General A.H. Lane-Fox Pitt-Rivers' excavation techniques (Rolland personal communication 1991). Clark (1989a:50) writes, "In my own case I learned the basic skills of excavation on the chalk downs of Sussex under Dr. E. C. Curwen, a medical practitioner of Hove who applied methods perfected by the legendary General Pitt Rivers." If Curwen chose Clark as his lithics man, it is likely that Clark was well established as a flint industries expert by 1931.

Throughout the 1930s, Clark was often asked to add lithics' sections to archaeological reports or to examine isolated finds. Examples of this are: H.S.

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[2]Reginald Smith, the Keeper of British and Medieval Antiquities at the British Museum, was a frequent contributor to the *Sussex Archaeological Collection* and to the *Antiquaries Journal* during this period of time.

Kingsford (1934:53) "Our Fellow, Mr. Grahame Clark, describes the flint implements here illustrated;" S.T. Percival (1934:251) "I am indebted to Dr. Grahame Clark for examining these flints;" E. E. Curwen and E.C. Curwen (1934:391) "The specimen has been submitted to Dr. Grahame Clark who argues in favour of the view that the sickle may have been hafted in the Mediterranean manner," and C.S. Leaf (1938:61) "I submitted this [flint] material to Dr. Grahame Clark, Ph.D., F.S.A., who has very kindly submitted the following report."

Clark's 1929, 1930, 1931b, 1931d, 1931e, 1931f and 1931g papers have several things in common with his first two articles. In 1929, as earlier, he was concerned with analysing the function of flint artifacts, concluding because of their shape and evidence of polishing, they had been used as rubbing stones in Neolithic querns. In his 1930 article, which described a Sussex coastal microlithic site, Clark categorized the lithic remains according to changes in their morphology. In 1931b and 1931d, he studied beaker pottery, which he classified into two groups by differences in form and decoration. Clark mentioned the criterion of form was first used in the original classification of Beaker pottery by Lord Abercromby in 1902. He plotted the distribution of the two types of Beaker pottery on maps, finding they had different geographical distributions, and noting Neolithic grave goods and other associated artifacts also separated themselves decisively into two groups which corresponded with the territories of the two types of beakers. Clark (1931b:424) concluded, "there seems no reason to doubt that the beaker culture of this country [was] made up of two distinct complexes."

Clark's 1931f article dealt with the analysis of flint surface finds from Swaffham Prior Farm. "Only the superficial and not the stratigraphical position of each flint is known" (Clark 1931f:17). Although the flints fall into two typologically separate era's Upper Palaeolithic and Neolithic, their patination and surface distribution implied that they were from one industry. Because there were no differences in patination and distribution, Clark theorized the two groups of artifacts were from the same homogeneous culture. By homogeneity of culture, Clark meant a distinctive set of artifacts which exhibited a substantial uniformity in technique of production, patination, form, and distribution. Thus, the burins were survivals from the Palaeolithic, but the site was Neolithic.

Several lines of evidence were used to support this conclusion. Clark attempted to test his typological work by studying other aspects of the artifacts, for example their patination and their distribution. From these varied sources of data, he hoped to obtain independent information upon which he could hypothesize a date for his surface finds. When these separate lines of inference converged, Clark's argument was greatly strengthened.

In these studies, Clark handled and drew the artifacts himself. "The value of handling, scrutinizing and drawing specimens of ancient craftsmanship as a key to understanding them," Clark (1989a:33) wrote, was taught to him by E.H. Minns, the Disney Professor of Archaeology when Clark was an undergraduate and graduate student at Cambridge. A personal approach to artifacts was important because Clark's methods of creating typologies were based on intuitive judgements of changes in form, and such

methods of classifying demanded an intense knowledge of the artifact. Clark also credited Minns with encouraging him to learn German which was an enormous help, allowing him to understand Scandinavian and German publications central to Mesolithic studies.[3]

Clark wrote his 1931c article after his first trip to Scandinavia. "My first view of the glories of Scandinavian archaeology was obtained when I visited Denmark and Sweden as the guest of the late Dr. John af Klercker in 1929," wrote Clark (1936a:ix). "On a recent visit to the Danish National Museum at Copenhagen I took the opportunity of making a rapid study of their flint arrowheads" (Clark 1931c:23). This article is noteworthy because Clark introduced a statistical method for the first time in his publications. He first classified the arrowheads into seven types by differences in form, then calculated percentages of each type, compared these proportions, and studied only the most populous forms. A year later, Sir T.D. Kendrick (1932:128), "following a previous suggestion by Mr. Clark," repeated these procedures for a collection of arrowheads from England. T.D. Kendrick was a noted and knowledgeable archaeologist who later became the Director of the British Museum. The fact he attributed this quantitative method to Clark implies such methods were not widely used in lithics analyses by British archaeologists in the early 1930s. However, quantitative methods had been used extensively, in a very sophisticated manner, by Sir W. M. F. Petrie in his

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[3]Phillips (1989:36), is less complimentary of Minns and states that Clark and he "were drawn together by a common dislike of the local archaeological situation, where the haphazard activities of the Downing Street Museum group of amateurs and the ineffective direction of the Department under Professor Minns were not following up . . . the impetus given to local studies by the publication of Cyril Fox's (1923) book."

1906 analysis of Egyptian male skulls of the VI to the XII Dynasties (Rolland personal communication 1991).

In his 1932 Ph.D. dissertation, *The Mesolithic Age in Britain*, Clark presented a careful, detailed, distributional study of British Mesolithic assemblages.[4] He personally studied and analysed all existing lithic evidence, material which had not been collected in one source before. Clark's (1972:1) goal was "the recognition and definition of artifactual assemblages distinct from those ascribed either to the previously defined Palaeolithic or Neolithic Stone Ages." In his 1933 review, V.G. Childe (1933:18) stated "for its exhaustive exposition and sound interpretation of the mesolithic industries of Britain . . . the book is indispensable and admirably fills a real gap."

More recently, Clark (1974:35) has stated that the subject of his initial research had been suggested to him by his supervisor, M.C. Burkitt. In those days at Cambridge, Clark (1974:35) continued, "Miles was required to cover the whole field of prehistory . . . in attempting this he was made keenly aware of the fault or gap [in knowledge] between the Old Stone Age (Palaeolithic) and the New (Neolithic)." Burkitt (1932a:xiii) noted this lack of Mesolithic scholarship in his Preface to Clark's dissertation, and had for some time during the 1920s, been gathering information on Mesolithic assemblages on the continent (Clark 1974:35). However, although Burkitt was always sympathetic, he "left me very much to my own devices" (Clark 1989a:53). He encouraged the choice

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[4]Clark (1989c:11) lists the original title of this dissertation as *The Mesolithic, Neolithic and Early Metal Age Flint Industries of Britain.*

of this subject matter and acknowledged its worthiness, but seems not to have been helpful or involved in other ways.

Clark (1989a:44) stated Dorothy Garrod, famous for her Upper Palaeolithic excavations in Kurdistan and at Mount Carmel, "exerted by far the greatest influence on the advance of prehistoric studies at Cambridge." Garrod had studied with L'Abbe Breuil at the Institut de Paleontologie Humaine in Paris during the early 1920s, held a research fellowship at Newnham College, Cambridge, from 1929 to 1932, and became Disney Professor of Archaeology at Cambridge in 1938. Clark (1989a:53) wrote, "The basis from which I began to research the Mesolithic phase in British prehistory was the ten page treatment of what Dorothy Garrod termed 'epi-palaeolithic' cultures in her book *The Upper Palaeolithic Age in Britain.*" The similarity in title and format between Garrod's 1926 publication and Clark's 1932 dissertation is noteworthy, and it appears that Garrod set a good example for Clark to expand upon in his *The Mesolithic Age in Britain.*

In his 1932 dissertation, Clark's typological methods were similar to those which he had used in his earlier articles. However, he made several points in a clearer, more comprehensive manner. He argued for the presentation of a wide range of evidence when attempting to classify and date Mesolithic assemblages. It was important, Clark (1932a:111) stated, to consider the total "character of the industry" being studied rather than "certain selected types." The lithic industry should be considered as a whole and all lithic categories of an assemblage must be studied. The presence or absence of a

"type tool" could be recorded but Clark did not advocate basing conclusions on the presence of one characteristic type of tool alone.[5]

In his dissertation, Clark wrote of "evolved" artifacts, as he had in his earlier articles. For example, when discussing two harpoons found in Yorkshire, Clark (1937a:17) wrote, "technically the harpoons are more evolved than those from the Maglemose station of Svaerdborg, comparing more closely with those from Kunda of rather later date." He hypothesized there was an "extension of a developed stage of Maglemose culture to what is now the eastern fringe of England," and emphasized evidence of links between British Mesolithic assemblages and the Western Baltic (Clark 1932a:18).

As in his earlier articles, he equated assemblage, culture, and people. There had been discovered, for example, in the Marsden area, two types of microlithic industry, a broad blade or non-geometric and a narrow blade or geometric. "Thus, whereas the non-geometric folk almost invariably utilized rather a poor whitish to pale grey flint, the geometric people employed, to a very large extent, a smooth semi-translucent brownish flint of attractive quality" (Clark 1932a:26). Note here "folk" equalled "industry" and Clark was assuming that people, culture, and lithic assemblage were isomorphically related.

Clark noted the two industries, broad blade and narrow blade, were dramatically different typologically, exploited different types of flint supply, but occupied the same

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[5]A "type tool" is an artifact which occurs so regularly and predictably in a group of assemblages, that it can be used to indicate a culture.

area. From this Clark concluded the industries could be arranged chronologically, with the less evolved, broad blade industries preceding the more sophisticated, narrow blades.

The technique of concurrent mapping of artifacts, which Clark used here and in his earlier articles, was pioneered by Fox (1923), and discussed by Childe in his 1935 Presidential address to the Prehistoric Society. "The technique of archaeological mapping which has been so splendidly developed in this country thanks to Crawford, Curwen, Chitty, Clark, Fox, Phillips and others is very helpful both in deciding to what culture a type belongs" and, Childe (1935a:6) continued, "in determining the chronological relation between several cultures. For instance, contemporary cultures tend to exhibit mutually exclusive distribution, while successive cultures may and successive phases of the same culture should partly occupy the same area." However, in 1929 Childe (1929:ix) warned that archaeologists may be mapping their own ignorance, that is, the patterns being discovered may in fact be incomplete because of blank spots in archaeological finds.

Clark skilfully drew analogies between assemblages from the British Isles and Continental and/or Scandinavian finds. These comparisons were helpful to Clark because most of the Continental evidence had been dated stratigraphically. He was also able to hypothesize genetic connections between Continental and British assemblages which exhibited convincingly broad similarities. For example, when comparing the Glen Wyllin finds, an assemblage from the Isle of Man, with specific Belgian industries, he found micro-burins occurred in great abundance in both British and Belgian assemblages, small triangle, crescents of geometric form, and certain types of hollow-based points

were characteristic of both, and trapezes were rare. Clark (1932a:31) argued the many points of agreement established between the Glen Wyllin industry and those from the three Belgian sites "are of such a nature as cannot be explained merely by the phenomenon of convergence. It seems difficult to believe that there is not an intimate connection between the two."

There were very few British mesolithic sites which produced stratigraphic evidence, and when this evidence was available, Clark used it. For example, at a flint-chipping site in Pembrokeshire, several flakes, including a microlith, were found in a soil drift of pre-submerged forest date which "appears to give a pre-Neolithic date to the industry" (Clark 1932a:49). Clark was aware that he must use every possible line of evidence to establish proper typologies because the industries he was studying were primarily surface finds "only on the rarest occasions found in any kind of stratigraphical context" (Clark 1932a:19).

Clark (1932a:86-91) presented an intensive study of the industries found in Sussex and the adjoining areas. He plotted the Mesolithic, Neolithic, and Bronze Age artifacts on maps which contained geological and topographical information. Childe (1933:181) in his review of Clark's dissertation, considered this examination to be "original research" which "reveals the restriction of microliths to sandy areas and the marked discrepancy between their distribution and that of neolithic and Bronze Age remains." Once again Clark was using the methods of mapping popularized by himself and others.

Clark presented several interesting hypotheses in this dissertation. He insisted on an extensive immigration in Early Tardenoisian times which resulted in the broad-blade,

non-geometric microliths of the Pennines and the North and on a second intrusion in Middle Tardenoisian times which explained the distinctive microliths of the Isle of Man and the modification of earlier traditions. He also suggested western Baltic influences had occurred in East Anglia.

In his review of Clark's work, Childe took issue with the term "influence." "In this [the suggestion of Baltic influences], he is also most certainly right, but we hope that the use of the word 'influences' will not lead the reader to imagine that the author thinks he has thereby explained anything" (Childe 1933:181). In *The Danube in Prehistory*, Childe (1929:vi-vii) suggested influences could mean several forms of contact such as mixing of people, intertribal barter, or imitation. Generally Clark attributed changes in artifactual assemblages to migrations and invasions, as in this case, when he hypothesized a movement of people to England's eastern coast (Clark 1932a:18). In contrast, according to Childe, in his article on northern European Forest Cultures (1931a), diffusion could result not only from invasion and migration of new people but also from the exchange of ideas, cultural borrowing, the spread of valuable inventions, or from periods of mutual contact and observation. Clark was well aware of Childe's 1929 and 1931a publications and used the 1931 article as a reference in his dissertation. It is puzzling that he did not make more varied use of the concept of diffusion and did not discuss the term influence in the detail which Childe suggested.

Clark's most successful hypothesis in his dissertation, was his suggestion that the broad blade, non-geometric industry of the Pennines and northern area, predated the narrow blade or geometric industries of generally the same area. For decades this

hypothesis was completely accepted. As recently as 1974, the accomplished British archaeologist, P.A. Mellars (1974:89) wrote in support of Clark, "A basic dichotomy can be recognized between the assemblages in which the microliths consist *exclusively* of geometric forms and those in which the latter types are accompanied by the larger, nongeometric types which characterize earlier stages of the Mesolithic." However, S. Palmer, in her current study of British Mesolithic cultures, presented convincing evidence against Clark's hypothesis. "It would seem obvious that no simple uni-linear development for the British Mesolithic can be postulated . . . there must be allowance made for more than one culture, and for a much more complex picture than that suggested by the hypothesis of a British Mesolithic with big non-geometric microliths in the earliest stages and small geometrics in the later stages," Palmer (1977:187) concluded.

In an appendix to his dissertation, Clark hypothesized the micro-burin is actually a by-product of flint manufacturing, not a tool. This hypothesis has been accepted and studied further by the French archaeologist J. Tixier. In another appendix Clark argued that the Grimes graves and Cissbury flint mines are Neolithic in date. This was a controversial subject in the early 1930s because R.A. Smith and A.L. Armstrong had concluded on the basis of typological studies of the lithic artifacts that the mines were Palaeolithic in origin. Clark (1932a:11) compared the typological lithic data with results from mollusca and fauna studies, and found "other lines of evidence . . . ran definitely counter to the Palaeolithic hypothesis," but in favour of a Neolithic date. Clark and Piggott expanded on this argument in 1933, by studying chalk lamps and pottery found

associated with the mines (Clark 1933f). The authors determined these items were Neolithic in date. Here again Clark confirmed his hypothesis by presenting several different results which supported each other, and this hypothesis is now considered to be correct.

In 1932, A. S. Barnes wrote a review of Clark's dissertation. Barnes, an interesting academic who along with Obermaier, Breuil, Dawkins, Dechelette, and others, dispelled the eoliths theory of the early 20th century, made several criticisms of Clark's work. In the early 1930s, the concept of a Mesolithic was controversial and Barnes disliked Clark's use and definition of the term. Here Barnes' criticisms were surprisingly modern. "The division of the Stone Age into periods is necessarily an arbitrary one. Prehistorians . . . recognize . . . that clear cut lines of demarcation rarely exist in fact," Barnes (1932:134) argued. It has become fashionable in the last twenty years to view the Mesolithic as a continuous, transitional period.[6] Clark himself has been an active participant in this process of redefining of the term. Barnes' statement resembles S.A. Czarnik's recent critique; "In reality, these [climatic and environmental] changes began not suddenly and abruptly at the end of the Pleistocene but gradually and spasmodically some 2,000-3,000 years earlier" (Czarnik 1976:63). "In a somewhat broader sense," Czarnik (1976:65) continues, "the key issue here is that nearly any conceivable sequence of evolutionary stages will be a sequence of . . . abstractions."

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[6]The term Mesolithic has been debated and recently revised. Articles which discuss and participate in this debate are: Clark (1962b, 1975, 1978, 1980), Czarnik (1976), Mellars (1981) and Price (1981, 1983).

Barnes' and Czarnik's broad point, that such divisions tend to ignore the evidence for continuity, is good criticism.

Barnes was especially critical of Clark's use of climatic and environmental evidence to support the definition of the Mesolithic as a separate period. Clark (1932a:b) had suggested, "The Mesolithic Age as a whole is demarcated from the Upper Palaeolithic by a great geological and climatic divide." During the late 1920s, Clark was not alone in his evaluation of post-Pleistocene climatic change. In 1929, Childe (1929:4-5) briefly reviewed the recent Scandinavian, German, and Polish literature which showed that "in Holocene times, the climate of our continent and hence its vegetation underwent manifold changes." When discussing retrospectively the impact of *The Dawn of European Civilization,* Childe (1989:10) stated, "eventually, I stumbled upon Grams and Nordhagen and so introduced the idea of post-glacial climatic changes to English readers." Clark's supervisor, Burkitt, (1926a:4) had written, "at the end of the Upper Palaeolithic times, a rapid change of temperature took place in Western Europe and the climate ameliorated." Again in 1926, Burkitt (1926b:16) stated, "modern fauna [appeared] showing that the climatic conditions far from being Arctic had become reasonably genial." He argued that it would be convenient to create a Mesolithic stage to include "all those industries and cultures yet but dimly known that start at the end of Magdalenian times on the change of climate" (Burkitt 1926a:4). The evidence coming from Northern Europe in the late 1920s, did suggest that a division of the Stone Age could be supported on the grounds of environmental and climate change. Clark

concluded that the passing of Pleistocene conditions helped to impart a distinct character to the new Mesolithic age (1932a:2).

Clark argued that Mesolithic assemblages should be classified in a separate age for several other reasons. Based on the Belgian and French stratigraphic evidence of his day, the Mesolithic evidence was considered to be later than the Upper Palaeolithic, and the flint, stone, and bone industries of the Mesolithic were viewed as unique. The remains of the new age showed a "distinctive individuality" in contrast to those of the Upper Palaeolithic, Clark (1932a:2) stated. The most striking feature of Mesolithic times was the remarkable spread of microlithic flint industries over all of Europe. These industries consisted of small points, triangles and crescents, and were characteristic of the Mesolithic era (Clark 1932a:7).

Clark did not consider the Mesolithic to be a transitional period between the Palaeolithic and the Neolithic. It was not a necessary evolutionary stage and the Mesolithic assemblages were not related to the "intrusive cultures" of the Neolithic (Clark 1932a:3). "Genetically speaking the Mesolithic and Neolithic civilizations must be regarded as divergent branches from the same stem rather than as successive generations," Clark (1932a:6) suggested. All that was implied by the term Mesolithic was that a group of cultures occurred in point of time, between the Palaeolithic and Neolithic.

Other writers, of the 1920s, had discussed the Mesolithic. R.A.S. Macalister, in his entertaining history of the Palaeolithic, had used the term, suggesting a convenient *single* word was needed to denote the phases of civilization intervening in time between

the Magdalenian and the Neolithic. W.J. Sollas (1924:602) in his famous book, *Ancient Hunters and Their Modern Representatives*, preferred the phrase the "Azilian Age." "We use the term Azilian in general to denote an age or stage which . . . others less appropriately [designate], 'Mesolithic'," he (1924:517) wrote. Childe disliked the word. In *The Dawn of European Civilization*, he (1925:4) commented, "A whole series of intermediate stages have come to light to fill the old hiatus. The transitional cultures are sometimes called mesolithic but the term epipalaeolithic is better; for the remains which fill the gap in time do not certainly lead on the New Civilization."

In his review of O. Menghin's *Weltgeschichte der Steinzeit*, Childe was clearly pleased when Menghin abandoned the term, complaining that the Mesolithic and Neolithic were "applied on the basis of often superficial criteria and may be ambiguously used as denoting either chronological divisions or cultural grades." Childe felt labels such as these were too closely associated with the evolutionary epochs of the nineteenth century and that a new nomenclature should be established based on the economic characteristics of a culture. He expanded upon this idea in his 1935 presidential address to the Prehistoric Society, suggesting "the terms palaeolithic, neolithic, etc. should be regarded as indicative of economic stages . . . we [shall] consider the economic stage to which a culture should be assigned in the 'functional-economic' classification [by comparing] the material equipment, economic organization and scientific knowledge of one prehistoric people with those of others" (Childe 1935a:9). C. and J. Hawkes favourably reviewed Childe's suggestions in their next edition of *The Archaeological Journal* suggesting that words such as Neolithic or Mesolithic, which had been used to

denote time periods, could be better used to imply states of cultural development. They both agreed with Childe that a "functional conception of culture archaeology" could enrich their discipline (C. and J. Hawkes 1935:335). Clark, however, continued to use "Mesolithic" to mean both a time period and a group of cultures.

At this stage of his career, environmental impact on cultures was discussed in broad, deterministic terms. Clark theorized changes in environment caused the development of both the Mesolithic and Neolithic cultures. "The drastic environmental changes playing upon human cultures of a relatively simple character, were conducive to developments of far-reaching importance," Clark (1932a:6) wrote. Humans reacted to the stress of post-Pleistocene climatic change by migrating, by modifying their existing cultural equipment to become Mesolithic peoples, or by altering the character of their exploitation of natural resources from the food-gathering to food producing (Clark 1932a:6).

In his 1933 review, Childe (1933:182) noted that, in *The Mesolithic Age in Britain*, Clark had reservedly endorsed O. Menghin's "theory of culture cycles." Menghin had theorized that, during the Upper Palaeolithic and Mesolithic, there were three basic complexes of cultural traits or "cycles" distinguishable by the material and technique used for making tools. For example, the Maglemose remains from Scandinavia represented a bone culture "cycle." Clark (1932a:2) referred to Menghin's work in the introduction to his dissertation, commented that some of his ideas were "of great significance," and agreed with Menghin that the core tradition had persisted throughout the Upper Palaeolithic into the Mesolithic. Again, in chapter one, Clark

referred to Menghin when describing the Mesolithic's blade, core, and bone industrial traditions. In 1931, Clark wrote an enthusiastic review of Menghin's *Weltgeschichte der Steinzeit*, expressing an interest in how Menghin had fit certain European assemblages into classificatory cycles, and included this publication in his dissertation's bibliography. Because of this source of influence, it is worthwhile reviewing Menghin's contributions.

Menghin is now relatively unknown but in the late 1920s and early 1930s, he was very influential, especially in Scandinavia. For example, the Danish archaeologist, C. J. Becker (1989:118) writes, "there were also more advanced schools of thought in European archaeology at that time, for example the 'Vienna School' and Oswald Menghin's *Weltgeschichte der Steinzeit* (1931) . . . [which] was the 'New archaeology' of the time." In his review of this book, Childe (1931b:297) complimented Menghin on his attempt to bring "the cultures recognized by prehistoric archaeology into line with the 'cycles' (Kulturkreise) of a certain [Austrian and German] diffusionist school of ethnographers and thus to enrich the content of both disciplines." The American anthropologist, C. Kluckhohn, also commended Menghin, stating that he was one of a very few archaeologists to apply the ethnographic method and theory of the Kulturkreislehre to prehistory.

Briefly, and after Kluckhohn, the Kulturkreislehre theory and method were as follows. The ethnographer must first know intimately one area, taking into account "not merely the typological resemblances of a single trait but also the whole number of such similarities between traits or groups of traits" (Kluckhohn 1936:163). Neighbouring regions must also be studied intensively. The student should make distribution maps,

proceed to analyse the distribution of culture traits, and must be concerned with whether or not the culture is relatively homogeneous. If a culture seemed to exhibit the same combination of characteristics as another, the student could assume a genetic connection between the two. The main goal was "the establishment of spatial and temporal distribution [which reveals] that certain culture elements appear in association in a fashion too consistent to be fortuitous" (Kluckhohn 1936:162). Such geographical culture complexes were called Kulturkreise and might sometimes exist contemporaneously in one region. At that point, it might be possible to hypothesize a relative chronology.

This is reminiscent of methodologies we have observed in Clark's first published articles. He intensively studied one assemblage, considering all traits of that assemblage, and compared one assemblage to another. If neighbouring assemblages were pervasively typologically similar, he concluded they were related. He then used distribution maps to distinguish the geographical limits to the complex of assemblages, and assumed a chronological relationship if assemblages coincided in one region.

The similarities between Clark's archaeological methods and the ethnographic methods of the Kulturkreislehre are pervasive. However, although it is clear from Clark's references to and use of Menghin's work in chapter one of his dissertation that Menghin influenced him theoretically, it is not clear if he was indebted to Menghin methodologically. Childe, used similar methods in *The Dawn of Civilization* in 1925 (Trigger personal communication 1992). Therefore, Clark may have been influenced by the general acceptance of these methods in Britain during the late 1920s, and not by direct contact with Menghin's publications.

In Clark's remaining 1932 publications (1932b, 1932c, 1932d, 1932e and 1932f), dating archaeological remains was his prime goal. This is in subtle contrast to his earlier publications (1927, 1928, 1929) where his main concern had been to study the typology and distribution of finds, as well as occasionally hypothesizing a date. However, his typological methods remained the same throughout these papers. For example, when researching British curved flint sickle blades, Clark again categorized artifacts by studying their form and use as he had in his 1928 discussion of his discoidal knives. He mapped the distribution of the sickles, finding they were concentrated at the three main waterways of eastern England. He noted the sickles had been found consistently associated with Neolithic Peterborough Pottery. Clark (1932c:80) concluded that the introduction of this type of sickle must be "correlated with the arrival of the same folk who brought with them the Peterborough pottery," when they invaded England's eastern rivers and bays. Here Clark's argument paralleled his reasoning in his 1928 article, when he concluded that discoidal knives were introduced by the Beaker civilization when it invaded England.

In 1933 and 1934, Clark published his two most acclaimed typological studies. In "The Classification of a Microlithic Culture: the Tardenoisian of Horsham," Clark categorized numerous microlithic surface finds which had been collected from eight sites in Sussex, England. Clark (1933b:55) suggested classification was needed in order to record properly the diverse finds and to provide an "objective basis for comparison" to other similar collections. He adapted three conventions: "the term microlith is applied only to flakes from which the bulb of percussion has been removed, . . . microliths have

been illustrated with the pressure rings of the primary flake open towards the top of the page . . . the term 'blunting' is applied to steep often vertical, secondary working in distinction to the flatter edge 'trimming'" (Clark 1933b:55). He sorted the microliths from the eight sites into seven classes, based on differing morphological shapes, giving these classes labels by describing how they were made. Class A, for example, contained microliths which were blunted obliquely down part of one edge, B, microliths blunted straight down one edge, and C, microliths blunted down one edge and across their base (Clark 1933b:56). The simplest forms belonged to classes A, B, and C, and the more "evolved," complex, geometric forms, to Class D (Clark 1933b:57). Once the microliths were sorted into classes, the eight sites could be compared by studying the proportions of different classes which occurred at each location. Clark found there was substantial uniformity between the microlithic inventories, which implied the sites belonged to one culture. He also noted, when comparing these results with remains from neighbouring areas, hollow-based points (Class F) and tanged points (Class G) were unique to the Horsham culture.

In his 1934 publication describing derivative forms of a type of British arrowhead, the Petit Tranchet, Clark (1934c:32-33) stated "it [is] convenient to distinguish various classes," by considering the flints morphologically. He recognized a basic, general "parent form," Class A, from which all subsequent forms, classes B-I, were derived (Clark 1934c:33). For example, Class A, consisted of a primary quadrangular flake with "the two edges at right-angles to the main line of the flake (and by consequence of the pressure rings) being blunted by almost vertical secondary flaking," wrote Clark

(1934c:36). Class B had all the features of the parent type except the edge flaking was flattened rather than vertical. Class A had been consistently found in sites dated to the later half of the Mesolithic period. Classes B and C were associated with Neolithic remains. Clark (1934c:33) suggested classifying the Petit Tranchet arrowheads in this way could have "chronological value for excavators," that is, the presence of class B or C arrowheads would immediately indicate a Neolithic or later occupation.

Discussion and Conclusion

How did Clark conceive of archaeology during this period of his career? "The science of archaeology might well be defined as the study of past distribution of culture-traits in time and space, and of the factors governing their distribution," wrote Clark (1933h:232). He did exactly this in his early work, by studying the spatial and chronological distributions of British assemblages in great detail. Clark was especially astute when fulfilling the first part of his definition and by using distributional maps and typological sequences, reached his goal of establishing relative dates for British Mesolithic sites.

One of his greatest strengths was his methodological exactness in creating typologies and chronologies. Clark's dissertation and early typological studies were pioneer works. His focus on the total character of a lithic assemblage rather than on selected tool types, anticipated Francois Bordes' famous classification system developed during the 1950s (Rolland personal communication 1993). Furthermore, the lithic typologies which he developed are still used, and his early publications are cited by

current Mesolithic scholars such as P. Mellars (1974) and C. Bonsall (1985). Forty-three years later, S. Palmer (1975:15), in her survey of British Mesolithic cultures, could write, "Professor Clark's definition and classification of British microlithic types . . . still form a basis for the assessment of lithic industries."

Another significant strength was Clark's convincing use of several lines of evidence to enhance his conclusions. When classifying an assemblage, Clark attempted to exploit what the philosopher M. A. Wylie (1989:99) terms "a concatenation of inferences" to strengthen his arguments. He studied presence or absence of tool types, state of preservation of artifacts, percentage of different artifact types present, material and technique used in the manufacture of the tools, associated finds, and archaeological remains from the vicinity, before stating his results. Thus, he supported his lithic typological analysis with other types of evidence such as the distribution and patination of the artifacts. When discussing the age of Grimes graves, he used data drawn from biology, a field of study independent from the archaeological context, to test R.A. Smith's typological suggestions.[7] In doing this, Clark was looking for what M. Shanks and C. Tilley (1987a:104), in their recent critique of archaeological method and theory, approvingly call a "network of resistances." He did not wish to be dependent on one type of evidence alone, and by using several types of data, he set up constraints and checked his results. This is exemplary archaeological practice.

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[7]Clark was looking for lines of evidence which could be proven to be independent from each other. However, there would seem to be degrees of independence. The typological analyses and distributional mapping of artifacts were both based on a diffusionist framework and may have been vulnerable to circular reasoning.

His academic abilities were also evident in his successful efforts to focus attention on a newer area of research, the British Mesolithic. Clark is "the doyen of Mesolithic studies" writes the Mesolithic expert, T.D. Price (1983:761). In his first letter to me, Clark mentioned he was "in at the beginning" of Mesolithic studies in England, (personal communication 1987). Lord A.C. Renfrew (1986:238), the current Disney Professor of Archaeology at Cambridge University, agrees, "Grahame Clark is widely esteemed as the leading prehistorian of our time [partly] for his pioneering work on the Mesolithic period." Clark demonstrated by his actions that archaeologists should study British, especially Mesolithic prehistoric material. "The first and laudable objective" of young archaeologists in the late 1920s and early 1930s "was to study the British material *in its own right*, recognizing and describing local groupings," writes Renfrew (1974:14). Crawford, Childe, Fox, Garrod, Clark, Piggott, and Hawkes were the leaders of this "new vitality of British prehistory" (Renfrew 1974:14).

Although extremely capable when studying the past distribution of culture traits in time and space, there were weaknesses in Clark's approach to fulfilling the second part of his definition of archaeology. He exhibited conceptual difficulties when discussing the factors which governed the distribution of cultures. In early work, such as his research on discoidal knives (1928), flint sickles (1932c), and in his dissertation (1932a), Clark used the invasion and migration of new populations to explain the diffusion of artifacts. Broader changes in assemblages were also attributed primarily to invasion. This was despite the fact that as early as 1925, in *The Dawn of European Civilization* and in *The Danube in Prehistory* (1929), Childe had discussed diffusion in subtle, complex ways and

Clark was aware of his work. He had listed *The Dawn of European Civilization* as recommended reading in his dissertation and had also referred to Childe's 1931 article on Forest Cultures in northern Europe, in which Childe had discussed the diffusion of ideas. Clark did not describe diffusion in detailed or varied ways, did not refer to the possibility that diffusion could have resulted from the spread of ideas, and was not concerned with the internal dynamics of how diffusion worked. One wonders why Clark did not use this concept in a more sophisticated manner.

When discussing the broad shifts from Upper Palaeolithic to Mesolithic or Neolithic cultures, Clark did not clarify how climatic and environmental change wrought cultural change. Migration, modification of tool kits, and innovation of food producing economies were discussed as options, but these possibilities were not explored in depth or explained in detail. It would appear Clark did not focus his intellectual efforts on discussing the factors governing culture-trait distribution.

Clark seems to have assumed an assemblage automatically indicated a "culture," and that a "culture" was the same as a "people." Renfrew has characterized this line of reasoning as follows: "Recurrent assemblage --> Culture --> People --> Folk movement," stating this "agreeably logical sequence . . . is open to question at each stage" (Renfrew 1979:15). The leap of faith required at each arrow is attractive but can be faulty. "Even when a recurrent assemblage with well defined boundaries can be established, it is often far from clear what its proposed counterpart of 'folk' or 'people' . . . would actually mean." Although we can not expect Clark to think as Renfrew does today, Childe had made a similar point in *The Danube in Prehistory* when he argued that

certain tools and weapons found in assemblages could not be used as reliable indicators of ethnic identity. An assemblage did not always imply a "people" (Childe 1929:248),[8] and the concept "folk" was not interchangeable with "culture."[9]

When defining the Mesolithic, Clark used the term to mean both a time period and a group of cultures. In his presidential address to the Prehistoric Society in 1935, Childe had suggested that this could be clarified. In their review of this lecture, J. and C. Hawkes, who were contemporaries and associates of Clark, had agreed with Childe and recommended the term Mesolithic be used as a cultural grade. Even as a young man, Clark was a scholar of major stature and intelligence and it is puzzling he did not explore these concepts with more precision and insight.

In the following discussion of Clark's association with the Fenland Research Committee, his strengths as a synthesizer and skilled excavator become obvious and no conceptual difficulties are apparent. However, problems do arise with Clark's use of environmental determination in his 1936 investigation of Mesolithic cultures in northern Europe. The focus and strengths of Clark's approach will be further discussed in the thesis conclusion.

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[8]This point was brought to my attention by Trigger's analysis of Childe's use of the concept of culture (Trigger 1980:40).

[9]Later in the 1930s, the Finnish scholar, A.M. Tallgren, (1937:156) reiterated the point, "material culture often cannot be equated with a 'people'."

The Fenland Research Committee and Interdisciplinary Archaeology

In the summer of 1931, Clark began to investigate an early metal-age Fenland site, at Shippea Hill, in eastern England, which he had discovered while conducting a field survey with his friend and co-worker, Charles Phillips. "We archaeologists did a good deal of walking and in one case Clark found traces of much more ancient human activity on sand hills emerging from cultivated peat fen at Shippea Hill," wrote Phillips (1987:38). This site presented Clark with his first opportunity to study stratigraphy. When cutting a trial trench, he discovered artifacts sealed under a distinct geological layer of peat. In order to study the significance of this layer, he realized that the excavation could benefit from both interdisciplinary and stratigraphic approaches.

Sir Harry Godwin, the Cambridge botanist, suggests Clark was influenced by the academic climate in Britain during the early 1930s, which would have made him aware of the value of interdisciplinary co-operation. "A remarkable revitalisation was becoming manifest in British archaeology where professionals and amateurs were becoming acutely aware of the great advantages that could follow integration with the natural sciences" (Godwin 1978:7). He continued, "the stimulus to fresh advance came . . . in the expansion of ecological ideas, particularly of dynamic succession, in the adoption of [Scandinavian] techniques of pollen analysis and finally in the whole concept of Quaternary research (Godwin 1978:45)." This expansion of new ideas and techniques persuaded his associate Clark, "it was time that British archaeology developed from the stage of surface collection of finds . . . to a stratigraphic approach," stated Godwin (1978:45).

Clark was also influenced by his visit to Denmark and Sweden in 1929 where he met with the renowned scholar S. Müller and the Swedish archaeologist T.J. Arne and O. Rydbeck. By the late 1920s, archaeology in Sweden and Denmark had a long tradition of cooperation between diverse scientists and an established tradition of stratigraphical excavations. For example, according to Klindt-Jensen (1975:94), Müller based his 1898 chronological analysis of Jutland single grave cultures on a "sophisticated use of stratigraphical evidence." And, in an article in the 1885 edition of Aarboger, Müller had mentioned the importance of collaborating with zoologists, chemists, and botanists (Klindt-Jensen 1975:93). In 1900, he had published the results of a series of excavations conducted by the second kitchen-midden commission. This commission included three archaeologists, a geologist, a zoologist, an osteologist, and a botanist. In addition to meeting with Müller and others, Clark had studied Baltic assemblages firsthand while visiting the Danish National Museum (1931c). His supervisor, M.C. Burkitt (1932a: xiii), in the preface to Clark's dissertation, complimented him on his "more than merely competent knowledge of Mesolithic industries . . . particularly in the Baltic regions." By 1931 Clark was well aware of Scandinavian archaeology and its accomplishments.

Clark was also fortunate to be at Cambridge, where numerous diverse specialists were present and willing to co-operate. G. R. Willey (1991:224) makes this point in his review of Clark's *Prehistory at Cambridge and Beyond*: the "successful bringing together of prehistorians, anthropologists, Classical and Middle Eastern archaeologists, historians, linguists and people from the natural sciences has been the Cambridge

achievement." He also notes that prehistoric archaeology at Cambridge took its special form in an interdisciplinary context during the 1910s and 1920s. Sir W. Ridgeway, the Disney Professor of Archaeology, under the Board of Anthropology established in 1904, drew no clear line between anthropology and archaeology and taught courses in history, classics, archaeology, and anthropology. The first Disney Professor for the Faculty of Archaeology and Anthropology, formed in 1926, Sir E. H. Minns, was a Russian and Classical scholar. According to Willey, Cambridge has always encouraged interdisciplinary collaboration and communication.

Clark had become acquainted with the Godwins, while still a research student in archaeology at Cambridge. Godwin and his wife, M.E. Godwin, were students of the eminent Cambridge and Oxford ecologist, Sir A.G. Tansley. In 1931, Tansley had suggested to M.E. Godwin she begin research in pollen analysis. According to H. Godwin (1978:21) this technique had been "brought to notice by papers written in English by the Swede, G.E. Erdtman, who reported some preliminary studies of peat deposits in the British Isles." When Clark was finishing his dissertation, H. Godwin was Senior Demonstrator in the Cambridge Botany School. The Godwins and Clark actively collaborated throughout their long academic careers, and both were founding members of the Fenland Research Committee.

In his announcement of the formation of the Fenland Research Committee, Burkitt (1932b:453) wrote, "for some time past several people at Cambridge have felt that a research committee of experts in the various branches of science required should be formed to undertake a comprehensive study . . . for a proper study of the fens, many

different lines of investigation are required." The Fenland Research Committee was founded in the Upper Parlour at Peterhouse College, Cambridge on June 7, 1932. The committee, at peak membership, was a loose association of forty-two specialists, which combined the resources of archaeological, biological, geographical, and geological learning. This working group of diverse experts enthusiastically addressed themselves "to unravelling the complex story of the Fenland" (Godwin 1978:7). Sir A. Seward, a palaeobotanist, was chosen President, Major G. Fowler became Vice-President, and Clark was elected Honorary Secretary. At about the same time, Clark was offered a research fellowship at Peterhouse College, which gave him "a chance to press ahead with the research promoted by the Fenland Research Committee" (Clark 1989:56). From 1933 to 1940, Clark published eight site reports and articles in cooperation with The Fenland Research Committee and worked with members of the Committee on several other reports from outside the Fenland area. In this chapter, I discuss the work Clark published during this association.

The excavation of the Plantation Farm, Shippea Hill, site was the first enterprise undertaken by the Committee. To paraphrase Phillips (1951:263 - 265), this and a second excavation at Peacock's Farm, Shippea Hill, published in 1935 (Clark 1935a) became the Committee's most important work. The results of these excavations established the vertical relationships of prehistoric occupations in the English Fens. The report on the Plantation Farm excavation was compiled by Clark (1933a), who directed the project. He wrote the introduction, analysed the Bronze Age artifacts, drew the sectional diagrams which illustrated the positions of the finds and the geological

stratigraphy of the area, explained the methods used, and summarized the team's conclusions. The purpose of the project was to study "post-glacial changes of environment in relation to man," and establish the stratigraphical context for the Early Bronze Age (Clark 1933a:266).

Clark plotted the debris from an occupation site found under the first layer of peat. He classified the flint and quartzite remains as typologically Beaker-Early Bronze Age, noting that "the main assemblage . . . conforms to what we have come to expect of the early phases of the Bronze Age" (Clark 1933a:271). Some of the pottery sherds were typical Beaker ware and the technique of flaking was "characteristic of the work of this period" (Clark 1933a:271). Here Clark generalized more frequently than in his earlier work, using adjectives such as "typical" or "characteristic" and pointing out what he had come to expect. By 1933, Clark had become knowledgeable not only about the typological attributes of distinct lithic assemblages, but also about how these assemblages might be expected to fit together in a relative chronology.

In order to learn more about the history of the site and the surrounding area, in addition to the trenching, 15 bore holes were sunk, the deepest 8.5 meters. These core samples supplied the data needed to establish a stratified sectional view of the edaphic conditions and deposits, and supplied the Godwins with material for their pollen analysis of the upper and lower peat levels. They concluded that the lower layer of peat began to form in the Late Boreal era, when the floor of the southern part of the North Sea was covered by fen. They also found evidence that following the formation of the lower peat, a subsidence of land levels occurred during the Atlantic climatic phase when the

area was covered with tidal estuarine silts. Re-elevation of the land followed, permitting the formation of the upper layer of peat during the Sub-Boreal.

Both the Godwins and Clark were aware of the relative climatological time scale that had been established for Scandinavian archaeology by 1931. This scale correlated geological, botanical, climatic, and archaeological events, roughly matching the Boreal with Mesolithic sites, the Atlantic with the Late Mesolithic and early Neolithic, and the Sub-Boreal with the Early Bronze Age. De Geer's varve chronology had tentatively assigned years to these correlations. When the Godwins found, through pollen analysis, that the upper peat layer had been formed during the Sub-Boreal climatic phase, their research supported the results of Clark's typological analysis which classified the flints as Early Bronze Age. "In the period before absolute physical means of dating were available, the importance of such a background means of correlation and reference was immense," Godwin (1978:24) later wrote.

The evidence Clark obtained by studying the stratigraphy of the trenches suggested the Early Bronze Age occupation of the sand-hill had begun after a few inches of the upper peat had formed. This was confirmed by the Godwins' analysis of aquatic plant pollen which suggested during the Early Bronze Age the hillock was surrounded by a shallow swamp. Clark concluded that as a dry island in a swamp, the sand-hill must have been a very desirable location.

As in earlier articles, Clark (1928, 1932a, 1932c) compared the finds from this site with finds from other sites in the vicinity. He noted at a nearby site, Early Bronze Age artifacts had been found under a layer of peat, stratigraphically agreeing with

Shippea Hill. Clark was concerned with correlating evidence from area sites, in order to strengthen the results of the pollen and typological analyses.

The resulting site report consisted of several distinct sections. J.W. Jackson, a faunal expert and geologist from the Manchester Museum, presented an analysis of the animal bones recovered from the excavation: the remains of wild animals were rare, suggesting hunting was not carried out to any extent. Domestic oxen were "most abundant, followed by the pig, and then sheep," he (1933a:278) concluded. These results indicated a Bronze Age lifestyle, supporting the pollen and artifact analyses. W.A. Macfadyen, a geologist, added a report on the species of marine organisms which resided in the clay and silt. "There seems to be indicated a transition from semi-marine silty clay to nearly freshwater siltless clay immediately before the deposition of the overlying upper peat" (Macfadyen 1933a:291). A.S. Kennard provided a report on the non-marine mollusca obtained from the core samples. This evidence showed a sequence of water changes in the Fens. Both Kennard's and Macfadyen's results corroborated the Godwins' conclusion that a subsidence and re-elevation of land had occurred. J.C. Maby analysed the charcoal found in the two hearths, concluding that it had come from oak, and O.T. Jones studied the hearth's whitish material, finding that it was derived from chalk rock, which apparently had been transported to the site.

Combining all these reports Clark used the convergence of several independent lines of investigation to reconstruct a history of the human occupation of the site and of the geological, geographical, climatic, and botanical changes of the Fenland in which the site was located. This was a sophisticated effort which offered a breadth of information

uncommon in modern excavations. It was a classic example of the mutual benefits of combining archaeological, geological, botanical, and faunal analyses.

The second Shippea Hill excavation at Peacock's Farm was started in 1934. Surface finds typologically of the Late Tardenoisian and one Tardenoisian micro-flake located in the lower peat, had been found in 1932 at Plantation Farm, and Clark suggested he could establish the stratigraphical position of this culture by excavating again in the area. He suspected also the Tardenoisian level would be found at great depth, and hoped to confirm the stratigraphy found in the first excavation for the Early Bronze Age artifacts. From these excavation cuts, Clark and the Godwins obtained evidence which corresponded to the early Bronze Age level at Plantation Farm. Neolithic "A" pottery was found in the lower peat below the Bronze Age surface. A typical Tardenoisian core was found with other worked and calcined flints in a well-defined black band below the Neolithic "A" evidence. The stratigraphy was very clear. "The recovery of Early Bronze Age, Neolithic "A" and Late Tardenoisian remains in vertical stratigraphical succession in one section is unique," Clark (1935a:297) observed.

Clark found a correlation between this stratigraphy and the state of preservation and the degree of patination of the artifacts. Both attributes depended upon how long the artifacts had been exposed before the formation of the peat. Clark also used the results of the Godwins' analysis of peat samples, which confirmed "the reality of the stratigraphy so closely that it can be regarded as fixed" (Clark 1935a:295). Using more than one line of evidence to confirm his findings was consistently characteristic of Clark's work.

Clark discussed the typological affinities of the microlithic industries found in the lower layer of peat. He used information about micro-burins from his dissertation to help establish these affinities. "The typical method of micro-burin and microlithic production indicated by the debris show quite clearly that we have to deal with a Tardenoisian culture," observed Clark (1935a:304). The forms of microliths, "indicate a fairly advanced stage of this culture," because more specialized forms occurred in the assemblage (Clark 1935a:304). As in earlier typological studies, Clark assumed lithic forms evolved, that they could be arranged in an evolutionary sequence by comparing morphological changes, and specialized were later than unspecialized forms.

In their analysis, the Godwins (1935a:309-311) noted the pollen sequence obtained from the lower peat "is one quite typical of the end of the Boreal climatic period," and "these pollen analysis results afford extremely strong grounds for correlating this microlithic industry with other mesolithic sites in this country," which had been dated by pollen analyses to the same period. Pollen analyses of the upper peat confirmed the sequence from the upper peat of Plantation Farm. Both sites yielded Early Bronze Age artifacts a few inches from the bottom of the upper peat layer. Once again, the Godwins' pollen analysis results corroborated Clark's typological and stratigraphical work. And the stratigraphical, typological, and pollen results from Peacock's Farm confirmed the Plantation Farm conclusions.

Clark summarized the conclusions of the report. For the first time, Neolithic "A" ware was found in a post-glacial peat bed, which helped to date the Neolithic "A" culture. Also for the first time in British archaeology, a microlithic industry had been

found in a peat bed and therefore, stated Clark (1935a:318), "related to forest development in a certain and definite way in Britain." The stratigraphy of Early Bronze Age, Neolithic "A" and Late Tardenoisian in clear vertical succession was unique in British research. A full picture of the environmental setting became clear when M.H. Clifford's report on plant remains, the Godwins' report on pollen, and A.S. Kennard's and C. Oldham's results of mollusc shell studies were combined. During the Mesolithic horizon, a period of relative stability, geologically, alder and pine dominated the woodlands and the area immediately around the site was a swamp. During the Neolithic "A" horizon, the climate was warmer and the area drier. By the Early Bronze Age, after a period of submergence, willows and reeds grew near the settlement. The team of researchers successfully correlated botanical, geological, and archaeological evidence, setting British assemblages in a more detailed environmental context.

Phillips (1951:272) included Clark's 1933c article on Norfolk Neolithic and Beaker remains in a list of publications of the Fenland Research Committee. In this report, S. Piggott classified the Neolithic pottery, H. Beck examined a jet bead, suggesting that it belonged to the Bronze Age and Clark classified the Beaker pottery by describing and comparing certain attributes such as decoration and general form. Here he used the classification system he had established in his 1931b article on Beaker pottery. This article demonstrated that even if the project was not a major excavation, Clark was now taking the opportunity to collaborate with diverse specialists, and to include their reports as separately titled items within the final presentation.

Other archaeologists were doing the same. E.C. Curwen used an interdisciplinary team during his excavation at Whitehawk during 1932-1933. Although this excavation was not associated with the Fenland Research Committee, the project was conducted and reported in a similar manner and used specialists from the Committee. Piggott produced a report on the pottery artifacts; Clark (1934f) provided the flint implements analysis, finding that they were typical of the Windmill Hill culture; Jackson provided the faunal analysis; Tildesley examined the human remains; Kennard reported on the mollusca; Maby studied the charcoal from the hearths. However, Curwen did not tie these reports together in a summary and did not demonstrate how each report converged to support a conclusion, as Clark did so ably and forcefully in his publications.

In his 1933 paper, which described surface finds from Somerset, England, Clark analysed assemblages with the help of another member of the Committee. Because of the presence of true burins and microliths of non-geometric form, and the apparent absence of the micro-burin, Clark concluded that the artifacts were early Mesolithic in age. Clark (1933d:65) continued, "Fortunately, however, we are not entirely dependent on typology for our dating . . . the industry occurred in top-soil being separated from the Burtle beds proper of Mousterian age by an intervening stratum of grey sandy sub-soil." Therefore, Clark had stratigraphic as well as typological evidence available to him, and he enlisted the advice of J.W. Jackson, who studied the sandy deposit, dating it to the Magdalenian. Clark was using stratigraphic information wherever possible. In this article, he also presented more general geological data about the site than he did in articles from the late 1920s.

In 1933, S. H. Warren, Clark, the Godwins, and W. A. Macfadyen collaborated on the excavation of a site found under peat at Broxbourne. This project, too, was not under the auspices of the Fenland Research committee, but all the participants were members of the Committee and the work was interdisciplinary. Clark (1934d:109) presented the report on the flint industry and its affinities, suggesting that the location was a "squatting site where flints were knapped and fires were lit." He concluded this because numerous artifacts showed "no signs either of use or of secondary work"[10] (Clark 1934d:110). Clark suggested the flints had been sealed soon after their manufacture by a peat deposit, ensuring the homogeneity of the industry. As we have seen, homogeneity was one of the attributes of an assemblage which Clark had stressed as important in his earlier typological articles. Also, as in his earlier work, Clark classified the flints descriptively by suggesting a broad, functional category, for example, core scrapers, burins, axes, and hammerstones.

"Typologically Broxbourne falls clearly into that group of axe, burin, and non-geometric microlith industries of south-eastern England which represents an extension of the mesolithic forest cultures [described by Childe]," wrote Clark (1934d:119). Here he was referring to Childe's 1931 article which gave a thorough description of Northern Europe Mesolithic assemblages (Childe 1931a). As discussed in the previous chapter, Clark had suggested in his dissertation the Maglemose and Duvensee cultures had influenced south-eastern English assemblages, and that all three phases of Scandinavian

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[10]Here Clark was assuming a direct relationship between artifact remains and behaviour. This assumption has been questioned during the 1970s and 1980s. For example, Shott (1989:9) states "simple and direct relations between the kind and frequencies of activities conducted at a site on the one hand and the tools discarded on the other, do not always obtain."

forest cultures had counterparts in England. Clark's 1932 arguments, parallelled Childe's 1931 presentation. But, by 1934, in the Broxbourne report, Clark had access to the results of Godwins' pollen analyses, which confirmed an early Mesolithic Maglemose date for the Broxbourne artifacts. The pollen analysis "yielded direct evidence of date independent of any typological considerations," stated Clark (1934d:123). Broxbourne was the first complete flint industry from this area to be assigned to the late Boreal period in Britain. In this excavation, Clark's major aim was to establish a relative chronology for this site.

His goals were made clear again in a 1934 article, written as the Honorary Secretary of the Fenland Research Committee. "With the aid of modern techniques it is now possible to learn from them the sequence of climatic and geographical changes and the alterations in animal and plant life which formed the background to the existence of prehistoric man and provide the modern investigator with a delicate chronological scale against which successive cultures may be dated" (Clark 1934e:144). As in previous work, Clark's primary goal was to establish a chronological sequence of cultures.

Shortly after, the Godwins, Clark, and Clifford (1934j:398) publically requested "anyone finding bronzes or antiquities of any kind in the area of the Fenland" immediately communicate with the Fenland Research Committee, so that the vegetational history of the site could be investigated. For example, a Bronze Age spear-head had been found in the Norfolk Fen and the Godwins and Clifford had fortunately been able to obtain a sample of the peat from beneath the site. By studying tree pollen indices, fern spores, and microfossil remains such as mosses, the authors could suggest that the

area had been covered by shallow water prior to the Bronze Age. "In this case it seems likely that a great increase in wetness of the fens accompanied the Boreal-Atlantic transition," the Godwins et al. (1934j:398) concluded.

In March 1935, Clark began excavating a settlement site in Mildenhall Fen, West Suffolk, with the help of the Cambridge University Archaeological Society, conducted under the auspices of the Fenland Research Committee. According to Clark (1935c:133), its purpose was to establish "a further correlation between the natural history and the human settlement of the fens." A concurrent goal was to study, Clark (1936b:29) stated, "the mutual relations of the invasive and the indigenous folk" of the West Suffolk area during the later Bronze Age.

Clark used attributes such as form and the presence or absence of various types of decoration to classify the excavated pot sherds. His choice of attributes and his method of comparing, by visually scanning artifacts, did not differ from the work he did in 1931 on Beaker pottery (1931b, 1931d). He constructed a distributional map of Deverel-Rimbury finds to show that the Mildenhall excavation was peripheral to the major areas of "primary diffusion" of the Deverel-Rimbury pottery types (Clark 1936b:29).[11]

Although several of the pottery types excavated had strong affinities to Deverel-Rimbury ware, Clark (1936b:40) found that one type was "most unusual; indeed, it seems to have no immediate parallels." Because of its stratigraphic location he concluded it was contemporary with other Late Bronze Age sherds from the site. He labelled this

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[11]His use of the phrase, "primary diffusion," suggests he believed that diffusion rippled out to peripheries from a primary core area.

type "Mildenhall ware", suggesting that it was local and illustrated a native tradition. The contrasting pottery types found at this site suggested to Clark (1936b:49) evidence of contact and some degree of continuity "between the indigenous Middle Bronze Age folk and the new-comers associated with the arrival of Deverel-Rimbury pottery." He also noted this was one of the few settlement sites found for the late Bronze Age in the Cambridge region.

H. Godwin, M.E. Godwin, and M.H. Clifford's report on the plant remains recovered from the peat confirmed Clark's typological analysis. This site was Late Bronze Age and therefore younger than the Shippea Hill sites. The Godwins suggested the predominance of alder indicated wet conditions. Settlement in the Shippea Hill area seemed "to have been terminated by the onset of damp conditions," Clark (1936b:32) wrote. He (1936b:49) concluded that "it is evident that by the Late Bronze Age man had been forced to abandon the low-lying fen for settlement [where the Shippea Hill sites 1933a, 1935a were located] and had been driven [by wet conditions] to higher ground in the margins of the fen-basin," where the Mildenhall site was located.

Establishing a cultural sequence was not a stated goal in this article, although classifying the site as Late Bronze Age was readily accomplished by Clark's typological analysis of sherds and the Godwins' pollen analysis. The discussion of which pottery sherds represented native elements and the description of "the climatic and other natural conditions" of the site took priority (Clark 1936b:33). The goal of determining a relative chronology was muted by other considerations.

In 1936, Warren, Piggott, Burkitt, the Godwins and Clark formed a sub committee of the Fenland Research Committee and published a survey of the archaeology of the Essex coast. Clark wrote the introduction and provided an analysis of the Palaeolithic, Mesolithic, Neolithic, and Beaker lithic artifacts. He relied on his earlier typological and distributional work (Clark 1928, 1932a, 1932b, 1932c and 1934c) to help place the artifacts in their appropriate period and cultural association. The Godwins presented the results of their pollen-analysis, and Piggott described and classified the pottery remains. Synthesizing these reports, the authors concluded that the "investigation of the old land-surface exposed on the foreshore of the Essex Coast has revealed a phase of relative land-elevation succeeded by one of subsidence" which was the same broad sequence of events established in the Shippea Hill excavations (Clark 1936f: 209). The authors discussed the obvious measure of agreement between the sequences from the two areas. By comparing these sequences, they hypothesized the B Beaker folk reached southeastern Britain before the A group, and the "'buttery clay' phase [from the Shippea Hill sites of 1933 and 1935] must be sandwiched between B and A Beakers in the Fen area" (Clark 1936f:210). The committee members were advantageously synthesizing the results of several years of excavations, solidifying a sequence of cultures for the Fenland.

In 1938, Clark investigated a site at Bryn Newydd sealed under two feet of tufa. Clark (1938b:330) noted this find "provides us with that rare phenomenon in Welsh archaeology, a well insulated mesolithic industry." The Fenland Committee did not sponsor the report because the site was in Wales. However, Clark collaborated with members of the committee during the investigation. In discussing the flint industry,

Clark (1938b:330) stated "the fact that the microliths were made by the notch method, resulting in the production of so-called 'micro-burins,' relates the industry to the Tardenoisian." In his 1932 dissertation Clark had argued micro-burins were actually a by-product of knapping lithics and a "type" flint for the Tardenoisian. Here, in 1938, he restated the argument, suggesting the site was dated to the Mesolithic.

Jackson presented a report on the geology of the site, which concluded the tufa had been formed during the Atlantic climatic phase, a period with heavy rainfall and an abundant woodland fauna. Because the Atlantic phase correlated with the later Mesolithic, this evidence corroborated Clark's typological results. "There is no typological difficulty in accepting the conclusion to which Dr. Jackson's work points," Clark (1938b:330) decided.

The last report Clark produced with the Fenland Research Committee before it was suspended because of the war, was published in 1940 and investigated a Bronze Age founder's hoard stored in an alder tub found in the Fenland peat. In this paper, Clark made a case for wetland archaeology. "The high survival value of pottery causes its importance to be rated unduly high. In fact, at most times and among most people ceramic vessels have probably ranked well behind those made of more perishable substances," argued Clark (1940c:57). He emphasized the importance of exploring sites where perishable materials could survive. This was a point which Clark and the Godwins made from 1932 onward. Clark suggested wetland sites should be investigated because these sites were favourable to the survival of organic material, such as pollen grains which could be used for pollen analysis. Star Carr, which Clark began to

excavate in 1949, is a famous example of the productiveness of such a site. More recently, Coles (1987) argues archaeologists should spend more time and energy advancing wetland archaeology, because the returns are greater. The variety of information obtainable is broader. This point was demonstrated thoroughly by the Fenland Committee's work during the 1930s.

Clark (1940c:59) stated the contents of the buried hoard were "at first glance as of the Late Bronze Age." But he wished to date them more narrowly and used the manner of establishing relative chronologies which he had used earlier with lithics. The hoard was found in an area peripheral to the "carp's tongue sword" complex of south-east England. Clark explained this complex was introduced by invaders in the eighth century B.C. How then, did this hoard relate to the invaders' complex? "The feature [of the hoard] to which attention may first be directed is the ribbed palstave" (Clark 1940c:59). "Four main classes of ribbed palstave" were detectable (Clark 1940c:60). Clark mapped the distribution of each class. "The distribution of the ribbed palstave certainly suggests that it is to some extent complementary to, and therefore, likely to be contemporary with the 'carp's tongue sword' complex," concluded Clark (1940c:60). Clark (1940c:63) could then hypothesize a more exact date for the hoard, assigning it "with some certainty to the latter half of the late Bronze Age in East Anglia." H. Godwin used pollen analysis to provide a description of the forest history of the region. The pollen remains agreed with a late Bronze Age date for the hoard and indicated conditions of at least local dryness.

In 1940, the Fenland Research Committee was "fragmented by the Second World War and never effectively reconstructed afterwards," writes Sir Harry Godwin (1978:108). The Godwins' and Clark's goal had been to match Scandinavian post-glacial events with those in Britain and assign tentative dates to British assemblages. The Committee had accomplished these goals splendidly. The Shippea Hill excavations quickly became internationally recognized and since have become regarded as a landmark in British archaeological method because they convincingly demonstrated the potential of applying quaternary research to British post-glacial sites. The excavations "heralded a widespread change in manner of approach to the problems of British prehistoric archaeology," writes Godwin (1978:55) and laid the foundation for the establishment of the Sub-department of Quaternary Research at Cambridge in 1948. The Committee successfully reconstructed a broad outline of Fenland history and the relative dating conclusions have "held up astonishingly well" to more recent radiocarbon dating efforts (Godwin 1978:108).

Discussion and Conclusion

During his association with the Fenland Research Committee Clark (1933a, 1935a, 1934d, 1936b, 1938b, 1940c) used typological analyses similar to those used in his earliest studies. For example, the typological methods he employed to date the metal artifacts, palstaves, in his last article were strongly reminiscent of those used in his dissertation to establish relative chronological relationships for lithic assemblages. In both instances, Clark classified artifacts according to morphological differences, mapped

the differing classes to establish their distribution, and assumed that complementary distributions implied contemporary cultures. At both Shippea Hill excavations (1933a, 1935a) and the Welsh tufa site (1938b), Clark relied on the results of earlier research to help classify artifacts, and also used his Beaker pottery studies (1913b, 1931d) to aid in classifying Mildenhall ware (1936b). As in his earlier work, he equated an assemblage with a culture and a "folk," seemed to assume that lithic and pottery forms evolved from simple general ancestors to more complex descendants, to think that artifacts and cultures became more differentiated over time, and continued to arrange forms in an evolutionary sequence by comparing morphological changes. During the 1930s, Clark became extremely knowledgable about the typological aspects of British assemblages and how these assemblages would be expected to fit together chronologically.

Clark continued to consider archaeology to be "the study of past distribution of culture-traits in time and space, and of the factors governing their distribution" (Clark 1933h:232). This was especially evident in his study of Mildenhall pottery types in 1936 when he used a distributional map to demonstrate the extent of Deverel-Rimbury pottery finds and the relationship of these finds to the Mildenhall site, and again in 1940, when he compared the complementary distributions of Bronze Age founder's hoards. This definition of archaeology was also evident in Clark's consistent efforts to place sites in chronological sequences.

Clark's goals did not change during his association with the committee. His overriding aim was to establish the stratigraphical relationship of sites to post-glacial deposits in order to set up a correct sequence of cultures. For more than eight years the

Fenland Research Committee investigated the post-glacial history of the Fenland "with a view to correlating archaeological remains and recent geological deposits," commented Clark (1940c:52) in his last Committee report. Throughout his Fenland publications, Clark (1934e:144) acknowledged learning about "the alterations in animal and plant life, which formed the background to the existence of prehistoric" humans, was a major focus and goal of team members. But, he consistently used the innovative methodologies of pollen and faunal analysis and the vast amount of information resulting from the natural science reports, to serve his goal of establishing relative dates for British prehistoric sites. One of his great triumphs occurred during the Peacock Farm excavation, when he was able to announce the recovery of Mesolithic, Neolithic, and Early Bronze Age remains in distinct vertical stratigraphical succession (Clark 1935a:297).

Although Clark's definition of archaeology did not change during his association with the Fenland Committee, he did broaden his methods. He began to stress the importance of excavating in order to study past distribution of cultures more adequately. In striking contrast to his earlier work, which researched primarily surface finds, his major Fenland investigations involved intensive digging. Occasionally during his reports, Clark would mention advances in excavation techniques. For example, at the Plantation Farm site, the crew contended with extensive flooding which they learned to control by leaving strategically placed balks (Clark 1933a:268). They also had to learn to preserve pottery sherds taken from submerged surfaces. Warren suggested soaking the fragments in fresh water and then hardening them with resin-turpentine (Clark 1936f:186). Unfortunately for historians, many such innovative developments may have occurred but

went unreported in the final published articles, because formal papers do not usually report this level of work.

His stress upon excavation was one of Clark's innovative contributions. "The crux of archaeology is excavation," Clark (1989a:66) later wrote. "A special weakness of the teaching [at Cambridge] was that before the Second World War none of the teaching officers in archaeology were [except for himself] engaged in primary research" (Clark 1989a:42-43). It was only his and the amateur T.C. Lethbridge's local work, and Leakey's, Caton Thompson's, and Garrod's activities abroad which allowed Cambridge students to learn about archaeology as excavation.

Clark's great strength in the Fenland publications was his ability to synthesize several independent lines of evidence forcefully and clearly and to show how this varied information converged to support a conclusion. For example, in his Shippea Hill reports he tied diverse scientific sections together in a convincing conclusion demonstrating the value of an interdisciplinary approach. Using the results of different lines of investigation to enhance his argument was consistently characteristic of Clark's research.

Another strength was Clark's choice of sites. As one of the founding members, Secretary, and archaeological director of several excavations for the Committee, he argued for the investigation of wetland sites which preserve organic material (Clark 1934e:146, 1940c:57). A wide variety of remains can survive if waterlogged, such as pollen grains, mosses, insects, nuts, mollusca, wooden and reed artifacts, and animal bones. The work of the Fenland Research Committee is a fine testimony to the productivity of wetland archaeology.

A puzzle emerged from Clark's work with the Fenland Committee when he did not expand his goals. As the decade proceeded, the team continued to take advantage of new pollen and natural science analyses to produce a broad, contextual picture of the climatic, geological, floral, faunal, and geographic circumstances which formed the background for the Fenland's prehistoric peoples. The researchers learned that the Peacock's Farm residents ate pig, bred oxen, and burned alder and oak in their fires (Clark 1935a). By the later Bronze Age, because of increasing dampness, this site had been abandoned and people had chosen to settle on higher ground (Clark 1936b), and during the Atlantic climatic phase, the inhabitants of Wales endured heavy rainfall (Clark 1938b).

With this information, prehistoric Britains became more alive and accessible to our imagination. We no longer pictured them as little people endlessly knapping microliths, producing micro-burins as by-products, and dropping debris in unintelligible ways. We were given an idea of what they ate, what wood they relied upon for fuel, and began to see them against a natural setting, coping with harsh weather and changing climates. The interdisciplinary approach provided information on lifeways.

Clark did not discuss these precise benefits in his Fenland articles. With the massive onslaught of new data, by the end of the decade, one might have expected him to have begun to use this information for other purposes, such as the economic and social reconstruction of prehistoric lives, as well as for dating. This will be one of the areas I discuss in the conclusion.

The East Anglian Society of Prehistorians was founded in 1908 by "amateurs of prehistory [who shared] a passion for flints [and] an interest in Quaternary geology," writes Clark (1985c:1). In 1909, the group became The Prehistoric Society of East Anglia and in 1910, decided to publish its proceedings. Membership expanded rapidly during the 1910s, plateaued at 310 to 320 during the 1920s and began to decline during the early 1930s.

The Society's dominant and most controversial member during this period was J. Reid Moir, who was trained as a tailor, but who enjoyed collecting flints. In 1909, he claimed to have discovered humanly flaked flints or "eoliths" of sub-Crag, pre-Palaeolithic age in Ipswich. According to Clark, Moir cultivated a home base in the Prehistoric Society of East Anglia in order to gain a platform and a place to publish his passionate opinions (Clark 1985c:3). One of the founders of the Society, W.G. Clarke, accepted Moir's findings without hesitation and during the 1910s and early 1920s, W.J. Sollas, M. C. Burkitt (later Clark's supervisor), Sir E.R. Lankester, R.A. Smith, and J.E. Marr of the Cambridge Geology Department were also converted by Moir, agreeing that eoliths were produced by Pliocene humans. Many other intellectuals, such as S.H. Warren, who later worked with the Fenland Research Committee, and B. Dawkins, argued that eoliths were the result of natural forces, a view which eventually triumphed in the 1930s. However, from 1909 to 1934 Moir published continuously on pre-Palaeolithic eoliths in the Society's *Proceedings* and was very active on the Society's executive.

Clark, who joined the Society with his friend S. Piggott in 1929, began to publish in the *Proceedings of The Prehistoric Society of East Anglia* in 1928. C. Phillips, V.G. Childe, and L. Grinsell joined the following year. Despite Clark's (1985c:1) disclaimer that his "hands are not dripping with East Anglian blood," he had quickly become influential in changing the Society. R. Chapman (1985:17) quotes the Society's secretary and Moir's associate, G. Maynard as stating "during the two years 1929 and 1930 it became known, through indirect channels, . . . that the management of the Society was being subjected to adverse criticism." When discussing this period, Phillips (1987:52) notes, "there were now a number of the rising generation of new enthusiasts who wanted to see the Society widened and its affairs no longer held up to ridicule by some of the barren controversies about the antiquity of Man which disfigured its proceedings."

Clark was first elected to the Society's Committee in 1932, and W.F. Grimes and J.F.S. Stone, who C. Phillips (1987:52) describes as strong advocates of change, were elected members of the Committee in 1933. By Part 2 of volume 7 (1933) of the *Proceedings,* Clark had become Acting Honorary Editor, a new position. In the same volume, Clark introduced a new section entitled "Notes on Excavations in England, Scotland and Wales in 1933," written by himself, V.G. Childe, and W.F. Grimes. Of this addition, Clark (1933q:263) observed the notes were "designed to keep our members in touch with current work . . . up to and including the Early Iron Age." He was careful to comment that his report was intended to be complementary to Mr. and Mrs. C. Hawkes' extensive review of literature published in *The Archaeological Journal*, and he diplomatically included a review of Moir's most recent pre-Palaeolithic finds. However,

Moir and Maynard, the Secretary, felt sufficiently concerned to ask for a vote of confidence in themselves at the 1933 annual meeting, which they received.

At the 1934 annual meeting, Clark was promoted from Acting Honorary Editor to Honorary Editor and new rules were passed which included the Honorary Editor in both the Council and Executive Committee, giving him a formal position of influence. According to Piggott (1989:26), at this time, "the take-over of The Prehistoric Society of East Anglia was being engineered . . . . We timed a critical meeting in Norwich in February 1935 so as to render it inconvenient for the opponents to dropping 'of East Anglia' from the Society's title to attend." The motion was made by Clark, easily passed, and the first volume of *The Proceedings of the Prehistoric Society* was published later that year. Clark remained Honorary Editor of this journal for 35 years until 1970.

The Society was no longer East Anglian in scope or pre-Palaeolithic in emphasis and the switch to a broader, more comprehensive, national perspective successfully brought in eighty three new members during the first ten months. The reform movement went further in 1936 when, writes Phillips (1987:52), "a clean sweep was made of the Honorary Secretary and Honorary Treasurer." Phillips replaced Moir's colleague, Maynard, as Honorary Secretary, retaining that position until 1948. Membership continued to increase sharply, doubling the 1934 number by 1938, "a marked jump given the virtual standstill in the PSEA membership since 1920," writes Chapman (1985:19). This is a remarkable change considering that other comparable organizations, such as the Royal Archaeological Institute of Great Britain and Ireland and the Cambridge

Antiquarian Society, experienced no membership increases at all during this period of economic depression.

Chapman (1985:18) suggests that "a new generation of professional prehistorians had seized control of the Society, making its interests both national and international" and revitalizing it. In his assessment of Clark's work, G. Sieveking (1976:xvii) comments, "it was as a result of the transformation of the Prehistoric Society of East Anglia into the Prehistoric Society . . . that a platform was made available in Britain" for the publication of evidence from the biological sciences. The content of the *Proceedings* changed, now stressing national, interdisciplinary concerns. Writing in *The Archaeological Journal*, J.B.W.P. (1936:295-297) complimented the Prehistoric Society on its achievements as a national body and noted the predominance in the new *Proceedings* of interdisciplinary articles which discussed "aspects of archaeology in which physiographical changes have played a determining part." Articles from specialists other than archaeologists were often solicited. For example, in 1936 the zoogeographer P. Ullyott, published a study of the distribution of flatworms and explained how this distribution could be used to date relatively the separation of England from the Continent. P.G.H. Boswell, a geologist, was invited to be the Society's second president in 1936 and his presidential address argued the case for cooperation between the two disciplines of archaeology and geology.

During the late 1930s, in his editorial notes, Clark often discussed the usefulness of geological, botanical, and zoological evidence to archaeological interpretation and used the *Proceedings* to describe and publicize new advances in technique which had emerged from the Fenland Research Committee's work. In 1936, he began to publish some of

the research he had conducted with the Committee (Clark 1936f, 1938b, 1939c) in the *Proceedings,* and added a section entitled "Current Prehistory." "It is only necessary to say that twelve of the thirteen articles [in this section] came from the voracious pen of the editor in order to indicate the catholicity of the choices of subjects discussed," wrote J.B.W.P. (1936:297) in his review. In the same year the *Proceedings* expanded to two volumes annually and by 1937 "Current Prehistory" began to appear in both yearly editions.

By this time, Clark had replaced Moir as the predominant figure in the *Proceedings* and in the Society, and was using the journal as Moir had, as a platform. The headquarters of the new society were moved from Ipswich to Cambridge University where Clark edited the *Proceedings* from the University Museum of Archaeology and Ethnology. He was responsible for soliciting articles, oversaw the composition of the journal, wrote many of the book reviews, edited the section entitled "Notes," compiled and helped to write the "Notes on Excavations," contributed a lengthy, detailed evaluation of recent research in "Current Prehistory," and published his own excavations of Arminghall (1936c) and Farnham (1939b) as well as the articles mentioned above, which he wrote with the Fenland Research Committee (1936f, 1938b, 1939c). Thus Clark was very influential in a journal which was a major vehicle of communication amongst archaeologists in Britain.

In 1936 Clark married Miss G.M. White of Girton College, Cambridge University, who was first mentioned in the *Proceedings* in the "Notes on Excavation in England in 1933." She was an active archaeologist who conducted several excavations

and published her results (White 1934a, 1934b, 1935, 1936). White had helped Phillips excavate a long barrow in 1933 and had excavated with Clark both at the Mildenhall site and at the Arminghall monument. Once married, the Clarks' worked together until the War, first at the Cambridge Antiquarian Society's excavation at Limlow Hill, and later with W.F. Rankine at the Farnham site.

On September 3, 1939, the Society's Council decided to suspend ordinary meetings until further notice due to the outbreak of war. The *Proceedings* continued to be published but the volumes were greatly reduced. In 1942, for example, there was only one volume with four articles, without "Notes," book reviews or "Current Prehistory." The Society resumed meetings six years later on January 23, 1946, when Clark read a paper on seal hunting in the Stone Age. Only 45 members had been elected during the six war years, in great contrast to the rapid growth of the late 1930s.

Shortly after his appointment as Faculty Assistant Lecturer in the Cambridge Faculty of Archaeology and Anthropology in 1935, Clark published his synthesis of northern European prehistory[12]. Partially paid for by Phillips and Burkitt, this book was well received in Britain and Scandinavia. In his autobiographical sketch, the Danish archaeologist, C.J. Becker, (1989:118) writes, "two scholars were specially important for us in the 1930s. One was V. Gordon Childe . . . The other was Grahame Clark, whose book *The Mesolithic Settlement of Northern Europe* (1936) was given an

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[12]Phillips (1987:48) writes Burkitt visited an excavation which he and Clark were conducting in the summer of 1934 "to enable him [Burkitt] to judge how far the new people who were appearing at Cambridge such as Grahame Clark and myself could any longer be excluded from the official side of archaeology in the University." If this were true, Burkitt had seen enough by 1935, since both Phillips and Clark were offered positions in the Faculty.

enthusiastic reception," because large scale research on the Mesolithic had just begun in Denmark. In his review, A.L. Armstrong suggested the book was valuable to British audiences because it presented cultural sequences within their environmental context. He observed Clark's conclusions were "immensely strengthened by the synchronization of independent researches by geologists, biologists, archaeologists, and botanists. The book is a striking example of what can be achieved by co-operation of this nature" (Clark 1937:68-69).

As discussed previously, Clark had been fascinated by interdisciplinary Scandinavian archaeology and knowledge of northern European assemblages as early as 1929, when he first visited Denmark and Sweden. In his dissertation, he compared Scandinavian and British finds and argued that Maglemosean cultures had extended to eastern England, and that during the Boreal climatic period, the North Sea was land affording easy passage between these two regions. Again in his investigation of the Plantation Farm site, Clark (1933a:293) concluded from the Godwins' analysis that during the greater part of the Boreal "fen conditions seem to have obtained across what is now the floor of the southern part of the North Sea" permitting contact with Baltic people. He returned to this theme in his analysis of the Broxbourne Mesolithic site (1934d), classifying it with the Scandinavian Axe Cultures, the Maglemose and Duvensee. The Broxbourne, Maglemose, and Duvensee assemblages represented variations of a more generalized culture which extended from England to Finland. More recently, Clark has stated the freshwater fen which stretched from Yorkshire to northern

Jutland provided a context for continuity of culture during the early Postglacial period (1972a:4).

According to Clark, interest in this broad community of culture was one of the reasons he decided to study more intensely the Mesolithic evidence from the West Baltic area (Clark 1972a:4). In 1933 and 1934, he returned to northern Europe to analyse museum and private archaeological collections and to interview European colleagues. He compiled and read a lengthy bibliography of publications from Britain, Denmark, Finland, Norway, Germany, Sweden, Poland, Estonia, Holland, Belgium, and France and read a paper presenting the archaeological portion of the book to the Society of Antiquaries in 1934, adding the natural history later.

Clark wished to publicize the Scandinavian studies of environmental change, because his experience with the Fenland Research Committee had convinced him of the importance of using natural science techniques such as pollen, faunal, and varve analysis, and he hoped his book would make this research available to a wider audience (Clark 1936a:ix).

The Mesolithic Settlement of Northern Europe began with a detailed description of the natural history of the Baltic area. Clark carefully pointed out how these natural events were relevant to dating archaeological sites. The withdrawal of ice sheets at the end of the Pleistocene was indirectly important to archaeology as a result of changes in fauna, climate, vegetation, and sea levels. As the ice receded, sediments were left in distinctive successive layers, or varves, and sections of varves from separate locations had been correlated, establishing a geochronology. This geochronology outlined the

retreat of ice over the last 12,000 years. As the ice melted, sea levels changed, and as the weight of the ice lessened on the earth's crust, land masses rose. The changing relations of land and sea were complicated but had been documented for the Baltic area. Raised beaches and extinct coastlines had been identified and the maximum age of any site could be judged by observing its relation to ancient or modern sea levels. For example, the majority of the kitchen-middens of Zealand adhered to marked strand lines left during the maximum extension of the Litorina Sea (4500-4000 B.C.).

Postglacial alterations in climate had been documented by vegetation, faunal, and marine studies and it was known that northern Europe had undergone a cycle of warm/dry and warm/damp climatic phases called Pre-boreal, Boreal, Atlantic, and Sub-boreal, as discussed in the previous section of my thesis. As a result of extensive pollen analysis on samples taken from water-logged and unaerated deposits, Scandinavian scientists had developed a general forest succession and had correlated this information with land, sea, and climate changes. For example, during the Pre-boreal, willow, birch, and pine trees dominated but as the temperature rose during the Boreal, warmth loving trees such as alder, elm, and oak appeared. Thus, the pollen analytic method had established the outlines of forest history from the Pre-boreal through the Atlantic phases over wide areas of northern Europe.

Clark used this information to produce a tripartite division of the Mesolithic which provided a general, relative chronology for the assemblages he discussed in the remaining portions of the book. This chronological framework was an elaboration of his correlation of British archaeological finds, climatic phases, and land movements produced

for the Fenland Research Committee in 1933 and 1935 at the Shippea Hill sites, and in 1934 at the Broxbourne site. In 1936, Clark was able to add approximate geochronological dates for the climatic phases, archaeological periods, and forest history of northern Europe.

His first chapter emphasized, as in previous work, the need to present several lines of evidence to confirm a conclusion. For example, he noted approvingly that archaeologists in Norway had used sequential stylistic analysis as well as sea levels to provide relative dates for arctic rock engravings. Also, in this chapter, as in his other publications, Clark's primary goal was to demonstrate how the results of natural scientific investigations could help to establish a chronology for archaeological assemblages. He wished to produce a chronological sequence of cultures.

Unlike Clark, Scandinavian archaeologists had found faunal evidence of seasonality. The occurrence of young crane bones in 1918 at the Svaerdborg, Zealand, site indicated a summer occupation. The predominance of fully developed roe deer also suggested a summer habitation. At the Zealand kitchen-middens, the presence of red deer, roe deer, and wild pig bones implied to Scandinavians a year-round settlement. Clark (1936a:49) observed the faunal remains afforded "information of predominantly cultural interest," certainly a portentous statement which suggests that Clark was becoming interested in the social implications of natural science information.

In Clark's second chapter, he discussed the Mesolithic's earliest assemblages from Period I (8500-6800 B.C.), dividing them into three groups on the basis of morphological differences in artifacts. These three groups he called the Tanged-point, Axe, and

Microlithic Cultures. The predominant culture for this period, the Tanged-point assemblages consisted entirely of blade and flake tools. Axes, adzes, picks, and maces were absent. The most characteristic implements were microliths of several types, especially tanged points in various forms. Micro-burins, a by-product of one method of manufacturing microliths, were absent but burins and flake scrapers were often present.

Tanged-point assemblages were usually found without stratigraphic, faunal, or pollen evidence but were cross dated to Period I by lithic typological analysis. For example, the German archaeologist, G. Schwantes, assigned the Ahrensburg-Lavenstedt assemblages to Period I, noting that the predominance of microliths suggested a post-Palaeolithic date while the absence of axes, picks, and microburins argued for a pre-forest (pre-Period II) culture. Clark classified the Swiderian assemblages as Tanged-point because they lacked axes, adzes, maces, and microburins, but contained tanged points and burins. He assigned the Swiderian Culture to Period I on typological similarities to other Tanged-point assemblages, and on a small amount of geological and stratigraphic evidence from a sand-dune cross section in Poland where the Swiderian appeared under the Tardenoisian. Clark (1936a:61) concluded, "it is clear that during period I substantially the same culture of which the most typical lithic form was the tanged point, extended" from Belgium to the Ukraine.

There are several similarities between this chapter and Clark's earlier typological studies. He continued to classify assemblages by: noting the presence or absence of key lithic types; making detailed comparisons of the tool types that were present; studying

techniques of lithic manufacture; and by judging whether or not the assemblages were homogeneous, that is, whether they were free from admixture[13].

Clark also continued to look for "evolved" artifacts. For example, he suggested in northern Scandinavia, "the tanged point gave rise to the triangular-sectioned flake arrowhead" (Clark 1936a:74). As in his 1928 study of flint knives, he was interested in tracing the origins of the assemblages he was investigating. By comparing lithic similarities and differences, Clark concluded the Hamburg culture was probably ancestral to the Ahrensburg-Lavenstedt. Finally, he continued to equate recurrent assemblages with a "culture."

The earliest example of the Axe Cultures, was the Lyngby Culture, characterized by axes, adzes, and hafts made of reindeer antler. These remains had been found in peat bogs and lacustrine deposits throughout northern Germany, eastern Poland, Denmark, and southern Sweden, and had been dated to Period I by pollen and geological evidence. It was also known reindeer had been abundant in Denmark and northern Germany during Period I, providing ready source material for tools.

The Lyngby Culture was followed by the rich Maglemose Axe Culture which spread across the whole plain of northern Europe during Period II. Maglemose artifacts had been found on islands or peninsulas, in bog and fen areas and near lakes and rivers. The fact that the sites were in damp areas had important consequences for archaeology, since pollen for analysis and perishable wood, bone, and antler objects could survive in

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[13]As discussed earlier, by homogeneous Clark meant a distinctive set of artifacts which demonstrated a uniformity in shape, patination, technique of production, and distribution.

such places. Extensive collections of Maglemose material culture existed from numerous excavations. A large quantity of organic remains was preserved, which had been related to the development of forest history (high values of birch, pine and hazel) of Period II by pollen analysis.

Clark had opportunity to re-examine many of these collections during visits to Scandinavia and provided an exhaustive descriptive survey of the remains. He chose to describe material culture under the headings of the chief materials employed; flint, stone, wood, amber, animal teeth, and antler and bone (Clark 1936a:92). He felt the flint artifacts were especially important because they could be used to correlate Maglemose assemblages with other cultures such as the Tardenoisian. Thus, he described these remains first, dividing the flints into seven descriptive categories, usually but not solely based on supposed function. When discussing the first category, microliths, he noted the highly evolved and minute microliths of the late Tardenoisian were absent and the Maglemose microliths were made by the notch method, a technique which produced micro-burins as by-products. The second category, burins, were an integral part of the assemblages and were most likely used for producing bone and antler objects. Another category, axes, adzes, picks, and chisels of the core type, formed a fundamental element in the lithic equipment and, he wrote, reflected "the forest environment of the habitat" (Clark 1936a:102).

At Holmegaard, Zealand, a site particularly suited to the preservation of wooden objects, two club like objects had survived which Clark suggested were throwing sticks, after the Australian ethnographic example. The oldest examples of wooden paddle-

rudders were also found. The remains of a dug-out canoe had been found at Perth, Scotland, giving certain evidence that navigation was possible during this period. Fish-netting had been discovered in a Finnish meadow which was being drained in 1920 and had been dated for Period II by palaeontological investigations, providing good evidence of fishing.

Antler and bone were extremely important in Maglemosean assemblages. Clark divided these artifacts into ten classes based on their probable function. The tenth class, for example, was comprised of bone points. These, he argued, had been used as prongs for fish spears and bird catchers. Bone points appeared in many forms and Clark (1936a:115) wrote "a study of the distribution and associations of these forms can, therefore, be made to yield peculiarly valuable information about the history of the culture." Clark's first task was to distinguish and label the chief forms, which he divided according to morphological differences. He gave each main form a number, twenty five in all, and studied the distribution, finding that certain forms occurred generally over all of northern Europe. From this distribution Clark concluded that the Maglemose was a uniform culture over a wide area.

Clark devoted an entire chapter to Maglemose art. Here again he demonstrated his talent for categorizing. "I shall . . . restrict myself almost entirely to an objective study of the [art] patterns as culture fossils," Clark (1936a:167) stated, and he created three categories of motifs. The first included all decorations which appeared to cover cracks or scars in bone or antler work. The second category included geometric motifs which he divided into twenty-four sub-categories by visually judging pattern similarities

and differences. The third included biomorphic designs which were based either on human figures or animal forms. Clark compared this extensive classification of Maglemose art with both Magdalenian and Arctic Art, finding a "fair proportion of the geometric patterns of Maglemose art are to be found also in Magdalenian art" (Clark 1936a:179). He concluded "the Magdalenian affinities of the Maglemose art are of a detailed nature . . . there is at least a reasonable probability . . . that there has been some real cultural connection" (Clark 1936a:189). Here, Clark used his analysis of art to answer an origin question. The Maglemose had developed not only from the Lyngby culture, but also from the Magdalenian.

The typological methods in Clark's Maglemose sections were reminiscent of those used in earlier work. He employed the same methods to classify bone points and art motifs as he had to classify hollow-scrapers in 1927. When studying geometric motifs, he conceptualized a broad category and then divided the category into sub-categories by studying variations in patterns. The construction of a master category, and the division of this group into subgroups by differences in form, remained the same. In both cases, form was still conceived as a two dimensional, plane outline. Clark mapped the distribution of bone point forms as he had mapped flint knife forms in 1928. Although his conclusions differed (in 1928 he was looking for evidence of diffusion, in 1936 he proved homogeneity of culture), distributional maps were important for both studies. Finally, in his 1932 dissertation, Clark hypothesized typological similarities between Belgium and British assemblages indicated cultural connections with the continent. In

a similar manner, in his discussion of Maglemose art, he concluded motif affinities implied possible cultural connections with the Magdalenian.

Clark (1936a:127) included a short discussion of the Maglemose economy and "social outlook" in which he summarized the immense amount of information which had been collected over decades in northern Europe. The Maglemose "folk" had been attracted by rivers, lakes, and fens, suggesting that fishing and fowling had been important to the economy. Pike remains had been frequently found, and fish hooks, net prickers, nets, and prongs of leisters and bird catchers had survived. Quantities of wild animal remains suggested that hunting had also been important. Broken hazel nuts from the Duvensee site implied that the inhabitants had collected nuts, berries, and fruits. There was ample faunal evidence of seasonal occupation. Many of the Maglemose sites could have been inhabited only during the dry season. Clark concluded the Maglemose people appeared to have migrated seasonally and to have lived by fowling, fishing, hunting, and collecting. Under the topic of social outlook, Clark noted settlement areas at Mullerup and Holmegaard were very limited in size and that the Maglemose people probably lived in small social groups. He commented that no burials had been found and the art motifs revealed little about religion.

This was the first time since he began to publish in 1927, that Clark devoted a section to the social and economic implications of assemblages. Clark was encouraged to think about subsistence, seasonality, size of settlement, and social groups by Scandinavian archaeologists who were discussing these topics in their description of Maglemose finds. However, describing the Maglemose economic or social ways was not

his priority: sections on economy and social outlook were short, approximately three pages in all, and he gave more space to chronology and discussion of possible Upper Palaeolithic origins of the Maglemose culture. The placement of the Maglemose sites "in the sequence of events of postglacial natural history" was his prime concern (Clark 1936a:128).

Following the Maglemose, Clark discussed the Ertebølle Axe Culture which was common in Denmark and northern Germany during Period III. Clark studied the material culture of the Ertebølle sites and compared these remains with Maglemose collections, discovering that many of the differences lay in proportions of artifacts. For example, in the Maglemose, core axes were far more numerous than flake axes. In the Ertebølle, the reverse was true. He then studied sites which could have been transitional between the two cultures, finding some with an intermediate proportion of core and flake axes. He concluded the Ertebølle was a product of indigenous development from Maglemose roots. Clark had first worked with proportions in his 1931 study of arrowheads and the method he used here to develop a sequence of sites was an extension of that early work.

Pottery was an integral part of the Ertebølle culture. When discussing this, Clark (1936a:156) stated the idea of making pottery "must have spread either from the south or from the south-east." Here he was explicitly invoking diffusion and meaning the spread of ideas only. This sharply contrasts with his use of the term in his dissertation to mean movement of people, not ideas.

The third group which Clark included in his study of the northern European Mesolithic, was the Microlithic or Tardenoisian, which was present in all three climatic and forest history periods. The Middle (Period II) and Late (Period III) Tardenoisian assemblages were characterized by geometric and hollow-based point microliths which resembled the microliths Clark had studied from Horsham, England. Clark placed the Horsham microliths into seven classes and he used the same classification here (Clark 1933b). Flint and antler axes, adzes, and picks, so characteristic of the Maglemose, were entirely absent from the Tardenoisian sites. Tardenoisian lithics and hearths were found in pits which were interpreted as dwellings.

Clark had excavated a pit-dwelling in Selmeston in 1933 and similar dwellings had been found in Belgium and Germany (Clark 1934b). In 1929, near Buchau, the German archaeologist, H. Reinerth, had excavated thirty-eight pits with evidence of covering huts. These features were always found in sandy areas or in exposed alpine regions with little soil, and were never present in the more northern forest regions where the Maglemose dominated. The loess belt immediately to the south in Germany was also occupied. In southeastern England, of forty-nine sites, forty-eight were situated on sand. Even small isolated patches of sand were preferred. "A better example of geological control over human settlement could, indeed, hardly be found" Clark (1936a:190) concluded.

Throughout the book, Clark described and explained variations between the Tanged-point, Axe, and Microlithic cultures by referring to some aspect of the environment. In the book's outline, he (1936a:v-vi) labelled the Axe group, "The Axe

Cultures of the Lowland Forest Area." The Tardenoisian was "The Microlithic Cultures of the Sand Areas and the Highlands." Here, Clark's conception of these assemblages included a description of the geographical setting. In his introduction, he stated that the groups were distinguishable "by adaptation to differing types of environment," and that the Tanged-point and Axe cultures "reflect different environments" (Clark 1936a:xiii). By environment he meant climatic change and forest growth. "The effects of the forest on the earliest civilizations of the post-glacial period were probably greater than those of any other factor of environmental change" (Clark 1936a:30). He explained the absence of axes, adzes, and picks from Tanged-point, Period I, assemblages "by the fact that during this period the immigration of forest trees had not seriously modified the tundra environment" (Clark 1936a:73). The emergence of axes, adzes, and hafts, during Period I in Axe Culture sites could be explained by the first traces of forest growth. The substantial homogeneity of the Maglemose Period II culture over extensive areas was understandably due to the unifying fen which stretched from England to Poland. In contrast, during Period III, the transgression of the sea reduced and split the area, making homogeneity of culture less possible, hence the more divergent assemblages.

Here, Clark discussed environmental impact broadly and deterministically as he had in his dissertation. In 1932, he had argued that people reacted to post-glacial environmental change such as forest growth by modifying their cultural equipment, by migration, or by innovation of food producing economies. In 1936, he repeated this analysis. The reaction to the incoming forests "took the form of cultural adaptation"

(Clark 1936a:30) or migration. Here adaptation appears to mean modification. In both studies, climatic change was mentioned as important to the formation of Mesolithic cultures. The amelioration of temperature had allowed people to move out of caves and into open air sites (Clark 1936a:195), or had induced them to migrate (Clark 1932a:7).

In 1936, Clark presented a detailed analysis of Maglemose art. Climatic and forest changes were not used to explain motif differences between Maglemose and Arctic or Upper Palaeolithic art as environmental change affected material culture more than art. Material culture from the Maglemose was defined as flint, stone, wood, amber, antler, and bone objects which were used for personal adornment or implements, usually tools. The decorations on these tools were studied in a separate section, and Clark did not use art motifs to infer subsistence or economic activities. However, he used subsistence to explain the net pattern art motif, stating that this pattern resulted from familiarity with nets and net-making. He also stated the distribution of the motifs implied a homogeneous culture throughout Period II.

In contrast to his dissertation, there is very little discussion of invasion as an explanation for changes in assemblages. In 1932, Clark had used environmental factors to explain shifts from the Upper Palaeolithic to Mesolithic to Neolithic, but had used movements of people or trade items to explain differences in Mesolithic assemblages. By 1936, the environment had become the prime mover behind assemblage change within the three periods of the Mesolithic, as well as behind the transition from the Upper Palaeolithic to the Mesolithic. Clark (1936a:155-156) discussed the possibility of an

"ethnic movement" only once when analysing the Ertebølle sites, but decided that this culture was the product of indigenous development.

Discussion and Conclusion

The transformation of the Prehistoric Society to a broader, national organization was part of the growing professionalization of archaeology in Britain in the 1930s. Accomplished amateurs, such as the Curwen father and son team, Mrs. M.E. Cunnington, and Lily F. Chitty had done the bulk of the flint collecting, surveying, and excavation in East Anglia and throughout Britain until the late 1920s. By the middle 1930s, when Clark and Phillips had been offered positions at Cambridge University, Piggott (1963:5) writes "young and irreverent persons in Cambridge, with like-minded and contemporary friends and colleagues elsewhere were . . . making the first conscious and concerted effort to professionalize prehistory." The new *Proceedings* preferred professional, academic work. Clark (1985c:12) states, "the fact that [the] *Proceedings* were edited for some four and a half decades in Cambridge . . . put us in the position to publish some of the most original work of generations of young [academic] prehistorians." Piggott (1963:5) concludes, "for good or bad the dominance of the amateur in British prehistory . . . waned." In the 1930s, the young and irreverent (Clark and Piggott) were institutionalizing themselves.

One of Clark's greatest strengths was his deftness at using this process of institutionalization and his new position as editor of the *Proceedings* to facilitate the expression of innovative research. In his association with the Fenland Committee, Clark

had witnessed and promoted the benefits of interdisciplinary co-operation. As Honorary Editor, he encouraged interdisciplinary contributions and used the *Proceedings* as a platform for describing and publicizing new advances in archaeological interpretation, especially those associated with the natural sciences.

Another strength was Clark's ability to extend and expand his work with the Fenland Research Committee with the publication of *The Mesolithic Settlement of Northern Europe*. When writing this book, Clark fostered an interdisciplinary approach and his goals remained similar to those expressed in his Fenland studies. He continued to use natural science techniques to help establish chronological sequences of cultures and to describe the environmental setting of assemblages. In the Fenland, Clark and company had successfully placed the Shippea Hill (1933a, 1935a) and Broxbourne (1934d) remains into a relative chronology. Now these sites were properly placed in a northern European context. Broxbourne could be seen as part of the early Period I Maglemose culture, and subsistence or seasonal occupation could be hypothesized on the basis of Scandinavian information. The Shippea Hill sites could be compared to the German Oldenburg site which had identical stratigraphy. Correlations between English and Scandinavian assemblages could now be substantiated.

During this work, Clark (1933h:232) continued to define archaeology as the study of the "past distribution of culture-traits in time and space, and of the factors governing their distribution," and, as in his earlier studies, was very talented at fulfilling the first part of this definition. We were given a clear understanding of the chronology and distribution of northern European Mesolithic Cultures.

When we review Clark's work from 1927 to the publication of this book, two major themes emerge. The first is the interaction of cultures represented by typologically distinguishable, mainly lithic, assemblages. This theme was foremost in his 1932 dissertation and was still predominant in his description of northern European cultures in 1936. The cultural interaction was usually explained by movements of people or trade items, although by 1936, Clark mentioned that pottery could have been introduced to Ertebølle sites by the spread of ideas. When classifying Tanged-point cultures, Clark's assumptions and methods were similar to those used in his earliest typological studies. He still seemed to assume lithics evolved and this evolution could be traced to ascertain the origin of a culture. He was concerned with whether or not an assemblage contained a predictable set of lithics and could be considered homogeneous. Recurrent assemblages or sometimes even one layer of an excavation, for example, the Early Tardenoisian lower strata of the Zonhoven site, were still equated with a culture and a people. When describing Magelmose material culture, he began with a general functional class and divided this class into subclasses by intuitively judging morphological variations. His typological methods and his goal of studying distinct assemblages remained the same.

The second theme is the interaction of cultures and environment as expressed in material culture. This theme was present in his earlier work, especially his dissertation, as when he used environmental factors to explain the shift from Upper Palaeolithic to Mesolithic cultures. But, by 1936, environmental change explained variations between assemblages as well as between prehistoric periods, and Renfrew's sequence, referred to earlier in this thesis, Recurrent assemblages --> Culture --> People --> Folk

movement, which described Clark's early reasoning, had become Environmental change --> Recurrent assemblage --> Culture --> People. The appearance of woodworking equipment in assemblages during Period I, was a reaction to the spreading forests and decreasing tundra. The Maglemose was a forest adaptation culture. The forest was reflected "by the extensive use of wood for handles, hafts of composite implements, sleeves, clubs, javelins, paddle-rudders and dug-out canoes" (Clark 1936a:124) and by the axes, adzes, clubs, and maces. The homogeneity of Maglemose assemblages over northern Europe "can only be explained on the basis of the geographical changes" (Clark 1936a:124) of spreading fenland between Britain and Scandinavia. The unity of plain implied unity of culture. When sea transgression occurred during Period III, the unity of land was destroyed and more divergent assemblages resulted. Tardenoisian assemblages, found almost exclusively on sandy soils, were an example of geological determination of human settlement. The interaction of environment and culture was a strongly emerging theme.

Further evidence of this theme can be seen in Clark's reconstruction of Maglemose subsistence and "social outlook." This was the first time that he abstracted this information from other sections of a report and discussed it under separate headings. "Having described the material culture of Maglemose man in detail, we are now in a position to appreciate how it reflects . . . the modes of subsistence of the people and the natural environment in which this subsistence was won" (Clark 1936a:124). We were provided with an idea of how people lived in small social groups by fishing, gathering, and hunting seasonally, usually camping temporarily near lakesides.

Clark's greatest strength, demonstrated in *The Mesolithic Settlement of Northern Europe,* was his ability to introduce the reconstruction of subsistence into the study of past cultural distribution. He was encouraged to do this by the work published in Scandinavia and Germany which discussed settlement sites, seasonal faunal remains, and numerous implements for fowling, fishing, and hunting.[14] His other great strength was his ability to synthesize vast amounts of information clearly. Clark had travelled to and studied in person assemblages from northern Europe and read literature from eleven countries. He aptly condensed and analysed this broad material into a comprehensive book.

Several things can be learned about Clark's thinking by referring to his study of Maglemose art. Clark did not use art motifs to infer economic activities. However, he did use an economic activity (net-making) to explain the art motif which resembled nets. This might imply Clark thought subsistence pursuits could determine the subject matter for art, but art could not determine subsistence. It might also imply Clark was using what the anthropologist L.A. White, in his text *The Evolution of Culture*, later referred to as a layer cake model of society, where subsistence and economic activities were characterized as occupying the bottom layer and ideology or religious beliefs were viewed as being situated in a smaller section near the top of the cake. Clark appeared

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[14]For example, H. Reinerth's excavations of Tardenoisian huts near Buchau, G. Schwantes' excavations at Duvensee of a Maglemose summer hunting camp, and K. Friis-Johansen's work at Mullerup with fish spears.

to claim inference could move up this cake but not down. It would seem he considered economic activities to be more basic to the survival of a society than artistic endeavours.

Clark's approach exhibited some conceptual difficulties when environmental change was used as a factor governing the distribution of cultures. There were several internal inconsistencies when climatic change and forest growth were considered as explanatory forces. "The progressive desiccation of Afrasia was accompanied by a gradual degeneration of the Capsian cultures until they became microlithic," wrote Clark (1936a:xiv). Thus, as water decreased, lithics shrank. It was the overflow of population from these areas which formed the Tardenoisian in northern Europe. It was an admixture of "these people who settled in sandy regions and exposed uplands," stated Clark (1936a:xv). Clark implied these groups arrived with a basically developed lithic tool kit. In terms of his own scheme, it could have been the tools rather than the geological or climatic factors which determined the choice of settlement sites. When discussing the Maglemose, Clark (1936a:xv) stated, "the forest of postglacial time gave rise to the development of the axes and adzes," and argued the new habitat of Maglemose people caused them to devise new implements for fishing (Clark 1936a:132). Here local environmental change came first and appropriate tools resulted. It was not clear why this was true for the Maglemose but not necessarily so for the Tardenoisian. It was also not clear why the Tanged-point cultures were not explained by environmental change during Period I. Tanged-points were associated with a pre-forest, tundra environment but Clark did not explain how these particular points were adapted to that setting.

Clark's thought tended to be circular in other ways. As we have seen, Clark used forest growth to explain the presence of heavy tools, but also used tools to learn about the environment as when wooden artifacts implied forest changes (Clark 1936a:124). At this point, it was not clear if the forest explained the artifacts or the artifacts, the forest. By this time in his career, Clark had become a splendid synthesizer whose approach did not fully explain what he had synthesized.

In the first volume of the new *Proceedings,* Clark published an encyclopaedic survey of prehistory in the Isle of Man, in which he reviewed the archaeological evidence from the Mesolithic through the Ultimate Bronze Age. In this article he again demonstrated a talent for organizing and clearly presenting a broad body of information derived from many sources. As in his earlier work, he used topographical and site distributional maps to demonstrate that Mesolithic, Neolithic, and Bronze Age sites occurred in low-lying coastal or glen areas and never in the mountainous interior. As in his dissertation, he classified Mesolithic flints by comparing them morphologically to flints from the Middle Tardenoisian in Belgium. Clark suggested that the geographical position of the Isle of Man allowed cultural influences to enter from numerous directions but that the distance of sea from the Irish, Welsh, Scottish, and English coastlines was sufficient to ensure local development. According to Clark, geography determined the island's chief prehistoric features (1935b:70).

Clark published the results of his interdisciplinary excavation of a timber monument at Arminghall, England in 1935. The site had been discovered by a pilot who had noticed large, dark, concentric ring patterns in a field. One of Clark's strengths was his ability to interpret these dark markings while carefully excavating the site. The darkened rings were found to be two ditches dug, one inside the other. The gap in the inner circle was discovered to be a solid causeway, leading to a central area. Within this central area were eight small dark patches that turned out to be post-holes for what had been large timber uprights. None of the structures survived and no archaeological

objects or burials were found within the central area. Clark (1936c:13) suggested the site had been a sacred open air temple.

Clark's (1936c:19-25) goals were to date the site and to find evidence for the possible origin of such "henge" monuments in Britain. The monument was dated by pottery found in the inner ditch, which was decorated in a characteristically Beaker-Early Bronze Age style. Before hypothesizing an origin, Clark categorized the timber monument as belonging to a class which he created. All monuments in this class had a similar layout, consisting of a central area a ditch, bank, and entrance and all had been used as sanctuaries. He drew a sharp distinction between henge sacred monuments and disc, bell, and Dutch palisade barrows which he said had been used as burial sites only. Some archaeologists, in particular, A.E. van Giffen, had suggested that the conception of a palisade barrow had come to England during the Neolithic and had inspired the development of the timber and stone monuments. Clark strongly disagreed, arguing that the two groups differed fundamentally in function and design and that it would be difficult to claim that one group was ancestral to the other without evidence of an intermediate stage.

Clark (1936c:1) observed that the Arminghall monument was "placed upon a low gravel shoulder on the edge of the flood-plain" of the Tas River. When surveying the vicinity, he noted that many barrows were located on low-lying fluviatile gravel, concluding that surface geology "exerted the predominant control over the choice of sites for barrows" and henge monuments (Clark 1936c:5).

In his book reviews and in the sections of the *Proceedings* entitled "Current Prehistory" and "Notes," Clark wrote more informally than in his other published work, readily expressing his personal opinions. Study of these sections provides insights into his changing interests and intellectual attitudes. In the 1935 edition of "Notes," Clark printed a report by V.G. Childe describing his recent visit to the U.S.S.R. Childe had been very impressed with the excavations of Upper Palaeolithic dwelling sites in Siberia and European Russia. He presented a detailed review of the results, comparing the Kostienki I house remains with the winter earthen homes of twentieth-century Arctic peoples. The discovery of actual dwellings at Malta, Kostienki I, and Gargrino had "opened a new page in palaeolithic studies" (Childe 1935b:152).

Clark had demonstrated an interest in settlement sites in his dissertation and during his excavations of two Mesolithic sand pit-dwellings in Sussex in 1933. He emphasized that the discovery of pit-dwellings was important and added "considerably to our picture of life as it was lived in Mesolithic Britain" (Clark 1934b:154). A year later, when reviewing an excavation of Danish Neolithic farmsteads by J. Winther for the journal *Antiquity,* Clark stressed both the lithic typological evidence and the house remains, describing them as equally important. In the first appearance of "Current Prehistory" in Volume II, part II of the *Proceedings*, Clark praised the complete excavation of a Danubian peasant settlement site at Koln-Lindenthal, Germany by W. Buttler and W. Haberey. What made this excavation so remarkable was the entire area of settlement had been uncovered and the plans of structures, which survived only as soil discolorations, were identified by carefully shaving down the Neolithic surface. The

actual placement of buildings and their floor plans had been determined. The excavations revealed dwelling houses with store-pits, granaries built on piles and field barns. Clark noted that each structure had a different economic function and that the general economic organization of the settlement had become apparent as a result of the thoroughness of the excavation. He concluded that these were model excavations which demonstrated "the astonishing possibilities that lie ahead of British archaeology . . . the time may soon come when we in England can progress from cutting sections and establishing the bare bones of chronology to opening up whole settlements and studying the functioning of the early communities of our own land" (Clark 1936g:245-246).

The 1936 "Current Prehistory" was peppered with Clark's opinions and observations on subjects other than settlement excavation. Characteristically, when reviewing evidence for an approximate date for the separation of Britain from the Continent, he pointed out two separate and distinct lines of enquiry, palaeo-botanical and zoogeographical. As well, when discussing archaeology in Northern Ireland, he praised and advocated the use of systematic excavation even on a smaller scale. He also reviewed the Finnish archaeologist A.M. Tallgren's account of the recent purges of archaeologists in the U.S.S.R. Although Clark (1936g:248) agreed with Tallgren that the Soviets were contributing "something very valuable in the way in which archaeological remains are made to relate to social and economic development," he was very critical of the Soviet system for exercising political control over archaeology.

Clark's presentations in "Current Prehistory" throughout the late 1930s demonstrated his ecumenical knowledge of archaeology. He was clearly attuned to his

intellectual surroundings. For example, in the 1937 section, he surveyed and commented on megalithic research in Northern Ireland, and non-megalithic long barrow excavations in England; reviewed twenty five years of studies into the origin of metallurgy in Britain; reported on a flint dagger complete with wooden handle and leather sheath found in a German bog; gave a detailed report on current efforts to date early stone and flint artifacts from Norway; described the introduction of dendrochronology to south-western American archaeology, and praised M. Vaufrey for his work on dating rock engravings in northern Africa.

Clark continued his interest in German excavations of Neolithic dwelling places in the "Current Prehistory" sections for 1937. He reviewed G. Bersu's pioneer work on the recovery of house plans at the Goldberg site where no organic structural remains survived. Different periods of house construction were recognized from the varying discolorations of the material filling the post-holes and wall-slots. Houses from period I and II showed up as brownish grey in colour, those of period III as grey and those of period IV and V as black. Next, Clark reviewed the Danish Neolithic farmstead excavations he had commented on for *Antiquity* in 1934. This review revealed a shift in Clark's interest. In 1937, he did not include the lithic dating evidence which he had mentioned as crucial in 1934, choosing to discuss only how the excavated house plans reflected different economic uses. He expected that future excavations of Neolithic settlements would throw more light on the "economic organization of the early communities of Europe" (Clark 1937b:457).

The most important statement of Clark's concern with prehistoric dwellings was an essay promoting the study of building sites that appeared in late 1937 in the *Proceedings*. He asserted that there was no "class of antiquity that affords a closer insight into the life of prehistoric societies than houses" (Clark 1937f:468). Information on population levels, social structures, and economies could be inferred from building remains. Clark (1937f:469) noted Germans and Scandinavians were accomplishing a great deal but that in contrast "the situation in England with regard to houses of pre-Early Iron Age is frankly deplorable." This should not be tolerated; he recommended that the discovery and excavation of prehistoric buildings "should be a prime aim of British archaeology in the immediate future" (Clark 1937f:469).

In the same section of the *Proceedings*, Clark (1937f:472) discussed the "character and age" of flint industries, found along the Danish Gudenaa River, where only flint implements had survived. He approached this material as he had approached the analysis of assemblages in his 1932 dissertation, continuing to equate an assemblage with a culture and to assume that lithic forms evolved, classifying the lithics by morphology and function. He compared proportions of different lithic types from site to site as in his 1934 study of Horsham microliths. When comparing the Gudenaa River evidence with coastal Ertebølle sites, Clark mapped the distribution of the sites as in his early typological studies. He indicated differences between the Gudenaa River assemblages and the kitchen-midden Ertebølle remains reflected adaptations to contrasting habitats.

By the 1938 "Current Prehistory," Clark was delighted to announce the discovery of a Neolithic house in Britain. "As if in answer to our plea . . . Mr. E.H. Willock has come forward with his discoveries . . . the plan here reproduced will prove to be the first of many" (Clark 1938d:222-223). Clark then reviewed G. Schwantes' and A. Rust's excavations of early Mesolithic summer camp sites in northern Germany which had been occupied by people who lived by hunting reindeer. These camps had been found on the shores of ancient lakes and Clark pointed out that sites such as these had not been investigated as yet in Britain. He recommended that British archaeologists study silted up lakes near the last major extension of the ice sheet in order to obtain important wood, bone, and antler remains as had been done in Germany.

Later in 1938, Clark devoted an entire article to reviewing Rust's and Schwantes' research. Rust had excavated several sites employing an interdisciplinary team which had successfully correlated geological, archaeological, and palaeobotanical evidence. Both Rust and the faunal expert, W. Krause, theorized that the reindeer hunters were only summer visitors to northern Germany, dwelling for the rest of the year farther south. A second similar excavation at Stellmoor, Germany, had found the remains of Lyngby type antler axes, which Clark interpreted as representing a very early Mesolithic culture. Clark once again hoped that this research on sites found in silted up lakes would inspire comparable efforts in Britain.

Clark discussed evidence for seasonal settlement in France during the Upper Palaeolithic in the 1939 edition of the *Proceedings*. Dr. de Saint-Perier had conducted research on reindeer antlers found in caves and shelters in Lespugne. The adult male

antlers were shed specimens, but the antlers from females and young carried portions of the skull. From this, de Saint-Perier had deduced that the shelters had been occupied from November to February. L'Abbé Breuil had come to similar conclusions in 1907, and Clark suggested that the French sites were winter settlements and that the inhabitants spent summer on the move.

During this period of Clark's academic life, he was influenced by both D.F. Thomson and A.M. Tallgren. The ethnologist D.F. Thomson, from the University of Melbourne, had given a presentation on Aborigines of Eastern Arnhem Land to a meeting of the Prehistoric Society in November 1938, and Clark had published Thomson's now famous article on "The Seasonal Factor in Human Culture" in the 1939 volume of the *Proceedings*. Thomson had thanked Clark for suggestions and criticisms in his acknowledgements at the end of this publication. In this article, Thomson demonstrated the influence of seasonal changes on the life of a nomadic hunting group, showing the close relationship between the nomads and their environment. "It will be apparent that an onlooker, seeing these people at different seasons of the year, would find them engaged in occupations so diverse . . . that if he were unaware of the seasonal influence on food supply [and on weapons and utensils], he would be led to conclude that they were different groups" wrote Thomson (1939:209). The evidence presented in this publication cemented Clark's interest in seasonality as a factor which must be considered when interpreting site differences.

Clark acknowledged being influenced during the late 1930s by the accomplished Finnish Scholar A.M. Tallgren. Tallgren was a specialist in Russian archaeology and

had been editor of the journal, *Eurasia Septentrionalis Antiqua* from 1926 to 1939. "I responded eagerly to the pronouncement in 1935 of a revered senior A.M. Tallgren, who stated 'Forms and types, that is, products, have been regarded as more real and alive than the society which created them'" (Clark 1974:47). Tallgren's now classic article on "The Method of Prehistoric Archaeology" was published in English in 1937. He began by giving a brief account of the accomplishments of archaeology up to 1935. Outlines of prehistoric chronology had been successfully established by using typological analysis. This method of typology had been based on the theory of evolution and the starting-point of research had been the morphology of forms and their comparison. Cultures had been arranged vertically in chronological groups and horizontally in culture-circles. Here Tallgren could have been describing any of Clark's early work.

Tallgren (1937:154) criticized this "formalist" method, stating that the brilliant systematization it produced had not led to an "elucidation of the organic structure of the whole life of the period studied [or] to an understanding of social systems." He examined the concept of culture, concluded that a material culture could not often be equated with a people, and noted how difficult it was to infer nationality from archaeological remains. In answer to these errors, archaeology should become an "economic-social, historical science" (Tallgren 1937:158). Use and function, not form should be the starting point of research. Economic systems are more important than the evolution of tools. Tools are social products. "We must give up too the treatment of forms as if they were links in an assumed typological evolution" (Tallgren 1937:161). The aim of archaeology is to illuminate cultural, social, and economic conditions.

Seemingly in response to Tallgren's analysis, Clark (1939f) wrote that the time had come for prehistorians to reconsider the fundamentals of their discipline. "Material culture forms are essentially social phenomena . . . if archaeology is ever to give us more than a superficial insight into the lives of past societies, this can only come through discontent with the present mechanistic interpretation of cultural phenomena" (Clark 1939f:260).

Shortly before, Clark had published a survey article, synthesizing the history of early peoples in the County of Cambridgeshire, in which he commented on Sir Cyril Fox's chronology for the Bronze Age in Britain. This chronology had been based on sequences of metal forms, such as daggers and flat axes. Clark noted that the diffusion of metal items had no necessary connection with cultural or ethnic groups, since daggers and swords could easily be traded for expedient reasons. The study of pottery was a safer indicator of the movement of peoples because it was a strictly local industry which directly reflected the culture of its makers. A similar point had been made by V.G. Childe (1929) in *The Danube in Prehistory*.

Clark's interest in settlement sites was applied to research in his interdisciplinary excavations of Mesolithic pit-dwellings at Farnham, Surrey. W.F. Rankine who co-authored the report on this work, had discovered clusters of Mesolithic worked flints in distinct patches of reddish-brown earth. Excavations were begun in order to determine the exact nature of these patches. Upon careful examination, each patch of reddish-brown soil was found to be a hut floor. In the second pit excavated, a well defined post-hole was uncovered. A second season was undertaken in order to obtain more lithic

evidence "for a proper assessment of the industry" (Clark 1939b:67). Third and fourth pits were located and cleared. Pit four contained over 14,000 worked flints and an analysis of these established that the industry was uniform throughout the site.

Clark wrote a detailed description of the Farnham lithic industry, discussing the sources of raw material, proportions of the different types of flint used, varying preservation of the artifacts, and general composition of the assemblage. He classified the assemblage by comparing morphological differences, using the system he had developed to categorize Horsham microliths in 1934. He also identified scrapers, burins, awls, and core tools such as adzes, axes, and picks, which were found in various stages of production. By studying these remains, Clark was able to reconstruct how the core tools had been manufactured. For the first time he was able to refit a transversely struck sharpening flake to its parent form.

As he had in his earlier typological work, Clark surveyed other finds in the immediate neighbourhood. Many of these he found to be typologically related to the Farnham industry. He then compared the Farnham and area remains with typologically similar industries from the southeast English sites of Horsham, Selmeston, and Hassocks. The lithics from these sites differed in detail but had many common features not found combined elsewhere. Clark (1939b:96) concluded that they belonged to "a rather narrowly distributed, but self-standing, culture."

In the final section of the Farnham report, Clark summarized the evidence for upper Palaeolithic and Mesolithic dwellings, starting with a polemical statement which surely was influenced by Tallgren. "That the classification of early cultures should at

first have been based upon the forms of flint implements . . . is understandable. It was only when archaeologists became absorbed in flint implements to the exclusion of early man and his habits that research was jeopardized" (Clark 1939b:98). He complimented Soviet archaeologists for discarding a "fossil mentality," and for stressing the excavation of living areas (Clark 1939b:100). As Childe had done, Clark compared the semi-subterranean houses of south Russia and Siberia with earth-houses in Alaska.

Clark then reviewed evidence for seasonal settlement which Scandinavian and German archaeologists had collected and for the first time used seasonality to explain his own finds. L'Abbé Breuil had compared Upper Palaeolithic summer dwellings to the temporary huts of Navaho Indians and Clark theorized that the Tardenoisians might have lived in similar summer shelters. The Farnham pit-dwellings might have been their winter settlements with floors scooped out to protect against the cold. The occurrence of hazel-nut shells at Farnham suggested that residence was taken up during the late autumn and might have continued to the spring. One could have wished for better conditions, Clark stated. Once again he suggested that efforts should be concentrated on the location of water-logged sites.

Clark noted that the Farnham-Horsham cultural sites were located on light gravelly or sandy soils near accessible supplies of water. The choice of places to camp was influenced partly by topographical, partly by geological and ecological factors, Clark concluded.

Archaeology and Society was well received when first published in 1939 (Hawkes 1939, Piggott 1940, Raglan 1940, Vaufrey 1940) and has since become one of Clark's

most widely read and respected publications. It was written to introduce "the general reader" and students to the "process of archaeology, its aims, its limitations and its social value" (Clark 1939a:xiii). In her review, J.J. Hawkes (1939:182), praising the publication, wrote "the interested layman and the new student will find an easy and correct approach to the subject. Both should find much to stimulate thought in the treatment of Interpretation that represents the modern trend in prehistory at its best." According to Hawkes, Clark exemplified the modern trend by his attempt to make every archaeological artifact reveal something about past livelihoods, homes, beliefs, and social structures.

Clark (1939a:1) defined archaeology as "the study of how men lived in the past," and proceeded to discuss how an archaeologist should conduct such a study. He divided his book into six sections, each covering an important area of archaeological concern: discovery, preservation, excavation, chronology, interpretation of finds, and archaeology's place in society.

"How does an archaeologist know where to dig?" Clark (1939a:13) asked in his chapter on discovery. An archaeologist notices artifacts exposed by erosion or disturbed by human activities, observes changes in terrain, soil colour, or plant and animal ecology and follows clues which might exist in books, maps, place names, or local lore. For example, wind erosion had been responsible for the discovery of the famous stone village at Skara Brae, Scotland, and a drought had revealed the Swiss lake-dwellings during the mid-nineteenth century. Also ancient field-systems can be discerned by variations in relief such as low banks. Shadows in early morning or evening can accentuate relief

differences. Shadow-photographs may help elucidate features of hill forts. Snow might reveal housing patterns. Topsoil tends to be deeper in ancient trenches, and post-holes or storage pits produce denser crop growth and hence darker markings. Every archaeologist loves maps, Clark continued, and paying attention to the geology and topography of an area can give clues to where sites might be found. Place names and people's behaviour and prejudices may also give clues to possible sites. For example, the leading Palaeolithic sites in South Russia during the 1930s were at Kostenki, a place name which meant "bone village."

"The possibilities of any site are limited fundamentally by what has survived the passage of time," Clark (1939a:50) wrote. In his chapter which discussed preservation, Clark demonstrated a broad knowledge of conditions which affect remains. "Organic materials are more likely to decay than inorganic" (Clark 1939a:50). Stone masonry usually survives but acid soil may destroy tooling and engraving. Stone and flint implements are the most imperishable of artifacts but often undergo serious surface change. Gold and bronze items survive better than iron objects, which may be reduced to discolorations of the soil. Pottery sherds are extremely hardy but badly fired pottery can soften.

Climate and the nature of the soil were two of the most important factors for the preservation of organic materials. For example, equatorial rain-belts are damaging but very dry climates are helpful to the preservation of perishable goods. In the temperate European climate, organic remains had survived in lakes, bogs and fens, and the very cold climate in Greenland had preserved many organic articles, such as harpoons, gull-

hooks, ice scoops, shoes and toys. The Viking ships found in Norway had been buried in clay which helped them survive, and gradual accumulation of loess in South Russia had protected Upper Palaeolithic settlement sites. Clark was careful to point out that the behaviour of prehistoric people had also influenced the degree to which material had survived. For example, the great care given to burials had benefited archaeologists. But, "if the excavation of burials gave archaeology its flying start, it is settlement sites with their manifold social implications that provide the most promising material for the future," concluded Clark (1939a:82).

Clark devoted Chapter Four to the principles of excavation. Most importantly, the worker must be flexible, adapt to the particular demands of a site and keep in mind the site's potential for preservation. "Rigid adherence to some theoretical 'excavation technique' is hardly likely to bring success," Clark (1939a:86) warned. With this approach in mind, the excavator should have two primary aims: "to recover and record the form of an object or site, and to trace stages in its development." He labelled the process of recovering and recording form, the study of the "morphology" of the object or site, a term he apparently borrowed from his experience with lithic analysis (Clark 1939a:86). The excavator should first isolate what has survived and then search for clues concerning what has ceased to exist. For example, Roman walls usually survive intact in Britain, providing good ground plans for buildings which then can be reconstructed. However, with former wooden structures, the superstructure often has to be inferred from the arrangement of posts and footings.

When no structures exist, as in what Clark (1939a:92) calls "ghost sites," the excavator must react with ingenuity in order to establish the morphology of the site. When sub-soil is sufficiently solid, the top soil can be removed to reveal ancient slots for wall footings and post-holes, which can be recognized by differences in colour and infilling consistency. In contrast, when working with the soft loess soil of central Europe and Southern Russia, it is necessary to shave away the surface in layers. Surface markings must be carefully recorded as they appear and then sectioned and excavated vertically. House plans can be reconstructed solely on the basis of colour markings on the soil. The shaving method had been used in Holland, where nothing remained of human skeletons but dark silhouettes against pale sand, Clark reported. Sometimes a site will exhibit a range of states of preservation requiring various methods of excavation. Prehistoric buildings were made from perishable as well as imperishable materials and consequently the shaving and the more "straight forward isolation method" might both be useful (Clark 1939a:99).

In addition to studying the layout of a site, the archaeologist must document "the stages through which it passed in its life history" (Clark 1939a:101). This can be achieved by investigating the superposition of one layer of evidence upon another. For example, early villages and cities in the Near East were rebuilt on layers of debris. From the European Neolithic and later periods, settlement sites developed not only vertically but also through a process of enlargement, elaboration or diminution. Clark noted R.E.M. Wheeler had thoroughly detailed changing settlement patterns through time at the Maiden Castle site in England.

In Chapter Five, Clark presented a broad discussion of all known methods for establishing relative and absolute chronologies for archaeological finds. "The best results are likely to be obtained through the convergence of two or more lines in evidence," Clark (1939a:131) characteristically commented. Therefore, it is best to use several methods of dating and to compare the results. In this section, Clark reviewed pollen analysis, varve analysis, geochronological research, dendrochronology, and the use of synchronisms and stratigraphy. He also gave a clear presentation of the principles of typological analysis for the first time in his published work.

Typological analysis is crucial to the discipline of archaeology. "It is only when the evidence has been tabulated in order, that it is feasible to begin to consider what it means," (Clark 1939a:119). Before interpreting archaeological remains in terms of indigenous development or ethnic movements, the worker must first categorize and arrange the material in chronological sequence. To do this, the investigator must understand that all "industrial and art forms are subject to evolutionary processes," wrote Clark (1939a:115). Typological development can take two directions, "progressive evolution" or "degeneration," Clark (1939a:117) stated. "Progressive evolution" is exemplified by change from simpler to more elaborate forms. "Degeneration" is demonstrated by gradual simplification or disintegration of forms.

The possibility of studying degenerative rather than only progressive evolutional sequences was a noted change in Clark's typological methods, since his earlier lithic analyses considered only progressive, simpler to elaborated evolutionary lines. In his 1939 discussion Clark was referring to the evolution of coins and megalithic tombs as

well as lithics. Typological sequences, either degenerative or progressive, carry more weight "when supported by the evidence of associated finds," Clark (1939a:118) observed. The archaeologist should search for "find-complexes" which consistently accompany the artifacts being studied (Clark 1939a:118). Once a sequence and its find-complex are known, it is important to keep in mind the question of geographical distribution. Cultures occupy space as well as time, Clark noted, and maps are an important aid in plotting the distribution of cultures.

In his first few chapters on discovery, preservation, and excavation, Clark made it clear that many types of evidence do not survive in the archaeological record. Therefore, archaeological remains are limited in what they can reveal about how people lived and can give more information about some aspects of society than others. "The excavator can hope to obtain concrete evidence only of those aspects of life which are normally expressed in material things," Clark (1939a:152) stated. The worker will be able to reconstruct most successfully the economic basis of prehistoric society. By economic basis, Clark meant what people ate and how they got their food. Questions, such as were they food-gatherers or food-producers, are answerable archaeologically when the worker has access to material equipment and to faunal and vegetable remains. For example, the presence of the hoe or plough, sickle and quern all point to an agricultural basis. Implements used for tillage can allow an investigator to determine what the stage of agricultural development was. A two-oxen plough indicates a more advanced type of farming than a hoe. Digging-sticks tell of root-grubbing; nets, fish-hooks, and leister-prongs of fishing; arrows and spears of hunting.

Clark theorized many different aspects of society are interrelated with each other and that because of these interrelationships, archaeologists can infer information about aspects of society other than the economic basis. He suggested there was an interrelationship between the food supply and the type of topographical and geological terrain chosen as a living area. For example, pastoralists favoured chalk or oolite hills and Neolithic agriculturists preferred loess patches. House forms are related to the general economic basis, and the investigator must keep in mind economic specialization when interpreting settlement sites. Art reflects the economic preoccupation of a people. In the art of Arctic hunters, elk, reindeer, and open country are depicted. Economic realities determine the subject matter of the art, but not necessarily the style.

"The material remains of an ancient culture, the implements, weapons and equipment of daily life, form the backbone of archaeology," Clark (1939a:162) wrote. Material culture, other than farming or hunting equipment, can be a marvellous indicator of prehistoric culture. For example, spindle-whorls and loom-weights imply weaving, grave goods can reveal the existence of social classes, fundamental differences in dress can be inferred from fastening devices even when no cloth survives and the presence of gouges and chisels imply carpentry.

"Family life, marriage customs and family relationships are matters which can hardly be inferred directly from archaeological material," stated Clark (1939a:183). However, if excavated completely, settlement sites can allow a good estimate of the size of a prehistoric community, and the presence of houses of outstanding size can indicate class differences. But, there are whole realms of social behaviour and organization

which are extremely difficult to obtain information about by archaeological methods, Clark concluded.

Clark devoted his final chapter to a discussion of the role of archaeology in contemporary society. Archaeology flourished in societies where "its value to the community has been realized" (Clark 1939a:189). Archaeology had been supported in countries such as Poland, Ireland, and China for nationalist reasons. In the U.S.S.R., archaeological research had become ammunition for ideological interests. The political value of the discipline had also been appreciated by the regimes in Italy and Germany. In 1939, twenty five German universities offered courses in archaeology as compared to only two in England. Clark admired the technical excellence of German prehistoric research but disliked Kossinna's racist pan-Germanism. He suggested that the growth of civilization had been a complex process and used the evidence of diffusion to demonstrate that no one people could be superior. "One of prehistory's strongest points is the emphasis it places upon the cultural brotherhood of man," Clark (1939a:208) concluded.

Throughout this book, Clark discussed the possibility of using ethnographic analogies to help to interpret archaeological finds. In her review, J.J. Hawkes (1939:182) commented on this use of "ethnographic prehistory," suggesting it was one of the book's notable contributions. Clark argued researchers could gain knowledge of primitive cultures by studying extant societies, if the analogy was carefully constructed. The living culture should be at the same economic stage of development, live under similar environmental constraints, and preferably be historically related to the prehistoric

society being studied. Even with these precautions, Clark (1939a:166) warned using ethnographic examples could be misleading because the "interplay of forces, environmental, social and cultural, . . . can never operate in quite the same way in different societies."

In *Archaeology and Society* Clark's use of ethnographic analogy was noticeably more sophisticated than his first one sentence reference to Eskimo scrapers in his 1928 explanation of possible uses for early Bronze Age discoidal knives. In 1928, Clark did not develop the similarities and differences between, what Wylie (1985:100) terms, the ethnographic "source-side" and the archaeological "subject-side" of the analogy. By 1939, however, he was beginning to do this, noting there must be similarities in environmental context and material technology before a comparison could be made between living and prehistoric cultures and their artifacts. Clark (1939a:167) made the most successful use of ethnographic evidence when "folk-survivals" occurred, for example he suggested rural houses of Jutland, which exhibited the exact floor plans as excavated pre-Roman homes, could be used to describe more fully Iron Age life in Scandinavia.

Discussion and Conclusion

Clark claims to have been influenced by functionalist social anthropologists while studying for his B.A. and Ph.D. at Cambridge, and that exposure to A.R. Radcliffe-Brown's and B. Malinowski's work, in the late 1920s and early 1930s, prompted his dissatisfaction with conventional archaeology during the late 1930s (Clark 1974:38,

1989:58). He counts himself fortunate "to have been brought up during the second half of my undergraduate training spent in the Department of Archaeology and Anthropology, on Radcliffe-Brown and Malinowski -- and in due course on Evans-Pritchard and Thomson -- as well as on Breuil and Childe" (Clark 1974:38). Social Anthropology was included in the schedule agreed upon by the new Faculty in 1927 for the Archaeology and Anthropology Tripos. Clark had spent his first two years at Cambridge studying history. The Archaeology and Anthropology Tripos was designed as a second part of his degree and Clark (1989a:34) remarks that, because of the limitation in staff, the "ground could be covered only at an elementary level."

A charismatic figure, Malinowski taught at the London School of Economics in various capacities from 1924 to 1938. During this period he had enormous impact on the British academic community and was recognized as the head of the social anthropology profession. "The thirties was the decade of Malinowski and the London School of Economics," writes A. Kuper (1973:87). "Almost all the first generation of anthropology students in the functionalist era passed through Malinowski's seminars" (Kuper 1973:89). Malinowski's influence was so pervasive that it is possible Clark could have been influenced by Malinowski's teaching even if he had never read his publications. However, Kuper suggests that Cambridge academics were never strongly influenced by either Radcliffe-Brown or Malinowski. As late as 1938, "Cambridge was still slumbering in the pre-Malinowskian era" (Kuper 1973:106).

Radcliffe-Brown had taught at Cambridge between 1908 and 1914 but had left England in 1914 and was not heavily influential there until he returned in 1937 to teach

at Oxford. "One must recognize that Radcliffe-Brown had a very direct and personal impact upon British anthropology, particularly after 1937," at which time he took Malinowski's place as head of the social anthropology profession (Kuper 1973:65).

Clark might well have been brought up on Radcliffe-Brown and Malinowski, but during the 1930s there is no evidence in any of his publications which indicates he was, as yet, directly indebted to either of these thinkers. He did not reference them in his early work and never reviewed or mentioned their publications. Nor did Clark's close archaeological associates and friends, Stuart Piggott and Charles Phillips, refer to Malinowski or Radcliffe-Brown in their research during the late 1920s and 1930s. Phillips, in his autobiography, discusses his friendship with Clark in detail, but fails to mention any fascination, on their part, with social anthropological thought. Clark's early typological work on artifacts was not based on a knowledge of this theoretical subject matter.

Nor is there clear evidence of indirect influence. Malinowski and Radcliffe-Brown's major ideas do not appear in Clark's work during this time. For example, in *Archaeology and Society*, Clark's treatment of discovery, preservation, excavation, chronology, and most importantly, interpretation, does not necessarily reflect the influence of Malinowski or Radcliffe-Brown. Clark neither suggested cultures were founded on biological needs as Malinowski had theorized, nor argued material interests were ultimately food interests. He used the food supply as a basic category to infer economic information about prehistoric societies, but did not study the food supply as a

reaction to a physical need (Clark 1939a:152). He was interested in the source of the food, not its social function.

Clark did theorize different aspects of society were interrelated and this might be taken as evidence of a growing functionalist approach, but he did this for very practical reasons -- in order to augment his interpretations of housing patterns and population estimates (Clark 1939a:152). It is not clear he conceived of society, in 1939, as a definite set of social relations connected into an integrated whole, as did Radcliffe-Brown (1935:396). Clark was concerned with reconstructing economies, not with finding out how social structures functioned. For example, in his analysis of the Arminghall henge monument, he commented on its specific use as a sanctuary but did not develop this statement into a functional analysis. He did not discuss how the monument functioned in the social life of the community as a whole, and was not concerned with how the sanctuary might have promoted a harmonious working together of parts or how it might have contributed "to the maintenance of the structural continuity" of society (Radcliffe-Brown 1935:296). He was not trying to formulate generalizations about common features of social forms. Clark was interested in reconstructing subsistence and documenting adaptation to specific environments; Radcliffe-Brown, in "the mutual adjustment of the interests of the members of the society" (Kuper 1973:72).

In 1939, Clark was not yet an established functionalist in his approach to archaeological data, although in 1938, in his survey of prehistoric evidence for the Country of Cambridgeshire, he had suggested that metal weapons were not good indicators of ethnicity (1938a:262). Pottery, on the other hand was a good indicator

because it reflected local taste. Childe had made a similar distinction in 1929, and Trigger (1980:40) has interpreted his view as evidence that Childe "had already adopted an implicitly functional view of cultural items, even if he did not yet apply this concept to whole cultures." Childe in 1929 and Clark in 1938 were beginning to conceive of artifacts not in terms of their specific use, "but rather in terms of the role that these artifacts played in the social systems that created, used, and disposed of them" (Trigger personal communication 1992). Clark realized that pots were not just pots, but were also symbols of ethnic identity. If we agree with Trigger's analysis of Childe's work, then by 1938 Clark was becoming a functionalist.

During the 1940s, Clark may have been influenced by Evans-Pritchard. Evans-Pritchard had begun to teach African Sociology at Oxford in 1935, published his famous monograph, *The Nuer* in 1940, and was influential during the ensuing decade. Audrey Richards, one of Malinowski's students, might also have influenced Clark. He refers to her work in his 1944 study of "Water in Antiquity" published in a period beyond the scope of my thesis.

During the 1930s, Clark's budding interests in settlement excavations, the interpretation of prehistoric economic activities, and the seasonality of sites, as well as his stated dissatisfaction with a mechanistic approach to archaeology, can be understood in terms of his immediate archaeological academic context and his personal maturation. Clark (1934k, 1937h) favourably reviewed Scandinavian excavations of Neolithic houses. He was also pleased with the Russian Upper Palaeolithic material reported by Childe, stating "the prehistorians of the U.S.S.R. have broken entirely new ground," but he

lamented its inaccessibility (Clark 1939i:209). As we see from reviewing Clark's publications (1936g, 1937c, 1937f, 1938d, 1939b), he was very impressed and influenced by the excellence of German excavations of prehistoric dwelling sites. He continually pointed out how Germany with "her highly organized and professionalized body of workers has carried the study of prehistoric houses to the advanced stage" (Clark 1937f:468). In particular, he admired G. Bersu's introduction of the shaving technique of excavating settlement sites where no organic remains survived, and the excavations by Bersu's students at Köln-Lindenthal where the entire site area (35,000 square metres) had been uncovered. He was convinced by the German and Scandinavian excavations that research on dwelling sites could enhance archaeology's knowledge of social and economic aspects of society. In *Archaeology and Society*, Clark (1939a:152) noticeably included "settlement and houses" as an aspect of society which was related to the economic basis and the society's social organization, and pointed out that housing plans might imply social classes and community size. Several times in the *Proceedings*, he reminded his audience that German, Russian, and Scandinavian settlement excavations ought to be recognized models for archaeologists to emulate in Britain (Clark 1936q, 1937f).

For the first time, in 1939, Clark used seasonality to interpret the results of his own excavation. He had already been introduced to Scandinavian studies of Maglemosian seasonal camp sites, which he included in *The Mesolithic Settlement of Northern Europe*. During the late 1930s, he became familiar with G. Schwantes' and A. Rust's interdisciplinary excavations of seasonal pre-Mesolithic sites. He also

reviewed for the *Proceedings* L'Abbé Breuil's and de Saint-Perier's theories on seasonal settlement during the Upper Palaeolithic in France, and in 1939 he published D.F. Thomson's renowned ethnographic study of an Australian nomadic group in the *Proceedings*. Clark placed himself within an academic milieu which encouraged thinking about seasonality.

A.M. Tallgren's strongly presented arguments for a new approach to archaeology impressed Clark and contributed to his growing dissatisfaction with the use of typological analysis to the exclusion of other methods. Both Clark and Tallgren believed the time had arrived to revise the aims of archaeology and both felt the starting point for research should be the economic basis as revealed by the implements of production (Clark 1939f:260, Tallgren 1937:155). However, Clark continued to stress the necessity of retaining typological analysis as the methodological starting point in archaeological research. Tallgren thought it was not necessary to continue to use formal analytical units as links in an assumed typological evolutionary sequence (Tallgren 1937:161). In contrast, Clark argued it was necessary to classify the forms of the implements before interpreting the economic basis and before relating the resulting types to other aspects of the culture (Clark 1939a:119). Clark's chapter on chronology and lithic analysis preceded his chapter on interpretation in *Archaeology and Society*. Without proper classification of the material remains, interpretation was not possible.[15]

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[15]At, a future date, it might be interesting to pursue the question of why both Clark and Childe, in contrast to Tallgren, continued to stress the priority of typological analysis in archaeological explanation.

Clark's devotion to lithic analysis was demonstrated in his detailed report on the Farnham remains (1939b). The second season of excavation had been undertaken specifically to evaluate the worked flints found in the pit-dwellings. He was delighted to discover how core tools had been manufactured and how flakes could be refitted to parent forms. His methods of classification were similar to those used in his earliest typological lithic studies. In fact, he applied his 1934 Horsham classificatory system to the Farnham flints. Only after his lithic analysis was completed, did Clark consider applying the German and Scandinavian methods for determining seasonal settlement. He then suggested the pit-dwellings had been winter homes.

It is clear Clark had developed a two-tiered system of goals by 1939. The overarching aim for archaeologists should be to study "how men lived in the past" (Clark 1939a:1). Concurrently with this goal, Clark studied culture traits in time and space. For example, in the Farnham report, his first aim, after classifying the remains, was to establish the geographical limits of the Farnham/Horsham culture. His broader, ultimate goal was to envision what kind of dwellings the inhabitants had occupied and how these small groups of people moved seasonally from site to site. Clark had not revised the aims of archaeology but had elaborated them.

The concepts of time and space dominated Clark's thinking and helped to organize his approach to excavation. For example, in his discussion of excavation techniques in *Archaeology and Society*, Clark modelled his analysis of how to excavate on the methods he had used to analyze lithic remains throughout his career. The archaeologist must first study the morphology of a site. By morphology Clark meant the layout and physical plan

left by wall remains or potholes. This is the synchronic, spatial aspect of site analysis. Next the archaeologist should study the stages the site had passed through. Thus, after the ground plan of the site had been recovered, the worker must document the diachronic or evolutionary aspect of the remains. For example, in his analysis of the Arminghall monument, Clark first investigated the form or layout of the site and then discussed the question of origins and ancestral possibilities. He also used a lithic model to classify the henge monument according to form and function, before proceeding to analyse the site's history.

In the late 1930s, the theme of "the interaction of society and environment as expressed in material culture" (Childe 1952:209) can be seen in Clark's growing interest in seasonality and in his continued deterministic use of geographical and geological aspects of the environment to explain cultural traits (1935b, 1936c, 1937f). For example, according to Clark (1935b) geography determined the chief prehistoric features for the Isle of Man. However, throughout *Archaeology and Society,* he demonstrated a growing awareness of the complexity of causation, and referred to the environment more subtly than in his earlier work. In his (1939a:158) discussion of the possible interrelations which may exist between different aspects of a society, the "endowment of the area of settlement," its topographical and geological features, were mentioned in a slightly less deterministic manner than in his 1935 Isle of Man study. In his discussion of the use of ethnographic analogy, he stressed the variety of forces which may affect material culture. When describing houses and settlement, he cautioned the archaeologist to keep in mind the "seasonal, economic and social specialization" of the site (Clark

1939a:160). "It is failure to comprehend the complexity of the subject that has led to many serious errors," Clark (1939a:160) concluded.

Clark's greatest strength in *Archaeology and Society* was his ability to demonstrate what archaeologists do know about how humans lived, despite the limited record.

Clark was introduced to archaeology through his childhood love for flint collecting, learned to excavate while working with Charles Phillips at E.C. Curwen's excavations, admired interdisciplinary Scandinavian archaeology from the beginning of his career, and was influenced methodologically and theoretically by the German and Vienna school of culture-historical archaeology. Dorothy Garrod's 1926 treatment of British epi-palaeolithic cultures provided a basis for his Mesolithic Ph.D. research, in which he stressed West Baltic and Continental cultural influences in Britain.

Clark (1933h:232) defined archaeology as "the study of past distribution of culture-traits in time and space, and of the factors governing their distribution," and researched the first part of this definition by developing exact, detailed typologies built on the assumption that lithics and pottery forms evolved and could be arranged in chronological order. He assumed that an assemblage automatically represented a cultural and ethnic group, and suggested changes resulted from invasions by new people. His primary goal was the establishment of relative dates for British assemblages and the delimitation of the Mesolithic as a unique area for research. The Mesolithic was defined as a non-evolutionary period intervening between the Palaeolithic and Neolithic, precipitated by drastic post-pleistocene climate, faunal, and forest changes, and characterized by distinctive flint industries.

Clark was a founding member of the interdisciplinary Fenland Research Committee and published thirteen reports in co-operation with the Committee's specialists during the 1930s. In these studies, he combined several independent lines of

investigation to reconstruct a history of human occupation and geological, geographical, climatic, faunal, and botanical changes in the prehistoric Fenland. During his association with the Committee, Clark's goals, typological analyses, and definition of archaeology did not change. However, he broadened his methods, stressing the importance of excavating to study past distribution of culture-traits and argued for the investigation of wetland sites which preserve organic material. Clark's demonstration of the relevance of Scandinavian natural scientific techniques was a major contribution to British archaeology.

Clark was active in the Prehistoric Society of East Anglia from 1929, strongly influential in the formation of the national Prehistoric Society in 1935, and as Honorary Editor of the Society's journal until 1970, facilitated the expression of innovative, interdisciplinary, professional research. He expanded upon his experience with the Fenland Research Committee by publishing *The Mesolithic Settlement of Northern Europe* in 1936, in which he researched the interaction of cultures and environment as expressed in material remains. For the first time in his career, he briefly introduced the reconstruction of prehistoric subsistence patterns and "social outlook" into the study of past distributions of culture-traits. His definition of archaeology remained the same, as did his typological methods and goals. However, his synthesis of vast amounts of new information from Scandinavian and German studies of settlement sites and seasonal faunal remains foreshadowed change. He exhibited some conceptual difficulties and circular thought when discussing environmental determinism.

Throughout the late 1930s, Clark frequently published his personal opinions in the "Current Prehistory" and "Notes" section of the *Proceedings*, when reviewing European studies of seasonality and settlements. Clark suggested these exemplary excavations afforded a closer look at the life of prehistoric society. Concurrent with these reports, Clark was influenced by Thomson's Australian seasonality study and Tallgren's functionalistic re-evaluation of prehistoric archaeology's methods. In his excavation of Farnham Mesolithic pit-dwellings, for the first time, Clark applied methods to determine the site's seasonality, suggesting a winter habitation. In *Archaeology and Society*, he redefined archaeology as the study of how humans lived in the past and theorized many different aspects of Society were interrelated. Because of these interconnections, archaeologists could infer information about aspects of society other than the economic basis. His typological methods remained the same and Clark continued to argue that typological analysis was crucial to the discipline of archaeology and must precede interpretation. By 1939, Clark discussed the complexity of forces which may affect material culture and referred to the environment less deterministically than in his earlier work.

One of Clark's strongest contributions to archaeological practice, apparent throughout the four sections of the thesis, was the intellectual strategy he successfully demonstrated when consistently using several lines of evidence to support an interpretation. When categorizing an artifact, he studied morphology, possible function, material and technique used in manufacture, distribution, degree of patination, and associated finds. When classifying an assemblage, Clark (1932a:111) considered the total

"character of the industry," examining presence and absence of tool types, percentage of different artifact types, general state of preservation of remains, associated finds with the site, and artifacts and assemblages from neighbouring areas. When evidence from separate sources converged, he felt confident to state his conclusions.

An interesting aspect of Clark's early work is the apparent lack of influence by his well known contemporary V. Gordon Childe in Clark's discussion of diffusion. The absence is especially noticeable as Clark referenced and recommended sources in which Childe had examined this concept in detail. In "The Forest Cultures of Northern Europe: A Study in Evolution and Diffusion," an article Clark often referred to, Childe had described how diffusion might have resulted when people observed and imitated visiting artisans; how valuable inventions might have been diffused as the Magelmose travelled the extensive waterways of northern Europe; and how ideas could have been exchanged during brief seasonal encounters (Childe 1931a:329, 338). Diffusion could result from mere cultural borrowing rather than an "actual infiltration" of people (Childe 1931a:342).

In contrast, throughout the 1930s, Clark did not discuss diffusion in an elaborated manner. For example, in his dissertation, Clark consistently considered diffusion to be a result of migration, invasion, or occasional trade. During his association with the Fenland Research Committee, Clark (1936b:49) published a major study of Mildenhall pottery, discussing how differing types could be used as "evidence of contact . . . between the indigenous Middle Bronze Age folk and the new-comers associated with the arrival of Deverel-Rimbury pottery." Throughout this investigation, Clark concentrated on typologically analysing the pottery remains rather than on detailing possible modes

of contact and diffusion. In *The Mesolithic Settlement of Northern Europe*, he did explicitly treat diffusion as the spread of ideas when explaining the appearance of pottery in Ertebølle assemblages, but this was an isolated incident. Later in the decade, when discussing the spread of innovations in *Archaeology and Society* Clark (1939a:207) did not explain how "the principle of diffusion" operated.

Nor does Clark seem to have been influenced during the 1930s by Childe's efforts to redefine the terms Palaeolithic and Mesolithic. As early as 1931, Childe (1931b:296) observed that these labels confusingly denoted both cultural grades and chronological divisions. In his 1935 presidential address to the Prehistoric Society, Childe expanded upon these ideas, recommending Palaeolithic or Neolithic be used to indicate economic stages. As a founding member of the new Society and Honorary Editor of its Proceedings, Clark would almost certainly have been present at this lecture and have been exposed to Childe's argument. Furthermore, Childe's suggestions to clarify the situation were favourably reviewed by Christopher Hawkes, an archaeologist whom Clark knew and admired (Daniel 1986:211). However, again in 1936, Clark (1936a:XV) wrote, "The period of time during which Mesolithic cultures were dominant (the Mesolithic period, as we shall call it for short) obviously varied in length in different regions." Here, as in his dissertation, the term indicated both a time period and a group of assemblages. By 1939, in *Archaeology and Society*, he consistently defined the Mesolithic as a period label only. For example, when discussing Scandinavian settlement remains, Clark (1939a:165) wrote, "with the Maglemose culture of Mesolithic times . . . our information is virtually confined to summer stations." Thus, he was not

influenced by Childe or the Hawkes' (1935:334) advice that names such as Neolithic and Mesolithic "which were once used to denote exact periods of time are now better used to imply states of cultural development, and should in the future be employed in this sense alone."

Perhaps this apparent lack of influence can be explained by comparing two book reviews. Both Clark and Childe were enthusiastic about Menghin's 1931 publication, *Weltgeschichte der Steinzeit*, but each stressed a different aspect of the work. Childe was concerned with Menghin's attempt to redefine concepts, and was interested in the book's intellectual context. He gave a brief history of Graebnerian ethnographic theory, to which Menghin was indebted, discussing the assumptions behind the work, and suggested the criteria used to create culture-cycles might be as artificial as those used to establish nineteenth century chronological epochs (Childe 1931b:296, 297). In contrast, Clark was primarily interested in the more technical aspects of the publication, especially with how Menghin fit certain industries into the classificational scheme of culture cycles and how these cycles underlay or contradicted the research of other archaeologists. Clark was "lithically minded" and concerned with the implications of Menghin's thinking for the genetic relationships of European assemblages.

The differences between these two reviews are germane to Clark's and Childe's separate intellectual identities. Throughout his career, Childe was concerned with broad theories of history and finer conceptual distinctions. Clark was concerned with how to do archaeology and how to apply innovative methods to enhance classifications, excavations, and economic and social reconstructions. It would seem that Clark did not

respond to Childe's suggestions because his focus and strengths were in a different area. Throughout the 1930s, Clark was especially talented at establishing typological sequences and the distribution of artifacts in order to assign relative dates to British sites, and at introducing and demonstrating to the British audience new approaches to archaeological data, but did not seem to focus his attention and intelligence on explicating these concepts.

There are also incidents when Clark's conclusions and statements paralleled Childe's, but Clark did not recognize Childe's work as a possible source. In 1931, Clark suggested that the Beaker culture was comprised of two distinct complexes which had invaded England from differing directions (1931b, 1931d). In response, M. Mitchell (1932:90) remarked this "fact [had] already [been] brought forward by Professor V.G. Childe in his *Bronze Age*" published the year before. "The theory of a single landing place is now generally rejected," wrote Childe (1930:156), noting that two distinct Beaker pottery complexes existed in prehistoric Britain. Clark elaborated on Childe's work, using distributional mapping to suggest entry points to Britain; however their arguments were very similar.

In the latter half of the decade, Clark (1939b:100) would occasionally mention his dissatisfaction with the "fossil mentality" of archaeological approaches which excluded the study of how humans lived in the past. Such statements were very reminiscent of Childe's (1931b:300) definition of archaeology: Archaeology should be regarded "as a means of revivifying the life of the past and not a sort of puzzle in classifying dead fossils." Again, in the final chapter of *Archaeology and Society*, Clark (1939a:208)

stated that because of the "overwhelming importance of diffusion" in prehistory, no one nation could be superior. Trigger (personal communication 1993) has pointed out that these ideas were developed earlier by Childe. In two articles published in 1933, Childe (1933c, 1933b:417-418) argued, considering the diffusion of ideas and the pooling of collective contributions which has occurred, "To admit as good only what is . . . Germanic . . . is unscientific and unhistorical."

In addition to the above parallelisms, Clark's (1938a:262) argument, printed in his history of the County of Cambridge, that the spread of metal artifacts "being easily effected by trade, has no necessary connexion with ethnic" movements, is similar to Childe's view, expressed in *The Danube in Prehistory*, that weapons were unreliable as indicators of ethnic identity.

Although Childe was teaching at the University of Edinburgh during the 1930s, he was involved in both The Prehistoric Society of East Anglia and The Prehistoric Society when Clark was Honorary Editor and a member of the Society's Executive. Clark would likely have been aware of Childe's work, and I do suspect that the similarity in ideas reflect a definite influence, despite the absence of citations. It would seem that references alone are not a good indicator of academic influence in Clark's research.

Another interesting aspect of Clark's work was his changing goals and how these goals were affected by interdisciplinary information. Throughout his association with the Fenland Research Committee, Clark's major aim was to correlate archaeological remains with recent geological deposits in order to establish relative chronologies for British assemblages. He consistently used the vast amount of information resulting from

interdisciplinary investigations to serve this purpose. For example, in his acclaimed Shippea Hill excavations, Clark (1933a, 1935a) correlated the evidence resulting from the Godwins' pollen analysis, Jackson's faunal analysis, and Kennard's study of mollusc shells with his typological analysis of artifacts to place the archaeological remains in a stratigraphical context. In his final Fenland Committee report, published in 1940, Clark presented a detailed typological study which successfully dated a hoard of metal artifacts to the latter half of the late Bronze Age. Here he continued to study the distributions of artifacts in time and space, implementing the same goals and definition of archaeology which he had used in his 1928 distributional study of discoidal knives. It would appear that the increased knowledge and new sources of interdisciplinary data did not influence Clark to augment his aims while writing reports for the Committee.

Concurrent with his Committee work, Clark published *The Mesolithic Settlement of Northern Europe* in which he synthesized diverse interdisciplinary information from eleven countries and incorporated the reconstruction of subsistence practices and a description of the "social outlook" of prehistoric people into his research (Clark 1936a:127). In the years following, he studied Russian, German, and Scandinavian settlement excavations, chose to publish ethnographic information from Australia on seasonality, and expressed a growing dissatisfaction with merely establishing chronologies. When reporting the excavations of a Danubian peasant site at Köln-Lindenthal, Germany, Clark (1936bg:246) stated, "the time may soon come when we in England can progress from cutting sections and establishing the bare bones of chronology to opening up whole settlements." By the end of the decade, Clark (1939f:260) who had

repeatedly discussed international archaeological developments in "Current Prehistory," could suggest the development of culture was "immensely more complex than the student of fossil material forms is always ready to admit." In the same year, in *Archaeology and Society*, he redefined archaeology stating, "now has come the time [to excavate settlements and] to lay bare the structure and workings of early societies" (Clark 1939a:211).

By the end of the 1930s, it would seem that Clark's goals had become situationally determined. Although by 1940, he had concluded that archaeology could entail more than chronological studies, his assignment for the Committee was to establish cultural sequences for the Fenland area, and he remained faithful to this original task. However, his experience with the Committee convinced him of the importance of using natural science techniques such as pollen and faunal analysis.

Partly because of this exposure to new techniques and international research, Clark demonstrated more choice in goals as his career progressed. In 1927, his only aim was to properly classify artifacts by form, use, and distribution. By 1939, although still insisting on the fundamental importance of creating typologies, his broader goal was to reconstruct people's economic and social lives. As Clark (1939b:107) stated, once archaeologists "have the bare bones collected and mounted in position," they can begin to study the people of the past.

A question arising from research into Clark's later 1930s work is whether he could be considered a functionalist by 1939 with the publication of *Archaeology and Society*. Accompanying this question is the issue of whether he was influenced by

Radcliffe-Brown and Malinowski during the early 1930s. In addition to points made previously, Clark did not have to look to Radcliffe-Brown or Malinowski for a functionalist point of view. Childe had recommended the idea of studying cultures as if they were composed of organically interrelated parts in his 1935 presidential lecture to the Prehistoric Society. He suggested archaeologists could find out how groups got their food or how far labour was specialized by viewing a culture "not as a dead group of fossils but as a living functioning organism" (Childe 1935a:10). Clark's statement in *Archaeology and Society* that society had a structure and its parts were interrelated could have been the result of contact with other archaeologists, such as Childe or Tallgren, or the result of his own independent, clear thinking stimulated by studying settlement excavations.

The question of whether or not Clark was a functionalist by 1939 depends upon how we define functionalism. Trigger suggests that there are at least two definitions of this term. The first is a 1960s, Binfordian, processual definition, in which a functionalist archaeologist would conceive "of artifacts not simply in formal terms or even in terms of the specific use they were put to, but rather in terms of the role that these artifacts played in the social systems that created, used, and disposed of them" (Trigger personal communication 1992). If we define functionalism in this manner, Trigger agrees that Clark would not qualify in 1939. At this point in his career, Clark was a pragmatic thinker who used artifacts to reconstruct economic and social patterns and saw society as having a structure in order to facilitate his analysis. He did not analyse the social role of artifacts or how they were systematically related to the structure.

Functionalism can also be defined in a pre-processual, Durkheimian manner. A pre-processual functionalist archaeologist would simply view "all aspects of a social system as interrelated to one another [and] in as much as Clark saw living social systems as integrated and complete patterns for life for a society, I would call him a functionalist" concludes Trigger (personal communication 1993). If functionalism is defined in this manner, then Clark's 1939 diagram showing the interrelationships of different aspects of society would be sufficient to categorize him as a functionalist.

Clark's early training in typological analysis of lithic forms affected his archaeological methodologies throughout the 1930s. When classifying Maglemose art motifs and bones, Mildenhall Fen pottery, and Bronze Age palstaves, he employed the same typological methods he had used when studying flint arrowheads and knives. He conceptualized a broad category, divided the category into classes by studying variations in forms, and mapped the distributions of the differing classes. Furthermore, Clark described his approach to excavating in terms borrowed from lithic studies. The archaeologist should first research the "morphology" of the site (Clark 1939a:86). Once the site's layout or physical form is known, the evolutionary, historical aspect of the site may be documented. For example, Clark used a lithic model to classify the Arminghall monument according to its form and function before investigating the site's history. In addition, when discussing excavation techniques, Clark (1939a:93) stated personal experience was "the only real guide" to proper digging. This is reminiscent of his attitude toward studying surface lithic finds. He always handled and drew the artifacts himself, stressing the importance of personally scrutinizing specimens before making

intuitive judgments about morphology. In both cases, the archaeologist's skill and experience were crucial. Thus, Clark's concern with studying the form and evolution of lithic surface finds, and the distribution and cultural sequence of assemblages had grown into a concern with analysing excavated sites.

From 1949-1951 Clark (1949a:64) directed the interdisciplinary excavation of Star Carr, "one of the richest and most informative sites of the [Baltic] Maglemosian culture anywhere in north-western Europe," which multiplied many times the evidence available in Britain for early Mesolithic settlements. Star Carr yielded 193 barbed antler and bone points, where previously only six specimens had been known. Many new categories of artifacts were found, such as skin working tools and antler masks. The faunal assemblage was by far the largest from a British Mesolithic excavation, beautifully preserved because the site was waterlogged. Investigation revealed an abundant homogeneous flint industry and a birch brushwood flooring, indicating a lake-side camp.

Clark (1972a:2) more recently writes, Star Carr was "something I had been seeking for many years." From the early 1930s, Clark had been searching for possible Maglemose remains in England. He first mentioned evidence for Baltic "influences" in eastern England in his dissertation (Clark 1932a:14-18) and reviewed this material in the introduction to his 1949 Star Carr site report (Clark 1949a:52-55). In 1933, when analysing the results of the Plantation Farm excavation, Clark (1933a:293) concluded fen conditions "obtained across what is now the floor of the southern part of the North Sea," permitting easier contact with Scandinavian peoples. Again in the Fenland Research Committee's excavation at Broxbourne, Clark (1934d:119) argued the site represented

"an extension of the Mesolithic forest cultures." In his 1934 synopsis of Fenland research and in his analysis of the Bronze Age hoard of metal artifacts which had been preserved in peat, Clark suggested more wetland sites should be investigated because they were favourable to the survival of organic material such as bone and antler remains.

In *The Mesolithic Settlement of Northern Europe*, Clark noted Maglemose sites were consistently discovered in damp areas, near lakes, bogs, or fens. Scandinavian archaeologists had found ample faunal evidence of summer occupation, and Clark suggested that the Maglemose lake side dwellers migrated seasonally, a point he later made in his interpretation of Star Carr. In the latter half of the decade, Clark (1936g) praised the German excavations of a complete Danubian peasant settlement at Köln-Lindenthal, suggesting English archaeologists begin to open up whole sites. Thirteen years later, Clark attempted to excavate the entire inhabitated area of Star Carr.

In 1938, when reporting on Schwantes' and Rust's excavations of pre-Mesolithic summer camp sites in northern Germany, Clark recommended British archaeologists study silted up lakes and hoped the German success would inspire his colleagues to find similar seasonal encampments. Star Carr, situated on the border of a silted lake, was this inspired discovery.

In the 1939 edition of the *Proceedings*, Clark reviewed the evidence for seasonality from France, mentioning de Saint-Perier's analysis of antlers found at a shelter in Lespugne. De Saint-Perier had noticed that all the male antlers were shed but the female and young carried portions of the skull. From this he concluded that the shelters were occupied in the winter. In the 1950 Star Carr report, F.C. Fraser and J.E.

King from the British Museum, conducted a similar analysis of shed and unshed antlers, concluding tentatively the site could have been occupied at several times of the year.

Viewed from this perspective, the discovery of Star Carr seems predictable. The history of Clark's earlier research allows us to understand more clearly his later choice of sites, technique of excavation, and interpretation of Star Carr as an early Maglemose seasonal habitation. Furthermore, knowledge of his first publications, especially his typological analyses, illuminates Clark's later methods of classifying monuments and excavating sites and enables us to view in depth his transition to a functionalistic approach which was beginning with the publication of *Archaeology and Society*. This history documents how Clark's childhood passion for collecting flints led to "a life's work of absorbing interest" (Clark 1939a:212).

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