RESEARCHES AND DISCOVERIES IN KENT

THE SOURCE OF PALAEOLITHIC FLINTWORK AT BISHOPSTON GLEN

Following a recent increase in the rate of erosion occurring on the parts of the cliff comprising the eastern bank of Bishopstone Glen, Bishopstone, near Reculver (TR 207 687) and the adjacent section of coastline, it was proposed by the Engineering Department of Canterbury City Council to undertake consolidation and drainage work in order to prevent further land loss. The area of the proposed works is of known archaeological importance, having been identified as the source of a large number of Palaeolithic flint hand-axes recovered over many years from the foreshore immediately below the Bishopstone Glen cliffs (see, for example, Perkins 1999, 369-73). It was therefore agreed that an archaeological evaluation by CAT in the form of test trenching should precede the commencement of the coastal protection works in order to investigate the nature of the Quaternary deposits which cap the cliff and from which the hand-axes are thought to derive. It was also agreed that a watching brief would be maintained during the engineering works, and that all removed deposits would be inspected for archaeological content. The evaluation focused on two closely related aspects of the site, the archaeology and the geomorphology.

The source of the prehistoric flintwork at Bishopstone Glen was previously thought to be horizontally-stratified Intermediate Head deposits, shown in the Geological Memoir to consist of approximately 3.70m of Head Brickearth sealing gravels of some 0.50m thickness which in turn overlie Tertiary London Clay (Holmes et al. 1981, Plate 1). These gravels, described as ‘unevenly bedded, sandy and ferruginous and including interbedded seams of brick-earth, with lenticules of gravel’ (ibid., 69), are equated by Holmes with those described by Whitaker (1872) as ‘2.4m thick, resting irregularly on London Clay [and] made up of flints (large and slightly worn, broken and subangular), flint pebbles and a few pieces of sandstone’. However, recent work described below suggests that the flint artefacts recovered at Bishopstone Glen may derive, either wholly or in part, from gravels within a deep-cut fluvial palaeochannel.
Two investigatory trenches were cut by the Trust in collaboration with Royal Holloway College, London. The trenches were cut to the depth of the Tertiary sands in order to examine the Pleistocene deposits which were thought to overlie London Clay. However, the deposit sequence was not consistent with the description in the Geological Memoir, nor with Whitaker’s earlier observation, as Pleistocene sands, silts and gravels underlying the Brickearth were present to depths in excess of 4m and no in situ London Clay was observed. In fact, the Pleistocene deposits were bedded on the sands of the Blackheath Beds, these being an earlier Tertiary deposit than London Clay. The Pleistocene sands, silts and gravels were interpreted as alluvial sediments within a small valley, the formation of which had removed the upper Tertiary deposits, including the London Clay. The earliest of the sediments within the valley (exposed at approximately 13.5m and less above beach level) were suggestive of small-scale fluvial braiding and cross-bedding.

The basal Pleistocene gravels at Bishopstone Glen (formerly known as the ‘Oldhaven Gap’) are considered by Evans (1897, 617), Smith (1918, 112) and Worsfold (1926, 334) to be the source of the oldest implements recovered from the cliff exposure, with the crisp condition of many of these implements, as noted by Clinch (1974, 311), arguing for only short-distance transport, or none at all. Short-distance transport or near in situ status was consistent with the results of a survey of the newly-discovered palaeochannel, which showed it to extend only 100m or so south and to have had a catchment area limited to the surrounding higher ground in the immediate area. Like the other drift-filled valleys to the west such as Hampton and Swalecliffe (see below), the presence of an ancient valley provides the explanation for the localised, linear deposit of Head Brickearth as a drift deposit filling a valley extending southward for about 100m from Bishopstone Glen.

The previously unsuspected presence of a small drift-filled valley as the probable source of the Bishopstone Glen flintwork raises a new interpretive possibility for the origin of these artefacts, especially in view of the concentrated nature of the find spots at the Glen. It may now be suggested that these lithic implements were discarded by early man during episodic occupation of a valley containing a small stream which, during the lower Palaeolithic, would have extended much further north, eventually to flow into the ancient Swale (Allen 2000, 183). As with the Hampton and Swalecliffe evidence (similarly derived from fills within ancient tributaries of the Swale), the Bishopstone Glen evidence may be assumed to have survived because, initially, it was not exposed to protracted, high-energy fluvial erosion.
following the formation of the Stour, and because it was subsequently sealed within drift deposits which later filled the valley.

TIM ALLEN


NEOLITHIC FLINTWORK: HOUGHAM WITHOUT

During the summer of 1996 the writer and Rob Masefield (RPS Consultants) monitored the construction of a new water main west of Dover. The pipeline, for Folkestone and Dover Water Services, ran from Lower Standen pumping station in the west to Dover Priory Station reservoir in the east.

A total of 526 pieces of struck flint was collected, 65 per cent of which was found north-east of the village of West Hougham where the route ran beside a track known as Back Lane. The main concentration of nearly 300 pieces was from a 200m length centred on TR 2713 4089 where the majority of the biface thinning and trimming flakes and most of the cores, blades and implements were recovered. The flintwork report below suggests that this concentration may represent the edge of a production site, probably from the earlier Neolithic period, which has been cut by the pipeline route. Flintwork collected from other areas along the pipeline route, though not in significant concentrations and sometimes less skilfully produced, appeared to be similar in character to those found at Back Lane.

The site is situated on Head Brickearth on the eastern end of a spur

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of high ground at a height of 137m above OD. Back Lane, possibly following the route of a prehistoric trackway, runs along the edge of this high ground and continues eastwards along an increasingly narrow ridge, past a pair of twinned prehistoric barrows on Whinless Down, west of Dover. The nature of the flintwork suggests a domestic settlement and its situation, on slightly higher ground south of Back Lane, on well-draining brickearth and with extensive views, would have been a prime location.

The Flintwork by Heidi Robbins BSc, MA

A total of 526 pieces of worked flint weighing 0.466kg and 2.76kg of burnt flint were recovered from the monitoring of construction on the Dover Spine Main. The flint was examined in detail in order to determine the major technological characteristics of the industry, its possible chronology and the range of activities represented. The majority of the raw material is a mid- to dark-grey chalk flint of medium quality. Some lighter grey material was also present and a small amount of high quality opaque light-orange flint. Flint occurs naturally on and near the pipeline excavation in Clay-with-Flint deposits and Chalk.

The flint was collected from the surface of the excavation area after the topsoil had been stripped and also from the spoil heaps beside the route of the pipeline. Standard methods of metrical analysis such as those described by Edmonds and Bellamy (1991) and Saville (1980) were employed to characterise the nature of raw material use. All intact flakes over 20mm were measured for length and breadth. These measurements were then used to calculate the ratio of breadth:length which can give an indication of the nature of productive activities and hence of chronology. The character and frequency of different types of waste is a function of technology, rather than a passive reflector of change through time. Thus, an Early Neolithic assemblage resulting from blade and flake production will present a very different profile from one resulting from the production of core tools.

The collection comprised 10 per cent primary flakes (flakes with total cortication across dorsal surface), 47 per cent secondary flakes (flakes with some cortex on dorsal surface) and 43 per cent tertiary flakes (flakes with no cortex on dorsal surface). The proportions of these flakes indicate that all stages of production took place on the site including some initial core reduction. Many flakes were rough and clumsy with over 20 per cent of the flakes recovered being broken. The majority of the flakes were large and thick indicating a less carefully controlled working of cores. A small number of biface trimming/thinning flakes and core trimming flakes were present. Breadth to length ratios show that 80 per cent of the flakes have ratios of between 3.5 and 5.5 which indicates that in general the assemblage is characterised by broad flakes with few narrow blade-like flakes and true blades.

Four whole cores were recovered as well as seven core fragments. Three of the cores were small (173g, 90g and 150g) and worked out. Most of the cores are roughly flaked and multi-platform, with visible flake scars suggesting
that the flakes removed were small and squat. This may be a result of the fact that the cores are nearly worked out, therefore the size and shape of the last removals may not be typical of the earlier removals from the cores. One of the cores has traces of heavy abrasion suggesting it may have been used as a hammerstone. In addition one small rounded pebble hammerstone was found on the site. There were three core rejuvenation flakes in the collection from one area which indicates some concern with core conservation.

Twenty-six implements were recovered or 5 per cent of the entire collection. There were only five formal tool types – three scrapers and two awls – none of which are diagnostic, with the remainder being retouched flakes. The nature of the trimming on these flakes is such that it is difficult to determine whether it does indeed indicate deliberate retouch or use damage or whether it is in fact accidental damage. A number of other flakes in the collection appeared to have retouch/utilisation, but it was felt that most of this was probably accidental scars from excavation and recovery.

There are several points to consider in the discussion of this collection. Firstly, the size of the area excavated is of importance in determining the significance of possible distribution patterns. The easement was 20m wide including spoil heap, so the actual width of excavation was c. 16m. The total length of the route along which flints were recovered was about 5.5km. The method of recovery, which was to some extent opportunistic, probably means that the flints collected are only a small sample of the total population. Furthermore it is possible that the true focus of the flint scatter was elsewhere, especially in those areas which had flints at very low density. The consequences of this method of recovery are that it is impossible to determine any meaningful spatial distribution patterns.

There were no notable differences in technology/chronology or raw material between the flint collected from different areas along the pipeline, although there was one area with a particular density of material. The main concentration of flints was situated in Areas 5 and 14 which are adjacent to each other. This concentration, which comprised 338 pieces of flint, was distributed along the pipeline for approximately 600m. The raw material was the same as the remainder of the collection, but the quality of the working was better. The majority of the biface thinning and trimming flakes and core trimming flakes were from this concentration, as were most of the cores, blades and implements. It seems that this area was possibly the focus of a large flint scatter of which the pipeline route may only have caught the edge.

The pipeline excavation, despite the problem of gaining meaningful spatial information, also has potential benefits. The fact that the line of excavation ran through a variety of soil types (Clay-with-Flints, Chalk and Head Brick-earth), means that it may be possible to distinguish different patterns of activity in accordance with changing geology. Area 5 and 14 with the highest density of flint are on Brick-earth which indicates that tested nodules must have been brought from nearby deposits, knapped on the site and the waste dumped there. This is interesting because one might expect a high density of debris from knapping on Chalk and Clay-with-Flint areas. It is useful to note that the flint concentration was situated on high terrain above a valley, a fact
which may be of some significance in explaining why this location was chosen for flint knapping activities.

The concentrations of burnt flint do not appear to coincide with the concentrations of worked flint. The two areas with the largest amounts of burnt flint are areas with low densities of worked flint. In some areas it was noted that the burnt flint was distributed evenly across an area.

The character of the overall collection is industrial. Some initial core reduction certainly took place at the site along with some core trimming, but only a limited amount of blade production. There was also evidence of a small amount of biface production in the form of a handful of thinning flakes. However, since there were few implements present, the end products of the activity at the site are poorly understood.

The industrial nature of the assemblage together with the absence of diagnostic tools means it is difficult to affix a definite date. The breadth:length metrical analysis indicates a generally broad collection of flakes, although this is a function of technology and only indirectly indicative of chronology. However, the presence of a few blades and a small number of biface trimming flakes suggest the assemblage may belong to the earlier part of the Neolithic, although a later date cannot be ruled out.

Flintwork has been recorded previously from Poulton Farm, immediately north of the site, and from an unidentified location in Capel-le-Ferne parish where Neolithic flakes and scrapers were found (SMRs TR 24 SE 29 and TR 23 NE 30). Work in 1998 on a waste-water pipeline to the south of the Dover Spine Main (Parfitt forthcoming) located six large concentrations of flintwork, the majority of the material being Neolithic in date. The closest of these concentrations to Back Lane are the probable domestic sites at Church Hougham and Great Hougham Court Farm, approximately 1.4km to the south. The accumulation of evidence suggests that Neolithic settlement was intensive in this part of Kent, especially on the higher ground.

MAUREEN BENNELL

PREHISTORIC FEATURES AND ROMAN FINDS: MANSTON INTERNATIONAL AIRPORT

In September-December 2000 Thanet Trust deployed an eight-strong excavation team at 'London Manet International Airport', formerly RAF Manston. The task undertaken by the team was that of large-scale evaluation and excavation ahead of the construction of aprons and taxiways. This phase of fieldwork took fourteen weeks, with a second phase scheduled for the summer of 2001. To the north-west in the 'cargo-side' area a single 20 x 20m box excavated by the team proved to be packed with features belonging to (possibly) four phases:

1) Possibly Neolithic. A pit with a base deposit of carbonised seeds, in the fill a leaf-shaped arrowhead, a beaker sherd, but also a fragment of Samian!

2) Middle Bronze Age. A curving length of ditch holding Deerel Rimbury bucket urn sherds, human and animal bones, shells, etc. It was established that this was not part of a round barrow.

3) An overall horizon at a depth of 65cm with Roman sherds, a tesserae cube, and a coin.

4) A ditch complex with deposits of carbonised seeds, burnt daub, environmental materials, and medieval pot sherds of the thirteenth/fourteenth centuries.

The second phase of archaeological work at Manston involved a large scale active watching brief over groundworks in the cargo-side area. This was to establish whether the multi-period remains described above were localised or widespread. In the event no significant archaeology was encountered.

DAVID PERKINS

LATE NEOLITHIC/EARLY BRONZE AGE SETTLEMENT: MINSTER IN THANET

In July 2001 the Thanet Trust conducted an archaeological watching brief in the grounds of, and to the north of, Minster CP School. The development involved ground works associated with the construction of three new classrooms. When topsoil had been removed by machine, archaeological features cut into the natural Head Brickearth deposit became visible. They consisted of two pits and two linear features, ditches or gullies. One of the linear cuts was straight where
exposed, but the other was sub-rectilinear, presumably part of an enclosure. Ceramic and lithic finds indicate a date for the features of c. 1800 bc. This site, together with the sites at Cottingham Road, Cliffsend (Perkins 1998) and at Ebbsfleet (Perkins and Hearne 1995) suggests a fairly dense pattern of Late Neolithic/Early Bronze Age settlement along the Thanet shoreline of the Wantsum Sea Channel.

DAVID PERKINS


BRONZE AGE DISCOVERIES AT RINGLEMERE FARM, WOODNESBOROUGH

In November 2001 Mr Cliff Bradshaw of Broadstairs was metal-detecting in a recently harvested potato field near Sandwich, when he discovered a gold vessel buried at a depth of about 0.40 m. Recognising this as a highly important find, he was able to provisionally identify the piece as being broadly similar to the celebrated Rillaton gold cup, recovered from an early Bronze Age barrow in Cornwall during the nineteenth century. The new vessel was discovered on the northern edge of a low, but quite distinct, mound which appeared to be the remains of an otherwise unrecorded round barrow.

The site lies in the parish of Woodnesborough, some 400m to the north-west of Ringlemere Farm and 150m north-east of Black Pond Farm, off Fleming Road. (NGR TR 2939 5698) The underlying geology in this area is Thanet Beds, sealed by Head Brickearth and patches of gravel. The mound is situated on a north-east facing slope overlooking the Durlock Stream at an elevation of about 13m above OD.

The gold cup represents a discovery of international importance with only four previous findings in Europe, including Rillaton in Cornwall (which is held at the British Museum); Fritzdorf and Golenkamp, both in Germany; and Eschenz in Switzerland. Versions of these cups have been found in other materials, including amber and shale from Southern England and silver versions come from Brittany. In general, the distribution of such cups ranges from Southern England to the Alps. The Ringlemere cup may be provisionally dated to the early Bronze Age, c. 1700-1500 BC.

With the aid of grant from English Heritage, the Canterbury Archaeological Trust – assisted by members of the Dover Archaeological
Group and the Trust for Thanet Archaeology – undertook a programme of field-walking and excavation at the site during the spring of 2002, with the specific aim of determining the precise context of the gold cup. English Heritage specialists conducted a geophysical survey of the site. The field evidence combined to show that this is a very large round barrow site. Barrows that have not been completely ploughed flat are rare in the extensively farmed landscape of east Kent but at Ringlemere the base of the mound survives. Initially, it seemed possible that the gold vessel came from a Bronze Age grave contained within the barrow but this proved not to be so and it is possible that the cup has been moved from its original position. The core of the mound had been extensively disturbed by burrowing animals and no clear evidence for any burial was found.

A second excavation was mounted in September 2002 on the eastern side of the barrow mound. This provided a significant amount of useful new information. The enclosing barrow ditch was again located and sectioned but it was found that the upper part of the ditch profile had been truncated by terracing, probably during the medieval period. However, the surviving lower ditch fills contained some very well developed laminated silts that may have considerable potential for further scientific examination.

Survival of the base of the barrow mound preserved evidence of earlier activity below it. Extensive collections of prehistoric struck flints and pottery indicate previous occupation on the site during both the Mesolithic and later Neolithic periods. The close proximity of a small fresh-water stream below the site may well explain the apparent popularity of the area with early settlers.

Acknowledgements

Thanks are due first and foremost to the owners – the Smith family – who readily allowed access to the site and took a great interest in the progress of the work. Thanks are also due to English Heritage and the British Museum for funding the excavations and providing substantial scientific back-up. The Staff of KCC’s Heritage Conservation Group monitored the project throughout and provided assistance in a variety of different ways. In addition to the full-time excavators from CAT, teams of volunteers from the Thanet Trust and Dover Archaeological Group were able to make a valuable contribution to the excavation work. Cliff Bradshaw worked extensively on the site, undertaking both metal-detecting and excavation.

KEITH PARFITT
RESEARCHES AND DISCOVERIES

A FLINT DAGGER FROM THE FORENESS-KINGSGATE AREA, THANET

This item was brought to the Thanet Archaeological Society/Trust by a pupil of Charles Dickens School, Broadstairs. He had been given it by his grandfather, a foreman building worker employed on construction of a large private housing estate at Foreness. The object had been found during building work in or after 1995. It is a pressure-flaked flint dagger with a leaf-shaped blade, blue-white patinated all over. Its length is 164mm with a maximum width of 44mm and a thickness of up to 7mm (Fig. 1).

Clarke (1970) illustrates twelve rather similar daggers, none of which are from Kent. All were found with beakers as components of Early Bronze Age burial assemblages. Except when preserved in these contexts, such delicate blades stand little chance of surviving intact. This gives rise to speculation that groundworks somewhere at Foreness may have encountered a high status beaker grave. The Thanet Society will attempt to obtain further information.

DAVE PERKINS

Clarke, D., 1970, Beaker Pottery in Great Britain and Ireland, Vol. II.

PLOUGHED-OUT ROUND BARROW: BIRCHINGTON

During July 2001 the Thanet Trust carried out an archaeological evaluation on land to the rear of 23-25 Anne Close, Birchington. Eighteen trial trenches were cut by machine, and the number and nature of the features observed was such that the County Archaeologist required further work on the site. This took the form of an open area excavation in which all topsoil was removed by machine, revealing chalk-cut features that were then either fully excavated or sampled. The exposed remains consisted of medieval pits and ditches dating from the thirteenth century, these overlaying ditches of an Iron Age field system. Other pits contained prehistoric materials, in one case Neolithic pot sherds.

The main feature of the site was the ring ditch of a ploughed-out round barrow, the upper fill of which yielded Iron Age pot sherds. No central internal feature could be found within the ditch, so that burials, had there been any, must have been lost with the ploughing off of a mound. Some pot sherds from an associated feature belong in the local fabric of the Deverel Rimbury tradition of the early Later Bronze Age c. 1200-800 BC, but these may long post-date con-

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Fig. 1 A flint dagger from Foreness, Isle of Thanet, to scale as shown.
struction of the barrow. Column samples were taken from sections of the barrow ditch fill and were subjected to molluscan analysis. The land snail evidence obtained strongly suggested that the barrow ditch had been originally excavated in a very open environment, pasture perhaps? These conditions continued until the Iron Age, when both land snail and physical evidence indicates a commencement of ploughing.

DAVID PERKINS

POSSIBLE IRON AGE SETTLEMENT: HOUGHAM WITHOUT

Four sherds of Iron Age pottery were collected in 1996 at approximately TR 2642 4056, just north of the village of West Hougham, during a watching brief on the Dover Spine Main. The material was found roughly 1.8km east of Iron Age finds from Hockley Sole on the same water pipeline project, described previously (Bennell 2002). Although the sherds are small, their condition and date, similar to some of the pottery from Hockley Sole, provides tentative evidence for 'Belgic'-period settlement at this location and is of value in calculating possible regional site density. The pottery has been examined by Nigel Macpherson-Grant whose comments are summarised below.

The Pottery by Nigel Macpherson Grant

The assemblage consists of four small scraps. Despite their size and a degree of excavational damage, the material is fairly fresh and the sherds are probably from the same vessel. The fact that the material was originally made in a soft fabric and yet has survived reasonably intact suggests that it is more likely to be derived from a settlement context, or settlement field-boundary context, as a rubbish deposit rather than redeposited as a manuring scatter. The vessel represented is made in 'Belgic'-style grog-tempered fabric. The thin-walled nature of the sherds together with traces of external burnished finish suggest the sherds are from a medium-diameter sub-fine ware jar or beaker form.

Dating could be technically anywhere between c. 75/50 BC to AD 50/75. The rather soft nature of the fabric suggests that it pre-dates the Romanising phase of this ceramic tradition. It could date to the first century BC but without additional confirmation it is wiser to
suggest a Conquest-period date of about AD 25-50/75. The information is of obvious value in regional period distribution and settlement studies.

MAUREEN BENELL


A MEDIEVAL COIN FIND: EYTHORNE

On the route of a Folkestone and Dover Water Services pipeline from Coldred to Eythorne, north of Dover, monitoring of archaeological trial trenches and topsoil stripping was undertaken by authorised metal detectorists. At TR 2833 4838, in Waldershare Park, Mr Maurice Worsley retrieved a medieval Venetian coin, described below, from the topsoil. The coin has been deposited at Dover Museum with the archive and report (Stump and Bennell 2001) for this project.

Waldershare Park produced large quantities of metalwork during Southern England Metal Detector Rallies in 1996 and 1997 (Parfitt 2000 and pers. comm.). Results from metal detecting on the route of the pipeline were, however, disappointing. Apart from the coin described here, the only items of note were fragments of a post-medieval pewter platter and drinking vessel and a post-medieval lead powder measure, identified by Luke Barber. The powder measure is in the form of a cylindrical ‘bucket’ with a small loop on the underside.

Coin Report by David Rudling

A large fragment of a silver soldino of Antonio Venier, Doge LXII of Venice (1382-1400), was discovered by a member of the White Cliffs Metal Detecting Club during topsoil stripping (Context 801) of Trench H in Waldershare Park. Details of the coin, which was provisionally identified by Mr D. Holman, are as follows:

Obverse: +.ANTO [VEN ERIO] DVX, Doge standing left, holding banner, star above C in field.
Reverse: ·S·M[ARC]VS· VENETI., Lion facing.

Venetian soldini, which are probably the commonest type of medieval continental coin found in England, were known in this country as
galyhalpens (galley halfpennies) because they were brought to England with the Venetian galley-fleet. From about 1400 this fleet set out for the north every year in May. Part of the fleet went to Flanders and the rest to the port of London, where the principal objective of the Venetian merchants was the purchase of wool. Despite rigorous laws preventing the import of foreign coin into England, galyhalpens were popular here due to a shortage of small change, especially of halfpennies and farthings. Soldini were about the size of the contemporary English halfpenny, but of inferior alloy, three or four of them being worth approximately a silver penny. Official measures against the use of soldini included continuous proclamations against, and seizure of, the coins. Finally, in 1415 a Statute was passed which included severe penalties for the importers and users of soldini, and the coins do not appear to have caused any further problems during the remainder of the fifteenth century (Spufford 1963).

For a discussion about a brief resurgence of soldini in England during the early sixteenth century, the reader is referred to the paper by Peter Spufford (1963) and to an article with regard to such coin finds in Sussex (Rudling 1989).

MAUREEN BENNELL


DOCUMENTARY AND ARTISTIC EVIDENCE FOR CONJOINED TWINS FROM SIXTEENTH-CENTURY HERNE

Our knowledge of disease in earlier British societies is largely based on the detailed osteo-pathological study of excavated skeletal remains (Cox and Mays 2000). However, other avenues of research, including the examination of documentary and artistic sources, may provide valuable information on the history of disease (Anderson 1994a). This is particularly pertinent in the study of major congenital anomalies. Recent work has identified several individuals with conditions which have not been recognised in British skeletal
material (Anderson 1994a-d; 1997a, b, 2000, Table 6). The present note is to draw attention to such documentary evidence for conjoined twins from sixteenth-century Herne. A condition, which today has been reported to occur in only 1:50,000 live births (Potter 1962, 217).

A series of Elizabethan illustrative ballads and broadsides, part of the Huth and the Heber Collections, are housed in the British Library (Collman 1872; Huth 1867). They describe marvels of nature as well as several examples of human congenital deformities (Anderson 2000, table 6; Wilson 1993). Such birth defects were then regarded as the work of God, a punishment for the immorality of the parents rather than a medical condition (Anderson 1994b, fig. 8). Indeed, the description of the present case from Herne does not contain any suggestion of a medical condition. We are told that the monstrous and unnatural shapes of these children are evidence that God is offended with the parents for some notorious vice or offence. The readers of the broadside (Collman 1872: 62) are also admonished to amend their lives, which may be many more times more wicked than that of the parents of the malformed children:

The true description of two monstrous Chyldren Borne at Herne in Kent.

The Monstrous and vnaturall shapes of thefs Chyldren & dyuers lyke brought foorth in our dayses (good reader) ar not onelye for vs to gafe and wonder at, as thyngs happenynge either by chaunc, or els by naturall reason, as both the old and our Phylophers alfo holde now a dayes: and without anye farther heede to be had therto, or els as our common cuftome is, by & by to iudge god onely offended wyth the Parentes of the fame, for some notorious vyce or offence reynging alone in them: But they ar leffons & chfolynes for vs all (as the word monster fhewith) who dayly offende as greously as they do, wherby god almyghte of hys greate mercy and longe sufferaunce admonyeth vs by them to amendmente of our lyues, no leffe wycked, yea many times, more then the parentes of suche malformedes bee. That this is true they fhal wel perceyue, y¢ ryghtly wey and confider the aunfwere of oure Sauiour Chryste vnto hys Dyfycples, askyng hym whether we are greater finners, the blinde hym felle, either els hys parentes, that he was fo borne: To whom our fauyour Chrysty aunfwered, that nether he, nether they were faulye therin, but that he was therfore borne blinde, to thend the glory of God myghte be declared on hym, and by him. The fame also appereth in another aunfwere made by our fauyour Chryfte to them, whyche tolde hym of the Galleyans whom Pontius Pylate put to death for theyr rebellyon agaynft Augustus theyr Emperoure, wherin he declareth (as alfo by thofe xviii. persons on whom the Towre by Sylo fell) that there were as great offenders remaynye

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alyue, as any of them were. Wherfore he eftfoes admonyfhed them to amendment of lyfe in generall: or els by their examples threatened them with as greauous dystructyon, as fell ypon any of them. Thefe examples moued me (good reader) in consideracyon of thefe dayes of our forgetfulness of duty, wherin we fett fo lyght the greate bounty and goodnes of God, callynge vs by thefe and fuch lyke examples to repentaunce and correction of manners, and not ftyll to flatter our felues whyle we judge others and winke at oure owne faultes, to caufe thefe twynnes thus to be portractured. And fure to hym that greate decay of harty loue and charitye (among many other wantes that the world isnowe fallen in,) and had vewed and behelde the two babes, the one as it were imbrayngethe the other, and lenyng mouth to mouth, kyffing (as you wold fay, one another:) it myght feeme that god by them dyffem胭yngne and Judas condycyons & countenaunces, in freyndly wordes, couerynge caynes thoughtes and cogytacions, or els theyr feblanaunte and example, exhorte vs to fincere amytie and true frendfhy, voyde of all counterfeytinge, or els bothe. Neyther let any man thynke thys an obferuacyon ouer curyous, for as much as Chrift him felle hath by chyldren taught vs, fhall not come in the kyngdome of heauen. God make vs all chyldren in thys wyfe, and perfect and well lernde men to note and obferue to what ende he fendeth vs fuch fghtes as these, that herby (put in remebrauce the rather of our duties both to hym and our neyghbours) we may atteyne to lyfe euerlaftynge by Chryfte our Lord. To whom with the holy Ghofte for thys and all other hys workes, be all maiety, powre glory and domynyon, now and euer. Amen.

However, the illustration, clearly shows two distinct well-formed figures standing upright, facing each other and joined together at the umbilicus (Fig. 1). According to the title of the document, the twin girls, were born on the twenty-seventh day of August 1565 at Herne. They were christened but only survived half a day, one living almost an hour longer than the other.

Today, congenital diseases are feared but are generally understood. In earlier societies the situation was quite different. In Classical times such monsters were considered to be a warning from the Gods and they would be exposed in some uninhabited place or placed near or in running water. St Augustine took the view that they were a reminder from God of man's imperfection and original sin (Gélis 1991, 262-3). Also, several scholars, including Aristotle, Hippocrates, Empedocles and Pliny the Elder thought that the unborn child was susceptible to external stimuli (Barrow 1971).

Such extrinsic factors, known as maternal impressions or imagination, were blamed when a case of craniopagous twins (joined at the head) were born in sixteenth-century Germany. Apparently, the pregnant mother accidently clashed heads with a neighbour (Guttmacher
The true description of two monstrous children born at Herne in Kent in 1565

(RIB 18316 reproduced by permission of the Huntington Library, California).

and Nichols 1967). Ambroise Paré, a French Surgeon, writing in 1570, thought that monsters, including congenital deformities of human beings, could be caused by:

God’s Glory or His Wrath; too much or insufficient seed; imagination; narrowness of the womb; indecent posture of the mother during pregnancy; injury to the womb, a fall or by blows; hereditary or accidental illness; rotten or corrupt seed; mixture or mingling of the seed; artifice of wicked spital beggars; through Demons and Devils (Pallister 1982: 3-4).

In the Herne case, these monstrous children were regarded as God’s punishment for the wickedness of the parents. However, the parents are not named in the text and we do not know if the children were born out of wedlock. This is in contrast to ‘a monstrous child’
born to an unmarried mother, Margaret Mere of Maidstone, in 1568. The child was suffering from cleft lip; spina bifida cystica and talipes (club foot) deformity but to the sixteenth-century mind the child was ‘... a terreur as well to all such workers of filthynes and iniquity, as to those ungodly livers’ (Anderson 1994b, fig. 8). The witnesses included a plumber, a glazier and a goldsmith, professions which were highly regarded in the sixteenth century (Anderson 1994b).

Also, conjoined twins born at Stony Stratford in 1565 were illegitimate. Their father, Richard Sotherne, fled leaving the mother. Both girls, joined the whole length of the chest and at the head, were baptised but only lived two hours. The dead body was then taken to London where it was seen by several worshipful men and women of the city and the country (Collman 1872, 40).

Both Herne children are complete, well-formed, distinct symmetrical entities, although firmly united to each other at the umbilicus. This condition is correctly known as omphalopagus twins (Potter 1962, fig. 218) and is not in itself incompatible with life. Perhaps the best known examples being Chang and Eng Bunker (males, the original Siamese twins), who both married and were 63 years old when they died (Hunter 1964). However, a review of conjoined twins indicates that the majority are female (Gould and Pyle 1896, 171-183).

Earlier cases of conjoined twins include the famous Biddenden Maids, Mary and Eliza Chulkhurst, who were, according to legend, born in 1100 and survived for 34 years (Ballantyne 1895). Apparently born to wealthy parents, they were able to bequeath 20 acres of land to the parish when they died. The rent from this being used every Easter to provide the poor of the parish with bread and cheese and also to hand out cakes (bearing the impression of the maids) to visitors to Biddenden on Easter Sunday (Gould and Pyle 1896, 174). Also two conjoined boys are known from late fifteenth-century Scotland (ibid., 176).

We have no evidence from the study of skeletal remains for conjoined twins in earlier Britain. However, documentary evidence indicates that such conditions did exist including the two Kentish examples: one (unconfirmed) from twelfth-century Biddenden and now at sixteenth-century Herne. However, many other cases of monstrous births may remain unrecorded. For the most part, they were probably not given burial in consecrated ground and so are not recovered archaeologically. Also, our documentary evidence is biased to the sixteenth century when such birth deformities were recorded solely as a warning against immorality. The earlier Biddenden Maids, no doubt, being remembered due to their bequest of land and the continuing custom of Easter distribution to the poor.

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[Note: a version of this article appears in the American Journal of Medical Genetics, 109, 2002, 155-59.]

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UPDATE ON THE STIRLING CASTLE INVESTIGATIONS

Seadive, the local Thanet amateur diving group, resumed survey work on the wreck of the Stirling Castle, following their highly successful season in 1999. They found that the wreck of this great seventy-gun ship of the line was much more exposed and therefore much more vulnerable than in previous seasons. The passage of vast ‘sand waves’ across the hull had emptied lower decks of mud and sand, upper deck remains were no longer supported, and heavy objects such as cannon were in danger of crashing down through the deck timbers into the heart of the ship or onto the seabed beyond.

A number of small items were seen to be at risk and were lifted; some of them were listed in Archaeologia Cantiana, cxix (1999). Recoveries in the 2000 diving season included the remains of flintlock pistols, wooden bowls, leather shoes, and, a small tub-like container filled with grapes! Finds brought up late in the 2001 season featured glassware and ointment jars, presumably from the kit of the ship’s surgeon. There was also a frighteningly large silver syringe!

By far the most arresting of the endangered objects was however a large iron cannon, probably an eighteen pounder. This was complete with its wooden carriage, axles and trucks, and recoil and securing tackles. Such a unique find could not be left to crash through the disintegrating bulwarks onto the seabed, so that a salvage vessel was commissioned, and the gun was brought into Ramsgate harbour where it remains submerged while a conservation programme is planned (see below).

The Thanet Trust laboratory is currently working on the small objects described above, and when they are stabilised and recorded they will be passed to Ramsgate Maritime Museum for display. The unlikely survival of the grapes (sealed in an anaerobic silt layer) is a discovery of such potential for research that they are best placed with experts in archaeobotany.

Conservation and eventual display of the cannon will be costly and challenging, but the subject demands it. While ship’s guns of the Napoleonic War period abound, when found at all, cannon of the seventeenth century exist only as iron barrels without carriage and fittings. The complete Stirling Castle cannon is in that respect unique. It is proposed that a prefabricated building be erected adjacent to the Ramsgate Maritime Museum to enclose a conservation facility to which the cannon will be brought by crane. The iron barrel and wooden carriage will have then to be separated, as mutually incompatible conservation processes will be employed. It is hoped that
during the many months of work on the cannon, the public will enjoy a degree of access so as to be able to watch the conservation. The final display venue for the cannon will be Ramsgate Maritime Museum.

DAVID PERKINS

AN EIGHTEENTH-CENTURY CHALK MINE: NORTHFLEET

In 1998, Bovis Ltd, kindly allowed the investigation of a small chalk mine by members of the Kent Underground Research Group on a housing site at Lanseer Avenue, Northfleet. Archaeology South East, the archaeological contractor conducting the watching brief on the development, contacted the Group when a subsidence occurred which revealed the presence of chalk tunnels beneath part of the site at TQ 6291 7199. An underground survey was undertaken by H. Pearman and T. Reeve of KURG and the resulting plan shows a set of workings dug on the 'pillar and stall' principle of mining where pillars are left to support the ground above the excavated galleries. (Fig. 1).

The top of the chalk strata was only just below the levelled surface of the site and the chalk galleries were found to be only 1.0m below ground level with cross sections of 1.7-2.0m high and a similar width. Despite the very thin roof cover there was no evidence of major roof falls except where the junction of two passages had collapsed giving rise to the sudden subsidence. The passing of heavy construction plant over the area probably contributed to this failure. Many pick marks were visible and a small patch of soot from a lamp or candle was noted. The floor of the mine was found to be level and covered with a thin layer of chalk debris.

The original entrance shaft to the mine was sealed behind specially built flint walls. When mining operations ceased these walls were constructed at the base of the shaft across the openings to the galleries using an unwanted by-product of chalk extraction. The shaft was then back-filled to the surface, with the flint walls sealing off the rest of the excavation. This method of making safe a dangerous pit-fall has been observed in other chalkworkings in the area. J.E.L. Caiger recorded a shallow chawell at The Drove Way, Northfleet, which also had the remains of a retaining wall at the base of the shaft.¹ A. Pearce and A. Ridgers surveyed a partly collapsed chawell in 1984 approximately 1km to the south-south-west of the Lanseer Avenue site that also had a flint retaining wall. It had also been dug with very shallow roof cover.²

The writer has examined a large number of chalk excavations in the
Fig. 1 A post-medieval chalk mine at Lanseer Avenue, Northfleet.
area of Gravesend, Northfleet and Southfleet over the past forty years. The medieval deneholes surveyed showed the usual double trefoil ground plan and had been dug with sufficient roof cover of chalk to ensure safety and stability. Excavations of a later date, however, resembled the Lanseer Avenue site in having been excavated dangerously close to the surface.³

Prudent miners would sink the shaft through the chalk until they were sure of a strong and stable roof layer to minimise the risk of falls during chalk extraction and to ensure ground stability when mining had ceased. Where the chalk was near the surface they would leave around 2.5-3.0m of solid chalk before horizontal excavation was commenced. When surveying chalkwells of seventeenth- to early twentieth-century date, it is possible to determine, from the method of working, whether they were dug by a team of professional itinerant miners or by local farm labourers. It is certain that non-professionals with little knowledge of mining safety dug the present site, and the similar shallow mines of the area.

A rough calculation of the chalk yield of the mine gives a figure of approximately 350 tons. This amount is about the same that would have been extracted from a typical three-chambered agricultural chalkwell of the seventeenth-nineteenth centuries. As with a chalkwell or denehole the chalk would have been spread on the surrounding field as a top dressing, a rate of up to 40-60 tons per acre being typical. Farmers often preferred one heavy dressing of chalk every 20 or so years than a lower rate more frequently.

Some other chalk workings in the area have been given a tentative date of mid to late nineteenth century.⁴ The Lanseer Avenue site appears to be a little earlier, and a date of the early eighteenth century is suggested. Shortly after the examination and survey of the site, the roof of the mine was deliberately collapsed by mechanical plant and the voids filled with concrete grout.

ROD LEGEAR

⁴ Ibid., 72.
A WATERCRESS BED IN EYNSFORD

An initial survey of and typology of watercress beds in Kent identified twenty-seven sites depicted on OS maps, mostly on the fringes of the Chalk Downs of north and west Kent, including a group in the Darent valley.1 There is also convincing evidence for the former existence of another Darent watercress bed at Eynsford (TQ 539 655). This can be seen on the 1895 revision of the 6in. OS map originally surveyed in 1864-67 (reduced in Fig. 1), though it is not marked as a watercress bed. It also appears on the 1895-7 edition of the 1:2500 OS map, where it is named. It appears as a serpentine system of channels between the main course of the Darent and a drain which joins the river near Eynsford bridge. It would seem to fall into Eve’s Type 5 (bypass channels) although as far as can be seen from the maps the system of channels is only connected to the main river at one end. Possibly the survey was not accurate, since this would imply that there was not a continuous flow of water through the bed. The local water is clearly favourable as the wild plant flourishes in the Darent about a mile upstream from Eynsford.

The drain and river are shown similarly on the Tithe map of 1842 and the OS map surveyed in 1867-68 but there is no sign of the watercress bed at these dates. An undated photograph (Plate I), taken

PLATE I

The Watercress bed in Eynsford (undated)
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Fig. 1. The Eynsford Watershed bed shown on the 6in. OS map (1895), surveyed 1864-67.
from near the railway viaduct and looking towards Eynsford Church, shows the Darent and part of the channels, with Home Farm on the extreme left.

The field containing the bed was at this time next to, but not part of, the land of Home Farm, Eynsford, which has been farmed by the Alexander family since 1892. Mr James R. Alexander says that his father, born in 1882, remembered the watercress bed. Subsequently the field was incorporated into Home Farm and the field is still known as Watercress Field.

The ownership and management of the bed and its date of formation are uncertain with no documentary evidence having been found in Trade directories or elsewhere. The limited number of map editions only permits dating between the late 1860s and 1895, a period when other Darent valley beds were made. The date of the ending of watercress production is also uncertain. Mr Alexander, senior, recalled that it ceased after the Metropolitan Water Board started pumping from a nearby well and deep borehole, possibly lowering the water table. However, this only began in 1921, and the bed had probably disappeared before then, since the channels are not shown on the 1907 revised OS map. The pumping did affect the upstream part of the drain, above the site of the watercress bed, and a pipe was run from the river to the lower part so that drinking water for cattle was still available. This arrangement is still in existence. Ploughing has obliterated all traces of the watercress channels but the low-lying field is still liable to flooding.

WILFRID DUNCOMBE

3 The author is indebted to Mr Alexander for this information.
4 Information from Thames Water.