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Fokkens, Harry; Coles, Bryony; Gijn, Annelou van; Kleijne, Jos; Ponjee, Hedwig; Slappendel, Corijanne et al.; Fokkens, Harry; Coles, Bryony; Gijn, Annelou van; Kleijne, Jos; Ponjee, Hedwig; Slappendel, Corijanne

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AN EXTENDED BROAD SPECTRUM OF PAPERS
PRESENTED TO LEENDERT LOUWE KOOIJMANS

EDITED BY

HARRY FOKKENS, BRYONY J. COLES, ANNELOU L. VAN GIJN,
JOS P. KLEIJNE, HEDWIG H. PONJEE AND CORIJANNE G. SLAPPENDEL



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Faculty of Archaeology
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On the production of discoidal flint knives and changing patterns of specialist flint procurement in the Neolithic on the South Downs, England

Julie Gardiner

20.1 INTRODUCTION

In the greater part of the British Isles a large proportion of our evidence for the material culture of the Neolithic resides – largely forgotten and certainly unloved – in the stores of countless museums. Many tonnes of surface recovered flint artefacts, many of them completely uncatalogued, have been deposited over the last couple of centuries by innumerable flint collectors but only rarely has any of this vast resource been studied in any systematic fashion or alongside more ‘scientifically’ recovered assemblages from controlled fieldwork. In 1980 the present author began researching into surface flint scatters from the English South Downs for a PhD supervised by Richard Bradley. Richard introduced me to Leendert Louwe Kooijmans (at a conference appropriately dedicated to the subject of flint; Sieveking *et al.* 1986) and an earnest but convivial discussion ensued as to the value and importance of such collections on both sides of the North Sea. This led to an invitation to visit Leiden where I spent a month studying comparative assemblages and discussing with Leendert and his colleagues methods and approaches to the recording, evaluation and analysis of surface assemblages. Together with the many museum visits, introductions to Dutch archaeologists, quantities of Old Genever and highly competitive games of table tennis, this proved to be a formative sojourn in my early career.

Despite the acknowledged difficulties in working with such unsystematically recovered material, any detailed study of surface assemblages over a large area quickly reveals marked disparities in the range and variety of objects present, both spatially and between the surface collected material and that from most excavated sites. Such differences can be examined and explained in a variety of ways (see for instance Gardiner 1984; 1987; Healy 1987) and the arguments will not be rehearsed again here.

It was, of course, the identification of recognisably distinct toolkits that led to the adoption of the eponymous sub-divisions of the Stone Age in the first place, and our vastly increased and refined understanding of the many and varied components of the Neolithic toolkit (lithic and otherwise) has been the result of more than a century of detailed study by a host of scholars. We should not forget, however, that the earliest, and some of the most influential,

of these scholars were working almost entirely with unstratified finds (most obviously and importantly Evans (1872; 1897)) and that their work remains, in large part, entirely valid today.

It goes without saying that we now have a reasonably good idea of the chronology, sequence, spatial distribution and cultural associations of Neolithic flintwork assemblages among many classes of site and in many contextual situations at local, regional and national scales. But one result of our greatly expanded knowledge is that we can now see that some lithic objects fall *outside* the ‘normal’ run of Neolithic flintwork, in terms of their technological attributes, raw material and/or distribution, yet cannot be neatly accommodated in any close spatial, temporal or contextual ‘package’. We might, for instance, be able to distinguish (up to a point at least) and predict the components of a ‘Beaker package’ or a ‘Wessex 1 burial’ or a series of ‘Grooved Ware pits’ incorporating lithics but some distinctive classes of artefact continue to defy such neat categorisation. Moreover, they may cross-cut, or be entirely absent from, such ‘structured’ deposits, but in so being they may make an important contribution to our understanding of the development of Neolithic society.

Such artefacts can be seen to contribute to the suggestion of a new concept of Neolithisation. Like decorated pots or monuments they may have become ‘special’ in their own right. They may not appear prominently in the burial record, or exclusively in unusual or specific contexts, but they may have attained a recognised relative value or status beyond any (to us) obvious attribute other than, perhaps, their distinctive appearance. One such candidate is the polished discoidal knife.

20.2 DISCOIDAL KNIVES

In 1928 Grahame Clark, drawing on earlier descriptions by Evans (1872; 1897) and research by Clay (1928), published one of a series of seminal artefact studies on the definition and classification of polished discoidal flint knives. A simple typology was recognised, consisting of essentially circular, triangular, lozengic or rectangular forms up to 10 mm thick with maximum dimensions ranging between *c.* 50 mm and 100 mm. Clark’s description has not been bettered,

the knives are “flaked on both faces so as to remove both bulb and striking platform, the edges being further bevelled by polishing. The faces are also smoothed down to remove sharp intersections of flake scars. One edge was usually blunted either by flaking or polishing to allow a grip” (1928, 41; fig. 20.1)

Clark catalogued 133 British examples and noted their markedly clustered distribution, with a large concentration (41 examples) around Grimes Graves in Norfolk, and smaller clusters in Scotland (13), Northern Ireland (9), East Yorkshire (12), Derbyshire (8), the Thames Basin (13), and the Sussex Downs (16). A few other examples were spread across the South Downs with a few outliers in Wales and elsewhere (fig. 20.2). He suggested that there were clear regional preferences in form and commented on the close association between the knives and the chalk and noted a string of finds along the Rivers Thames and Kennet.

Remarkably, the number of these conspicuous and distinctive objects has probably no more than doubled in the 80 years since Clark’s publication, in spite of the exponential rise in flint artefacts that have accumulated through archaeological work of all types. Furthermore, whereas our understanding of most classes of Neolithic

artefact has improved dramatically over that period, the more recent finds of discoidal knives have done little to elucidate their depositional, social, or functional contexts and have served mostly to reinforce the distribution pattern observed by Clark rather than to dilute it. As a result, they remain somewhat enigmatic and, indeed, have been largely ignored in the literature. This paper does not aim to present a comprehensive review (or catalogue) of discoidal knives but will concentrate on a consideration of their distribution, associations and possible mode of production in one particular area (East Sussex) in order to suggest a social context and implications for the procurement, use and dissemination of specific raw materials and objects in the later Neolithic. However, before focusing on one region we first need to look again at the wider pattern and consider some previous observations.

20.3 DISTRIBUTION

Clark’s basic observations still hold good, though it is clear that some parts of the British Isles are, and probably were in 1928, considerably better endowed with discoidal knives than he appreciated (there are, for instance, around 50 recorded from the Irish mainland (Woodman *et al.* 2006, 177-178) rather than just the nine he catalogued from Northern Ireland in Co Antrim). He recorded 16 examples from the Sussex Downs whereas 33 are plotted in figure 20.3 – the majority of which were already extant in museum collections that were well known to Clark (Gardiner 1987). For the South Downs as a whole there are at least 56, over twice as many as are shown on figure 20.2.

In bald statistical terms Clark’s comment on the apparent association between these objects and the chalk is hardly borne out – only 55% of his total are definitely from chalkland locations and 45% of those are from one tight cluster in East Anglia. On the other hand, given the comparatively small area of the total British mainland that comprises chalk, it is a striking correlation that has not been compromised by more recent finds.

On the South Downs generally, while the largest number of knives occurs in a very small area inland of Beachy Head in East Sussex, there is a rather wider scatter of finds than in 1928, with examples reported both on the Chalk and on the Lower Greensand that fringes it in Surrey and increased numbers on the northern Hampshire Downs, where several roughouts are recorded (Gardiner 1988). Finds along the Thames have also increased in number but, unlike some other classes of later Neolithic artefact (such as axes), where any contextual information is available the implication seems to be that the knives are from the floodplain, not from the river itself – and they occur on both sides of it.

In Wiltshire, most of the handful of examples occur in the Avebury region, several of them close to the River Kennet.

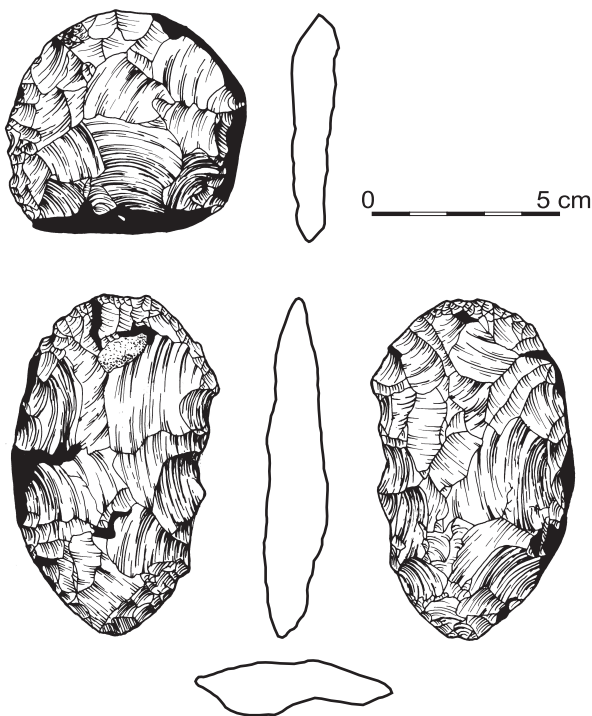


Figure 20.1 Part polished discoidal knives from (top) Hampstead Park, Southampton and (bottom) Eastbourne, Sussex.



Figure 20.2 Clark's (1928) map of discoidal knives (reproduced by permission of the Prehistoric Society).



Figure 20.3 Distribution of discoidal knives in southern England.

This introduces a second aspect of the distribution, namely the types of depositional contexts in which these objects occur, and their date.

20.4 CONTEXT AND DATE

Both Clay (1928) and Clark commented that the majority of knives were known only as surface finds with little more than circumstantial evidence to associate them with any particular type of pottery or category of Neolithic or Early Bronze Age site. Their fine workmanship and the obviously high level of skill required to produce them, led Clark to assume that they formed a small but distinctive element of the 'Beaker Package'. The few close or definite associations that he could establish involved barbed and tanged arrowheads and at least one dagger, while their greatest concentration, in East Anglia, lay in the midst of a correspondingly large population of Beakers. Only at the Arbor Low henge, in Derbyshire, did there seem to be any direct link with a monument.

These knives undoubtedly reflect the high level of workmanship that we would tend to associate with high status objects and this led the present writer to place them among a class of 'fancy' knives alongside plano-convex knives, daggers and sickles (Gardiner, 1988, table 2). By analogy with other types of 'prestige goods' of the later Neolithic we might expect that possible status to be reflected in their overall distribution in relation to the major monument complexes of the period, even if actual contextual information proved lacking (Bradley 1984; Gardiner 1988). Edmonds (1995, 96-97) comments on "a group of elaborate flint and stone axes, plano-convex, discoidal and polished knives,

specialized arrowheads, carved stone balls, polished or finely flaked chisels, laurel leaves and maceheads", observing that some of these "occur as exotica in areas remote from their sources, and many appear to have been accorded a measure of special treatment ... for the majority ... a special status can be inferred from the circumstances attending their deposition".

Unfortunately, there remain very few clear depositional contexts for discoidal knives. Two examples are from East Yorkshire. One is from a grave at Aldro Barrow (C75) while the unusual Neolithic round barrow at Duggleby Howe contained, among other burials, a crouched inhumation (burial 6) accompanied by a very fine rectangular polished discoidal knife. Re-assessment of the burial sequence (Kinnes *et al.* 1983; Manby 1988; Loveday 2002) indicates that this belongs to the same phase as another inhumation burial (burial 5) of an adult male with a lozenge arrowhead, an antler macehead and a Seamer type flint adze. The macehead has recently been radiocarbon dated to 4597 ± 35 BP or 3500-3130 cal BC at 2 sigma (OxA-13327; Loveday *et al.* 2007 with caveats). Although there is no direct association with pottery Kinnes *et al.* suggest that, stylistically, the knife is more comparable to examples found in Yorkshire with Peterborough Ware than with Grooved Ware. A few other 'special' deposits can be recognised, for instance in hoards with flint and/or stone axes, as at Great Baddow in Essex (Varndell 2004) or Banham in Norfolk (Gurney 1990).

Unpolished examples were recovered from the mineshaft excavated at Grimes Graves, Norfolk in 1971 (Saville 1981, 36) and also from surface workings (Varndell in prep), which also produced Grooved Ware (see also below). Other specific

cultural associations are few but include apparent co-occurrences with Grooved Ware and Beaker (*e.g.* Manby 1974, 29-30; 1999). Few records are unequivocal; they certainly indicate that the type was long-lived and not associated exclusively with any particular mode of deposition or type of pottery.

Viewed at this level, the distribution too seems confused and contradictory. In some respects it may be where knives do not occur that is as telling as where they do. For instance, while Clark's observation that the East Anglian group was focused around Grimes Graves is certainly true, and some examples were clearly made there (see below), a closer look reveals a predominantly fen-edge distribution in an area which is now known to contain numerous small henge-like structures, so the situation may be more complicated than first appears. Similarly, the trail of knives along the Kennet all happen to be within a few kilometres of Avebury, the Yorkshire Wold knives are concentrated around the Rudston monumental complex and those in Derbyshire cluster around Arbor Low.

On the other hand, apart from a single example from Durrington (close to the river Avon; Clay 1928), discoidal knives are simply not a feature of the Stonehenge landscape and are significantly absent from the spectacular, Grooved Ware associated, lithic assemblages recovered in the ongoing programme of excavations inside and close by Durrington Walls and Woodhenge (Parker Pearson *pers. comm.*). Cranborne Chase, with its ostentatious and complex patterns of monuments and specialised object deposition has produced just four discoidal knives, all stray surface finds: not a single example has been recovered in the extensive fieldwalking and excavation programmes reported in recent years (Gardiner 1988; Barrett *et al.* 1991a; 1991b; Green 2000; French *et al.* 2007). Nor were any found by General Pitt-Rivers – a point of some significance given that many of the finds from the Beachy Head area were made by him. Similarly, despite the presence of a complex and varied group of Late Neolithic monuments and an extensive history of excavation and surface collection, there are none from the Dorchester/Dorset Ridgeway area.

The Cranborne Chase scenario amply demonstrates a further point, namely that discoidal knives are not part of the material culture repertoire of Late Neolithic pits. We cannot escape the fact that the majority are surface finds. As Varndell summarises (2004, 121) they are not found in burials and “hengese were not a context for their use”. It is very clear from the associated assemblages that these objects belong firmly among the extensive family of later Neolithic flintwork and are not members of the more exclusive suite of items that experienced highly structured depositional practices focused on monumental complexes, accompanied later Neolithic ceramics (especially Grooved Ware) or that

occurred in Beaker burials. In fact, David Clarke (1971) does not cite a single example of an associated polished discoidal knife in his entire Beaker corpus. It seems that both Grahame Clark's Beaker context, and Edmonds' special circumstances of deposition are simply not characteristic of this particular class of apparently high status object.

So how might we account for them? What might their very localised distribution but apparently unstructured mode of deposition imply about where, how and why they were produced? Could this indicate any wider implications concerning the procurement and use of quality flint resources for the manufacture of specific items alongside that of 'everyday' flintwork? What kind of social context might be inferred?

2.5 RAW MATERIAL AND SOURCES

There are few considerations of the source of discoidal knives or of the raw materials from which they were made. Whether or not Clark took it for granted that knives found in the area of the Late Neolithic flint mines at Grimes Graves in Norfolk were made there is not clear. The focus of his discussion was on their 'diffusion' outwards from East Anglia by Beaker Folk. In fact, throughout discoidal knives, including the sub-triangular form that features large among the East Anglian examples, occur at Grimes Graves and it is pretty certain that this was the source for a number of the local knives (Saville 1981; Varndell *in prep.*). In central Sussex, the mines had long since ceased axe production though there is considerable evidence for the use of nodules gleaned from surface dumps in the later Neolithic and Early Bronze Age (Gardiner 1988). There are half a dozen discoidal knives in the surrounding area, at least three of which are probably made from this 'mined' flint (*pers. obs.*). Intriguingly, three of the axes in the Great Baddow hoard in Essex were sourced to Sussex (Varndell 2004; Craddock *et al.* 1983) and the accompanying knife is in visually identical flint.

On the Yorkshire Wolds, a principal source of flint was the nodules incorporated in glacial tills outcropping in the cliffs at Flamborough Head and occurring in nearby beach deposits. A number of flintworking sites have been identified and excavated on the clifftops here (*e.g.* Sheppard 1910; 1921; Moore 1964; Manby 1974; Durden 1995) and Henson (1982 cited by Durden *op cit.*) confirmed that flint from this source was used for the manufacture of high status artefacts. Cotton (1984), in his examination of a small number of knives from Surrey, noted the use of predominantly chalk-derived flint for those examples occurring on the Downs and Lower Greensand, with more varied sources indicated by examples from the Thames floodplain.

Knives from the northern Hampshire Downs and the majority of those from Sussex are manufactured from flint

nodules obtained from localised Tertiary deposits known as clay with flints. In this respect they are entirely in keeping with the extensive assemblages of Late Neolithic flintwork that cover many parts of the Downs. The first conclusion that we can draw, therefore, is that the majority of knives occurring on or close to the chalk were made from resources that were local to their place of deposition.

2.6 LOCAL CONTEXTS

Because so many of the finds are 'old', unstratified and poorly provenanced it is very difficult to establish even a local context for their manufacture, use and deposition in most areas. The most detailed study, by Tess Durden (1995), centred on analysis of two fieldwalked flint scatters on the Yorkshire Wolds, one of which appeared to be a primary knapping site (South Landing) in a clifftop location close to Flamborough Head, and the other a fairly extensive hilltop scatter 15 km inland, that had produced a range of high status flint objects amongst a spread of knapping debris (North Dale). The latter site produced two rectangular polished discoidal knives (the most common form in East Yorkshire) and several possible roughouts, as well as very fine ripple-flaked oblique arrowheads and a Seamer type polished axe (Durden 1995, fig. 1). Here there were two major clusters of flintwork that included a range of cores and waste products indicative of tool manufacture, including possibly of discoidal knives, as well as a range of 'everyday' items such as scrapers and simple flake knives. Discoidal cores – a type used for the manufacture of transverse and oblique arrowheads and possibly also for discoidal knives, were unusually well represented and rejuvenation flakes were common. South Landing, in contrast, produced very few retouched forms and most of the material recovered was associated with nodule testing and core reduction.

Detailed statistical analysis showed that the level of skill employed at the clifftop site was much lower than that at North Dale, that discoidal cores were much less well-represented, and that little more than the basic roughing out of forms was taking place. Durden was further able to distinguish at least three separate workshop areas within the North Dale scatter that exhibited clear evidence of skilled, specialised tool manufacture and she concluded that South Landing was one of probably several extraction and primary working sites that supplied flint to more specialist flintworkers at North Dale and, presumably, other locations inland. A range of high status objects then circulated amongst communities in the region of the Rudston complex, some of them ending up in structured deposits and some as burial accessories – though, as we have already seen, such deposits rarely included discoidal knives.

On the East Sussex Downs, 27 discoidal knives are recorded as 'old' surface finds over an area of only 25 km² between

Brighton and Eastbourne (Clark 1928; Gardiner 1988). Circular forms dominate but D-shaped, rectangular and sub-triangular forms also occur. The block of downland east of the River Cuckmere is covered with extensive flint scatters of broadly Late Neolithic to Early Bronze Age date (hereafter referred to as the Beachy Head group), most of which echo the distribution of clay with flints deposits (fig. 20.5). Even within this small and apparently densely occupied area, however, the distribution of the knives is markedly clustered and this cannot be put down to collection bias (see Gardiner 1987 for an explanation). Some are 'stray' finds, others come from the major assemblages. Thirteen knives are provenanced to Beachy Head and at least eleven to around the head of a dry valley known as the Bourne Valley, which faces east over Eastbourne and the East Sussex coastal plain. Yet no further examples were produced during extensive field survey and excavation at Bullock Down (Drewett 1982) and Kiln Combe (Bell 1983; Allen 2005), just west and inland of Beachy Head, nor by excavations at the Beaker settlement site at Belle Tout, at the western end of Beachy Head (Bradley 1970; 1982), nor by excavations through colluvial deposits within the Bourne Valley (Allen 2007).

Moving slightly west, there is barely a 5 km gap between the eastern edge of figure 20.4 and the western edge of figure 20.5 but there is a distinct lacuna in the occurrence of major flint scatters in that gap. To the north of Brighton there are again extensive scatters of Late Neolithic flint, again concentrated on clay with flint deposits (hereafter referred to as the Saddlescombe group), but there are only four discoidal knives and some distinctive differences in the compositions of the assemblages between the areas of the two illustrations that might begin to provide a social context for the knives.

2.7 DISCOIDAL KNIVES AND THE FLINT ASSEMBLAGES ON THE EAST SUSSEX DOWNS

The Saddlescombe group of flint scatters concentrates on the high downland spurs, especially where these are capped by clay with flints. Lower down the dipslope they occur at the heads and on the upper slopes of dry valleys and combs. Most of the material was collected in the later 19th and early part of the 20th century and many thousands of objects were deposited in local museums and private collections (Gardiner 1987). The scatters are dominated by lightweight flake tools and there are noticeably high numbers of fabricators, chisels and related implements and piercing tools by comparison with other areas of the South Downs generally, and with the Beachy Head sites in particular (Gardiner 1988, chapter 9; 1990). There are few flake tools that demonstrate skilled workmanship, apart from plano-convex knives which are fairly numerous among the flint scatters (more than 30 were recorded by the present author (1988)) though scarce as stray finds. While flint axes are numerous and include many stray

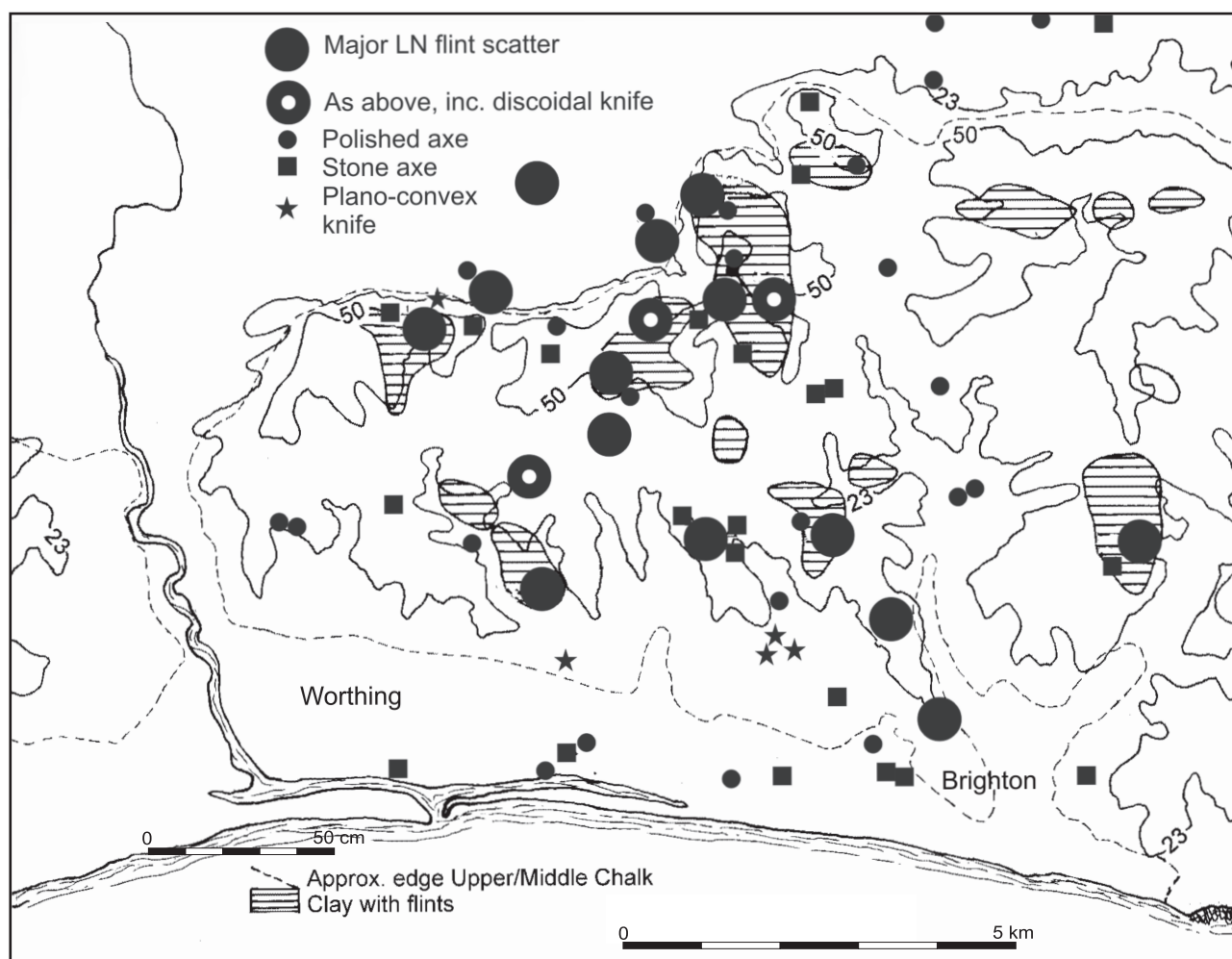


Figure 20.4 Late Neolithic-Early Bronze Age flint scatters of the Saddlecombe Group, Brighton, E. Sussex with distribution of discoidal knives and other selected objects (see text).

finds, they account for an average of 5.7% of implements within each assemblage, which is relatively low for the South Downs as a whole (excluding the flint mine sites), and there is an unusually high proportion of polished axes and fragments among them. In fact, the ratio of unpolished/roughout to polished axes is almost 1:1 and this ratio is reflected among the stray finds as well as within the major assemblages. The comparatively low frequency of unpolished axes is accompanied by an equally low proportion of heavyweight core tools, even though they are numerically common.

Major flint scatters among the Beachy Head group occur at intervals of 0.25-4.0 km (average 1.6 km) and their distribution emphasises clay with flints deposits at the dry

valley heads and especially hillsides with views over the sea or rivers. Although most assemblages comprise more than 50% flake tools, the overall composition of this element is generally less varied than for the Saddlecombe scatters and there is a greater emphasis on cutting and scraping tools. The Beachy Head sites have produced vast quantities of flint axes which account for an average of 17.4% of assemblages and here the ratio of polished to unpolished examples is 1:3.3. The proportion of heavy duty core tools (average 16.4%) is more than twice that for the Saddlecombe group. We should bear in mind that both areas were investigated by the same cohort of flint collectors, including Pitt-Rivers and Grahame Clark himself, and the differences noted are consistent across all the major collections (Gardiner 1988; 1990).

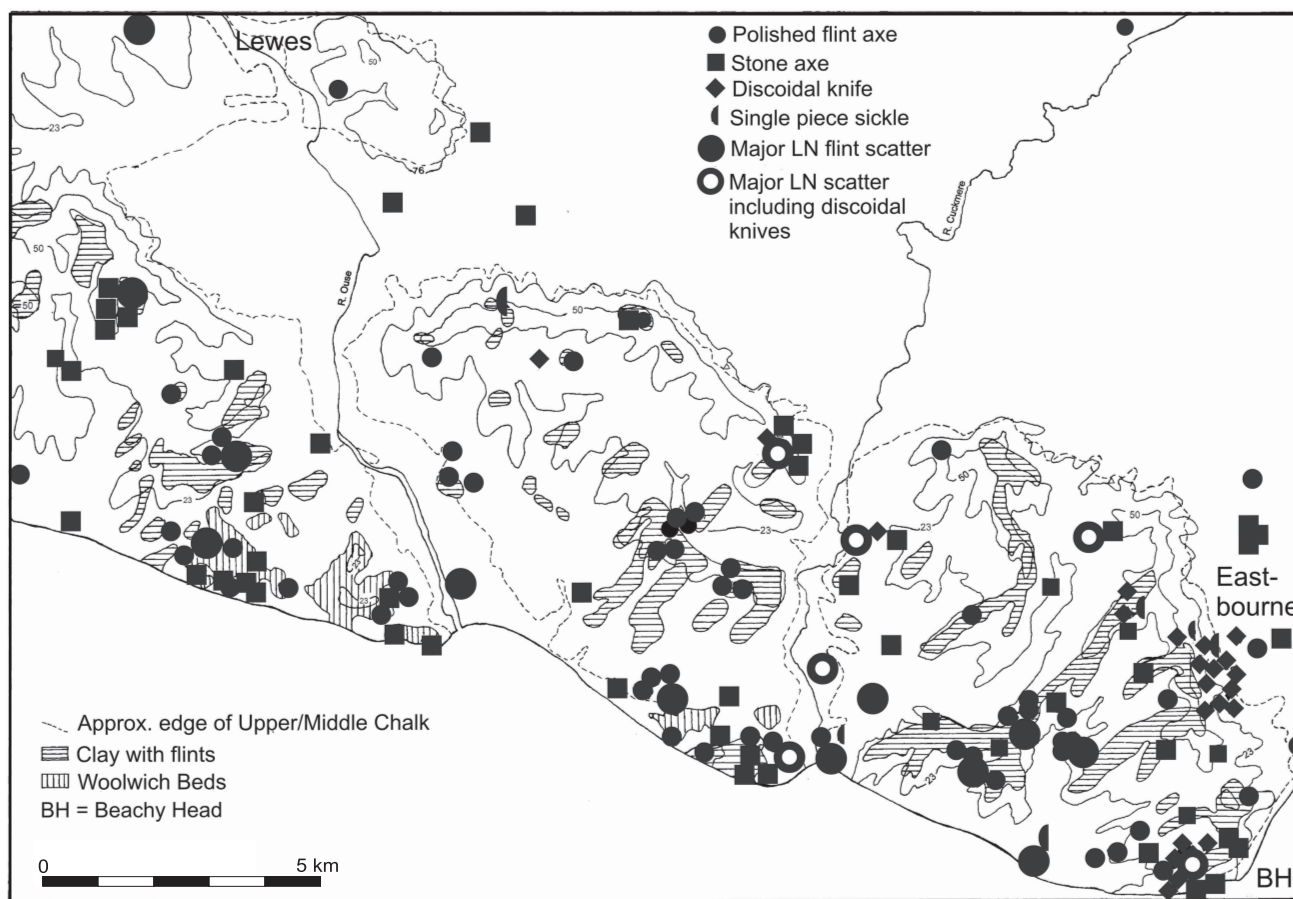


Figure 20.5 Late Neolithic-Early Bronze Age flint scatters of the Beachy Head Group, Eastbourne, E. Sussex with distribution of discoidal knives and other selected objects (see text).

On the face of it, there seems to be no obvious reason for the compelling differences in assemblage composition between the two groups of flint scatters. The distribution of flint sources is similar; the distribution of flint scatters in relation to those sources is also similar; and the overall nature of the scatters suggests nothing more elaborate than intensive domestic occupation during the later Neolithic, probably into the Early Bronze Age. There are no monuments, no relevant structured deposits, no pottery assemblages worthy of note, no burials, and both areas have access to major rivers, adjacent lowlands and the sea.

As discussed in a previous paper (Gardiner 1990), it is obvious that most of the flint axes in the Beachy Head area are made from locally available flint and that flint axe manufacture was an important activity in this small area of the Downs. There is a strong suggestion that communities here were supplying those in the Saddlecombe group with

axes. Perhaps, as in the Yorkshire example described by Durden (1995), the Beachy Head sites were primary producers of roughout forms that were then worked up and polished by more skilled flintworkers based around Brighton. The differences in assemblage composition between the two almost contiguous areas of downland indicate that, despite the presence of essentially the same flint resources north of Brighton, communities of the Saddlecombe group were not primary producers of these implements, though they were certainly consumers. This might suggest that communities of the Saddlecombe group exercised some control over the acquisition and use of specific flint resources occurring at a small but discrete distance, with the intention of investing time and skill in turning everyday tools (flaked axes) into finished, polished forms. This implies a relatively sophisticated level of social organisation and an acknowledged system of relative values.

Because of the nature of the old collections, which generally include very little debitage and few cores, we lack the means to test this theory by detailed technological and metrical analysis. The size and range of the flint scatters in the Beachy Head area suggests that these are more than just primary knapping sites anyway, but two assemblages stand out among them that might contain clearer evidence of this dichotomy. Many hundreds of flint implements have been recovered from Alfriston Down, from a chalk spur on the escarpment overlooking both the River Cuckmere and the Weald. Another large spread of material comes from less than 2 km downstream, above the opposite bank of the Cuckmere, at Litlington. Methods of collection are unknown but both sites were visited by the same principal collectors, each of whom was very experienced. The surviving assemblages each include more than 100 roughout/flaked axes and dozens of core tools such as picks but only three and six polished fragments respectively. Flake tools are dominated by fabricators and chisels rather than by scrapers and cutting tools (nearly 200 in total) and though few cores have been recovered, both include discoidal types. Each scatter has also produced two discoidal knives (including a finished but unpolished example from Litlington) and a couple of less well-provenanced stray finds are also reported.

But it is the discoidal knives, of course, that undermine the argument. Not only are there more than five times as many knives around Beachy Head than there are around Saddlescombe, but this small area has also produced notable concentrations of other 'fancy', finely-worked cutting tools including at least four flint daggers, nine sickles and over 20 plano-convex knives – all of them from among the major scatters rather than being stray finds or, in the case of the daggers, possible grave-goods. When last examined in detail by the present writer (1988) this constituted 90% of known sickles and 25% of surface collected daggers from the South Downs, and the numbers are unlikely to have increased dramatically since (Clark recorded five sickles in 1932). Just to throw an additional spanner into the works, we might also note that there are many stone axes, including perforated forms, in this area. Such items are not uncommon north of Brighton but there are only one-third as many.

Clearly then, skilled flint knappers were at work in the Beachy Head area too. So perhaps a different scenario presents itself whereby it was communities in this part of the Downs that were able to manipulate control over local surface flint resources and supply *finished* products to their neighbours. In order for such a scheme to work a concomitant restriction on the use of flint from equally adequate sources around Saddlescombe would somehow have to have been imposed. This again implies quite a high level of social organisation and the development of some kind of (perhaps fledgling) prestige goods economy. If such a scenario seems unlikely,

a similar situation seems to be apparent in Cranborne Chase, Dorset, where abundant suitable surface flint sources occur but most polished axes are made of non-local flint (Gardiner 1988; 1990).

In that area, of course, there is a concentration of monumental and non-domestic sites focused upon the Dorset Cursus that exhibit many forms of highly structured deposition, whereas in East Sussex there are no known Late Neolithic monuments or concentrations of, for instance, 'Grooved Ware' pits. If we are suggesting that there are indications of relative status between two groups of communities living at close quarters and with access to similar resources, then we probably need to look beyond the objects themselves for some underlying reasons. These may, or course, be matters of symbolism and perception that we cannot now observe.

One possibility is that these two areas of subtle but significantly different topography in terms of the orientation of dry valleys and upland plateaux areas presented significantly different environmental profiles in terms of the nature and distribution of soils, their hydrological properties and their supported vegetation. In combination with the noted differences in the flake tool components it is tempting to suggest that the Beachy Head group – with an emphasis on cutting tools including elaborate knives and sickles – was engaged in a range of activities that included the processing of arable crops, while the Saddlescombe group – with much higher proportions of scraping, piercing and fabricating tools, was more engaged in the processing of animal products. This is speculation, but such a scenario opens the door for all manner of social relations and interactions. However, such a proposition also takes us far beyond the available environmental evidence, though Allen's recent consideration of dry valley bottom deposits at several locations within the bounds of Figure 20.5 has demonstrated the presence of considerable depths of hillwash containing, or overlying buried soils incorporating Beaker deposits (Allen 2005). At Ashcombe Bottom, near Lewes (the most north-westerly flint scatter marked on Figure 5), ardmarks were recorded on a Beaker soil contained within one metre of largely decalcified colluvium (*ibid.*, 227-228, figs 7 and 8).

There seems to be sufficient evidence from the lithic material alone to indicate that later Neolithic communities in these two virtually contiguous areas of downland operated a closely connected but also complimentary system of social interaction. One area (Beachy Head) was producing high quality, high value flint objects whose distribution and use were differently directed and restricted. Polished flint axes were provided quite widely to the Saddlescombe settlements and we might assume that their utilitarian function was overwritten (or underwritten) by symbolic meanings that we cannot now witness or demonstrate but that were sufficient to

prevent the largescale production of similar artefacts from similar resources in the immediate area. There seems to have been no obvious restriction in their use on settlements in the area where they were produced. The occurrence of large numbers of stone axes among the Beachy Head sites is also interesting in this respect. Axes from Cornwall, Langdale in Cumbria and Wales occur widely among the Beachy Head sites as well as many in non-local stones; all materials that had, by one means or another, travelled considerable distances. It seems that the axe producers of Beachy Head were involved in trading their products well beyond the confines of the Sussex Downs in exchange for exotic items. Were they then passing on some of these to the Saddlescombe settlements?

In addition, extremely well-made, skilfully pressure-flaked knives were produced in apparently small numbers but few of these, other than plano-convex forms, were passed on and, even within the production area, their use was very restricted, implying a markedly high status and special character. In addition to the discoidal knives there are a small number of single-piece sickles, a type once again originally described from a handful of finds by both Evans (1872; 1898) and Clark (1932, who lists 52 examples from England). Nationally these remain even fewer in number than discoidal knives but their known distribution is remarkably similar, with the notable addition of several on the north Kent coast and a small cluster in Essex around the Naze (not, sadly, around Great Baddow!). These objects were defined as sickles partly because of their morphology but also because of the occurrence of invasive surface glosses on the cutting edge (Clark 1932), though van Gijn's work has indicated that examples in the Netherlands were used to cut sods rather than cereals (1988). Once again, they are nearly all surface finds with few unambiguous associations. One was found in an upper layer of the inner ditch at the Abingdon causewayed enclosure in a context associated with Peterborough Ware (Avery 1982). Other possible examples from both causewayed enclosures (*e.g.* Windmill Hill; Smith 1965, fig. 43, F69; see also Saville 2002) and henges (*e.g.* Durrington Walls; Wainwright/Longworth 1971, 174, fig. 76, F80) are generally fragmentary (and not always convincing) and from secondary or unstratified layers. There is, also, an unusual concentration of daggers in the Beachy Head area which do not seem to come from burials (indeed there are comparatively few Beaker burials in the area). We might suggest, therefore, that specialist flint production was continuing in this area after the introduction of metalwork – adding another small piece to the fragmentary jigsaw of Beaker occupation of the South Downs. But thereby hangs another tale.

2.8 CHANGING PATTERNS OF SPECIALIST FLINT PROCUREMENT IN THE NEOLITHIC ON THE SOUTH DOWNS

There is a very clear distinction in the use of flint sources on the South Downs between at least the Middle and the later

Neolithic. Although Neolithic monuments of any sort are few in number on the chalk from Hampshire to East Sussex, there was clearly a sufficiently large and well organised population by the Middle Neolithic to be building both long barrows and causewayed enclosures of closely comparable forms and at the same time as they were appearing in the rest of southern England (Bayliss/Whittle 2007; Whittle *et al.* in prep.). Flint assemblages of this period are notoriously difficult to identify, especially when they are unstratified, and while there are many undated flint axes around made from surface flint, the most notable aspect of the specialist acquisition is the occurrence of the flint mines. There is not space here to re-examine the many implications of the axe trade (see, for instance, Gardiner 1991; Bradley/Edmonds 1993; Edmonds 1995 among others) but suffice it to say that the primary product of the mines was axes and that their dissemination was very widespread, extending far beyond the southern chalk. There is no particular evidence that the actual mining was undertaken by specialists or that the finishing of objects and their distribution was closely regulated but the probable symbolism attendant on the procurement of the raw material and in their production and dissemination has been well rehearsed in the literature.

Precisely when and why mining ceased on the South Downs has not yet been elucidated but the later Neolithic saw not only a vast increase in the production of flintwork generally but also of core tools, including axes, produced from surface deposits that had already witnessed Neolithic activity during the currency of the flint mines. Although hardly ubiquitous, these deposits are quite widely spread and co-incide with major concentrations of surface flint scatters that obviously indicate domestic activity. It is difficult to envisage how any form of restriction or specialist organisation could be imposed on the production or movement of flint artefacts yet this seems to have been the case in certain areas. We have already discussed East Sussex in detail but there are also indications in Cranborne Chase, as mentioned, and also on the coastal plain around Bournemouth, where local flint resources are restricted to small but good quality gravels. Here, unusual quantities of very fine plano-convex knives and arrowheads were made from the gravel flint while flint axes were imported from the chalk and at least one hoard of axes is recorded (Gardiner 1988, 411). At least one polished discoidal knife is reported (*ibid.*) and there are several large assemblages of Grooved Ware.

It is hard to escape the conclusion that the later Neolithic saw a much more controlled pattern of flint exploitation and, in particular, of the restricted procurement of raw material for the manufacture and use of specialist forms, than has hitherto been apparent. Even today scholars are busy searching for the monuments whose presence must be implied by any such possibility on the South Downs. But,

this brief study of one poorly understood category of flint knife has demonstrated not only that surface flint assemblages have much still to offer in terms of elucidating the nature and distribution of the material culture of the Neolithic but also that some quite subtle aspects of social organisation and context can be gleaned from their detailed study where other, more obvious, symbols of status and structured deposition are lacking.

Many hours of my study tour in Leiden were occupied in conversation with Leendert Louwe Kooijmans, pondering on the underlying patterning and hidden meanings of the numerous flint assemblages we examined together. He taught me not to take anything (in flint) at face value but to look for what might be missing, and why, and to think hard about what artefacts meant to the people who made and used them rather than just what we might make of them, and why and how they came to leave them where they did. I hope that this paper will convince him that I am still thinking about it!

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J. Gardiner
 Wessex Archaeology
 Portway House, Old Sarum Park
 Salisbury SP4 6EB, United Kingdom
 j.gardiner@wessexarch.co.uk